SCRUTINY REVIEW

OF TREES

FINDINGS

FEBRUARY 2009

CONTENTS

THE RECOMMENDATIONS

R1 - The Council should *ensure* that:

- all tree pits should be provided with an irrigation tube
- regular watering is carried out for one year in order to maximise the survival rate of newly planted trees and take good care of local resources
- that maintenance schedules should be provided to street scene officers
- that the date of planting should be registered so that checks may be made within a year of planting and any replacements carried out at the suppliers' expense

R2 - When planning new tree planting, the Council should endeavour to select a judicious range of tree species of sufficient maturity to:

- maximise the chance of it thriving in its new environment, taking into consideration hostile growing conditions on the highway and the new extremes of weather conditions experienced in recent years
- ensure easy maintenance in the vicinity of street trees
- maximise environmental improvements in temperature, air quality and rain interception in the borough, especially in areas prone to high temperatures due to the urban heat sink effect, extremes heavy pollution and flooding.

R3a - The Council should undertake a systematic investigation into effective ways of reducing avoidable tree death and use their findings to reduce tree damage and death and make savings on works required to replace trees.

R3b - That the Council should use savings from reduced tree deaths to increase its tree stock and improve maintenance

R4 - The Council should provide more effective publicity regarding the harm dogs can cause to trees and more robust protection to trees to prevent vandalism.

R5 - In view of the critical role of trees in moderating temperatures, improving air quality and intercepting rainfall and the increasing pressures on the environment arising from high density housing, the Council should include policies relating to the protection of trees in its Development Control Policies suite as part of the Local Development Framework. This is to provide planning officers with a robust framework with which to provide protection for local trees affected by future planning applications.

R6 - The Council should also produce a Supplementary Planning Document (SPD) on trees at the earliest opportunity. It should link in with the Council's Supplementary Planning Guidance 12 (Landscape Design) and Supplementary Planning Document 3 (Designing 4for Community Safety) and the Council's Nature Conservation Strategy, and take into consideration recent developments in good tree maintenance. It should provide information on:

- legislation relating to tree protection
- Tree Preservation Orders
- planting, maintenance and protection of roots, trunk and branches during works in the vicinity of trees
- selecting suitable tree species for a particular site-
- issues relating to crossovers
- urban design issues

R7 - Records of Tree Preservation Orders (TPOs) should be made available to the public through the Council's website in a user-friendly format. Easier access to this information will help residents to report unauthorised felling or pruning in the borough.

R8 - The Council should ensure that precautions are taken not to harm trees while lawn-mowing in parks and green spaces.

R9 - The Council should recognize the contribution trees make to the environment and include a reference in the following Council strategies and action plans:
- Carbon Management Action Plan
- Air Quality Action Plan
- Climate Change Strategy
- The Council's Core Strategy
- Area Action Plan for Croydon Metropolitan Centre

R10 - The Council should look to increase current funding levels to make up the current shortfall in street trees and to improve tree planting practice (eg selection of larger specimens and installation of irrigation tubes) and maintenance within the borough.

R11 - That the Council should seek to improve funding to improve carbon neutrality, air quality and climate change and use this to plant appropriate tree species in suitable locations to attain the objectives of the above strategies.

R12 - The Council should improve the enforcement of agreements made with developers to plant trees as part of a new development.

R13 - The Council should publicise grants for tree planting which are available to local volunteer or residents' groups but not to the Council, through its newsletters, its website, and e-mail to local volunteer or residents' groups where appropriate.

R14 - The Council should publicise tree sponsorship opportunities more widely and make information and application forms available on its website

R15 - Council officers should raise public awareness of issues relating to local trees throughout the borough to encourage increasing numbers of residents to provide simple care to trees in their locality eg watering to young saplings and during droughts.

R16 - The Council should set up a network of individuals or groups with a particular role in caring for trees, and provide them with information and advice on how best to care for trees in their neighbourhoods. Such networks can involve existing residents' associations, street champions, or residents who are currently not attached to any particular local network.

R17 - Council Members should be offered training regarding trees, their planting and maintenance, and the opportunities and challenges they present, particularly for the environment.

R18 - Council Members should be advised seven days in advance of trees to be cut down in their ward.

1 - INTRODUCTION

The London Borough of Croydon benefits from beautiful green spaces, with considerable areas of woodland, parks and street trees. However, a growing number of residents' complaints to officers and councillors in recent years suggested a need to take a closer look at local trees and their upkeep.

Further investigation revealed that this problem was shared with other London boroughs, with tree planting and maintenance budgets kept at very low levels.

These problems were brought to public notice with the publication of the report "Chainsaw Massacre - A review of London's street trees" for the London Assembly's Environment Committee in May 2007 and the "Trees in Towns (2)" report produced by Adas UK (Myerscough College) for the Department for Communities and Local Government in February 2008.

In response to these issues, Scrutiny Councillors agreed to conduct a review of trees in 2007-2008. They also agreed that a survey should be conducted to ascertain local residents' views regarding trees. Their response was completely unforeseen. Survey forms and letters came through the post and by e-mail in large numbers, attesting to local residents' appreciation of the benefits of local trees, and to their concerns regarding the gradual disappearance of street trees near their homes and poor maintenance.

This report explores the benefits that trees may bring to an area and its inhabitants. It also investigates the problems relating to trees which were reported by residents and the resources available to maintain Croydon's urban forest. Finally, it makes recommendations which it is hoped will lead to improvements in the tree service and resources available for it.

An overview of work carried out

The Members' working group consisted of Cllrs Donald Speakman (Chairman), Yvette Hopley, Sue Winborn, Maria Garcia, Karen Jewitt, George Filbey, Simon Hoar, Luke Clancy, Shafi Khan and Paul Scott.

After agreeing the terms of reference (see Appendix 1), Members met with the following officers and interested parties, to whom they offer their thanks for the useful information obtained through briefings and discussion:
- the Trees and Woodlands Manager
- Highways and Streetscene officers
- Planning officers with responsibility for planning applications, Tree Preservation Orders and Urban Design.
- the Council's Community Partnership Officer who supports Friends' groups, and two representatives of Friends' groups

Consultation was also carried out with Croydon's Streetscene champions and London boroughs.

Information gathered from these meetings was complemented by desk research regarding the impact of trees on the environment, external funding sources, tree sponsorship, etc.

As explained above, the review also involved consultation with residents through a survey, which drew 381 responses. The results of the survey were communicated to residents

through Neighbourhood Partnership meetings and through the Talk2Croydon community website. These are shown in Appendix 2 of this review.

It is hoped that this review will lead to the following outcomes:
- increased Member awareness of and involvement in issues relating to trees
- Increased funding and tree planting
- Better publicity about trees and greater local awareness of the benefits of trees and involvement in their care
- Improved record-keeping regarding the maintenance of trees in Croydon
- Improved tree maintenance in Croydon

2 - THE LOSS OF TREES IN CROYDON

The current loss of trees was the key concern of respondents to the tree survey. 184 respondents felt that there were too few trees in the borough or commented that more tree planting was needed in Croydon. 93 respondents, including some of those who felt there were too few trees, commented specifically on trees being cut down and not replaced in the borough.

In response to the question “where are trees needed?”, 51 suggested they should be planted along roads, streets or pavements, 26 answered they should be planted in the sites from which a tree had previously been removed, and 13 felt that more trees should be planted in various town and district centres. 70 residents requested for more trees at a particular location near their homes.



Empty tree pits in residential streets

Reasons why street trees are cut down

Members were advised that street trees were cut down for a wide range of reasons:

1. Many trees have to be removed because they are dead or diseased. Factors include storm damage, root damage and contact with toxic substances during works, as well as the very hostile urban environment. It is estimated that over 75% of the trees that die each year are between 5 and 25 years of age.

2. Limited maintenance over the years has also contributed to tree disease and death, with no fertilising or watering regime, and little scope for street trees to get access to rain water within their confined planting beds. The lack of basic nutrients is likely to make street trees more vulnerable to extreme environmental conditions and disease, particularly when a young sapling is not yet established. Watering of trees is included in the Council’s current horticultural contract, but performance in this respect can be very difficult to monitor.

R1 - The Council should ensure that:
- all tree pits should be provided with an irrigation tube
- regular watering is carried out for one year in order to maximise the survival rate of newly planted trees and take good care of local resources
- that maintenance schedules should be provided to street scene officers
- that the date of planting should be registered so that checks may be made within a year of planting and any replacements carried out at the suppliers' expense

3. It is suspected that many trees suffer root damage during works carried out by utilities. Root damage can take many years to bring about the demise of a tree. It can consequently be very difficult to claim for damages from a given company, particularly if excavations have been carried out in the area by more than one agency.

Utility works near a tree

4. Some tree species, e.g. the Sorbus genus (eg rowan), appear to be particularly vulnerable in an urban environment, particularly when planted on tarmac sites.

A rowan in a residential street

In contrast, some species are very tolerant of an urban environment. For instance, the London plane can cope with ozone and sulphur dioxide pollution, and was widely planted in the 19th century because of its capacity to withstand the severe pollution in the capital. It can also survive poor soils, high concentrations of salt from gritting, pavements over roots, heavy pruning and more general abuse than most other trees. Although the tree does best on moist, well-drained soils, it can withstand both wet conditions and droughts. However, care needs to be taken when selecting suitable locations for planting London planes, as they can grow to a considerable size if not regularly pruned or pollarded. A smaller tree that tolerates pollution and can be used in towns and industrial areas is the whitebeam, an attractive native tree.

R2 - When planning new tree planting, the Council should endeavour to select a judicious range of tree species of sufficient maturity to:
- maximise the chance of it thriving in its new environment, taking into consideration hostile growing conditions on the highway and the new extremes of weather conditions experienced in recent years
- ensure easy maintenance in the vicinity of street trees
- maximise environmental improvements in temperature, air quality and rain interception in the borough, especially in areas prone to high temperatures due to the urban heat sink effect, extremes heavy pollution and flooding.

5. About 30 trees a year are removed because of excessive fruit production and the health and safety risks this represents. One species in particular, the Apple Pear (Pyrus communis) has been found to be very troublesome to residents. A large number of this species were planted in Croydon some 20-30 years ago.

6. According to the Tree Council and the Arboricultural Association, compaction of tree roots by vehicles is a significant cause of tree death, other concurrent effects being harm to soil quality and disruption to the tree's respiration processes. This could be reduced through more careful management of vehicle parking. Other causes of compaction include placing toxic or heavy materials such as concrete paving stones in the close vicinity of a tree, eg during building works.

7. Another 30 trees on average are removed each year for insurance reasons. Because of subsidence fears, the Council's insurance company, Zurich Municipal, make recommendations to fell trees on the basis of surveys carried out in specific locations. However, the Mayor of London's Tree and Woodland Framework suggests that there is evidence that the perceived threat of subsidence in Greater London is much greater than the actual threat. In addition, the supporting information provided with insurance claims is often inadequate, as insurance companies are reluctant to invest time and money on costly tests which can provide conclusive proof regarding the threat of subsidence.

   Croydon Council currently has a good track record of contesting recommendations for felling trees: out of approximately 100 requests to fell trees, 60% are refused.

Since 2006, tree budgets have increased significantly (see section 5 of this report), allowing for approximately 300 replacement trees to be planted every year and for a programmed maintenance programme to be implemented. However, Members are keen to find ways of reducing the numbers of tree removals - approximately 500 street trees are removed every year - and using savings achieved to plant more trees and improve maintenance further.

R3a The Council should undertake a systematic investigation into effective ways of reducing avoidable tree death and use their findings to reduce tree damage and death and make savings on works required to replace trees.

R3b - That the Council should use savings from reduced tree deaths to increase its tree stock and improve maintenance

Requests to cut trees down

Many residents contact the Council to request trees to be cut down for a wide range of reasons. To manage such requests in systematic and consistent way, the Council have produced a protocol which guides their decision-making when such requests are made (see Appendix 3). This forms part of the Plan for managing the Council's trees (2007).

Threats to trees in parks

Parks offer a far kinder environment to trees than streets, and an opportunity to grow much larger tree species such as horse chestnut and oaks without significant hindrance from buildings or thoroughfares. Threats to these trees come from two directions, disease and vandalism.

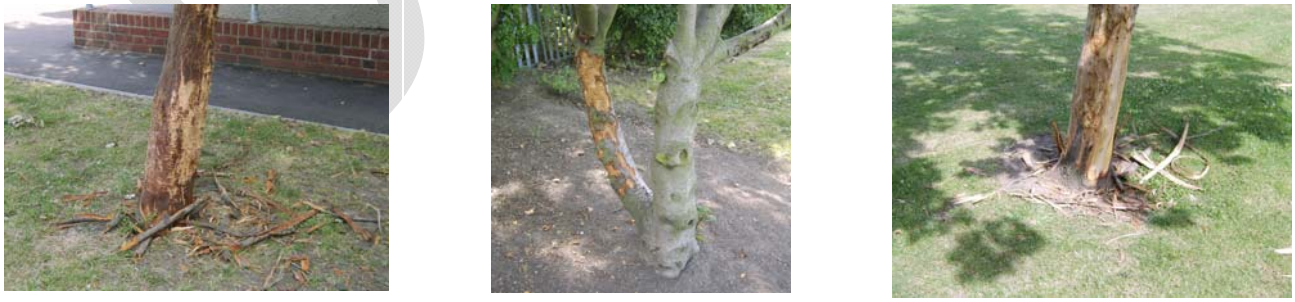
➢ **Tree disease**

Britain's horse chestnut trees are dying in their thousands in parks, gardens and streets in the worst case of tree blight since Dutch elm disease 30 years ago. The disease appears to be having its strongest effect in southern England.

The horse chestnuts have been hit by a "triple whammy" of drought, pest attack and disease. After three winters of drought, they faced simultaneous attack by a pest, the leaf miner moth, whose larvae eats the leaves, and a disease known as bleeding canker. The disease spreads through the tree until limbs fall off, or the tree falls over. Such tree diseases can pose health and safety threats and need to be cut down, which in turn can have a significant impact on council tree budgets.

➢ **Vandalism**

Another threat to trees in Croydon's parks is the practice of encouraging dogs to ring-bark trees, recent examples being Westow Park, Addiscombe Recreation Ground, Duppas Hill Recreation Ground and South Norwood Recreation Ground. Some owners also encourage their dogs to hang from branches, which they grip using their jaws, as a way of strengthening their jaw muscles.



Vandalised tree trunks

By ripping off tree bark, which cannot grow back, the dog is effectively starving the trees to death. Sugars travel down through a layer called the cambium, which is just under the bark. If a dog removes the bark all the way around a tree, its reserves will dwindle and it will eventually die - in a mature tree this can take several years.

Healthy trees in parks can be protected either through the use of tree guards at the time of planting, or through the subsequent addition of chili paste and Hessian by a park ranger. The charity “Trees for Cities” believes that there are dog owners who are unaware of this threat to the tree, which suggests that an information campaign may at least reduce the incidence of ring-barking and make dog owners fully aware that this practice is a criminal offence.

R4: The Council should provide more effective publicity regarding the harm dogs can cause to trees and more robust protection to trees to prevent vandalism.

Playing cricket in Park Hill, central Croydon

Housing development and trees on private land

The Government’s plan to build 2 million new homes before 2016, with stringent targets for local authorities, triggered a redevelopment boom in the borough in recent years. This in turn has raised concerns regarding their impact of these new homes on the environment, traffic and local resources.

In particular, a great deal of development has been taking place in plots which were originally occupied by a house and relatively spacious garden. Garden land being classified as “brown field sites” by the government and are therefore prime sites for housing development.

Private gardens and the trees growing within them are vulnerable to two different trends:
- developers buying houses with spacious gardens, demolishing the property, felling the trees and erecting blocks of flats - a particularly significant trend in Croham, Purley and Waddon wards
- developers buying back gardens and building homes in these spaces, with the largest numbers of completions in 2007 to be found in Purley and Coulsdon West.

A number of developers are known to cut down trees on newly acquired land well before a planning application has been submitted, in order to avoid the application of a Tree Preservation Order or tree-related planning conditions by council officers.

While the large gardens in many southern wards are particularly vulnerable to such a practice, tree cutting by developers and resident dismay is not confined to that part of the borough, as shown in an incident which occurred in Norbury in March 2008: despite a petition signed by 620 residents and 184 letters of protest, a developer had 15 trees cut

down. Police and council officers were powerless to intervene as it took far less time to cut the trees than for them to arrive on the scene.

Resident concerns regarding the effects of development on the tree stock in the borough were echoed in the responses to the Scrutiny survey (see appendix 2), with 9 residents commenting on the threat of new development to trees in the borough, and 6 asking for trees to be planted in areas where new developments were being built. Another 7 felt that ways had to be found to protect trees from local developers.

➢ Statutory and regulatory protection for trees

Overall, the Croydon plan provides limited protection for local trees. Croydon policy (NC4) was amended during the production of the current Croydon Plan (2006), and now requires updating for Croydon's policies to provide adequate protection for trees at a local level. In particular, they should stipulate that any tree which needs to be removed to make way for a new development should be replaced by another elsewhere on the site, or at the very least elsewhere in the neighbourhood. Members were advised that the London Plan (2004) provides additional protection beyond the Croydon Plan, and has been used effectively in Croydon hearings to preserve local trees.

Action required to provide better protection for trees is two-fold:
- to strengthen the policy framework in the Local Development Framework, which is currently being drawn up and would replace the Croydon Plan in approximately 3 years.
- to produce supplementary planning guidance to provide advice on choosing, planting and maintaining trees, as has been done by councils such as the London Borough of Richmond and Dorset County Council.

R5 - In view of the critical role of trees in moderating temperatures, improving air quality and intercepting rainfall and the increasing pressures on the environment arising from high density housing, the Council should include policies relating to the protection of trees in its Development Control Policies suite as part of the Local Development Framework. This is to provide planning officers with a robust framework with which to provide protection for local trees affected by future planning applications.

R6 - The Council should also produce a Supplementary Planning Document (SPD) on trees at the earliest opportunity. It should link in with the Council's Supplementary Planning Guidance 12 (Landscape Design) and Supplementary Planning Document 3 (Designing for Community Safety) and the Council's Nature Conservation Strategy, and take into consideration recent developments in good tree maintenance. It should provide information on:
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- urban design issues

➢ Trees on land subject to a planning application

Trees that fall within a site subject to a planning application are in many cases protected by a planning condition. If the site agent, developer or new occupants wish to prune or fell

trees which are shown as retained and protected by such a condition, they would need to formally apply to the Council for written consent to do what is proposed. Alternatively, section 106 contributions for tree planting may be secured to compensate for a loss or damage to open space; or mitigate a development's impact.

A Tree Preservation Order may be sought for specimens which have particular visual amenity value. In other words, the tree(s) must be in good health and condition, and a good proportion of the tree(s) must be seen from a public view point, i.e. a public right of way, highway, public open space, etc. Trees along the sides and back of such sites may not qualify for such protection from housing development, however, as they may not be visible from the highway.

Building a large number of new housing or other developments on a site is likely to lead to much increased pressures on the environment, through demand for water and energy, increased traffic, and less scope for run-off rain water to be absorbed into the soil, adding to the risks presented by concreted over gardens. As stated in Section 4 (Environmental Issues), it is estimated that 43% of all emissions of oxides of nitrogen in Croydon originate from domestic and commercial gas boilers. In addition, tree planting has been used in the United States to reduce the risk of flooding and the need for costly works to mitigate this risk (see section 4).

New legislation (the Town and Country Planning (General Permitted Development) Amendment No.2 - Regulations SI 2008, No.2260) came into force on 1 October 2008 to restrict the paving over of front gardens, in recognition of the flooding risk this represents. However, back gardens, and the trees within them, remain very vulnerable to development and to its impact on the quality of the local environment, health, and character. Effective measures - including robust enforcement - are needed to counteract the loss of trees and green spaces if the building goes ahead.

➢ **Tree Preservation Orders (TPOs)**

Tree Preservation Orders (TPOs) are made by a local planning authority and prohibit cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of trees covered by such orders. TPOs can be obtained for individual trees, groups of trees, woodland or a specific area.

One of the key problems really lies with trees which are situated in back gardens and are not really visible from the highway. The legislation (Town and Country Planning act 1990) stipulates that TPO'd trees should add beauty (or "visual amenity") to the highway, and does not take the environmental benefits of trees into consideration, wherever they may be situated. Change to take the environmental benefits of trees into consideration would have to be brought about with new legislation.

There do exist two ways a TPO could be obtained for trees in back gardens:

- Someone could request a group TPO for a screen of trees behind a house, which provides an attractive green screen which can be seen from the road and very much contributes to the character of the area as a group of trees
- If a developer threatens to cut down trees in a specific area, an area TPO may be obtained on a temporary basis to protect trees in the area from that imminent risk

If a protected tree is cut down without authorisation and evidence of this is reported to the relevant officers and found to be sufficient, the parties responsible for this action may be taken to task in a variety of different ways:
- The fine for pruning a preserved tree without formal consent is up to £2,500 per offence
- The fine for felling or destroying a preserved tree is up to £20,000 per offence
- If a profit is made from the removal of a preserved tree, an unlimited fine can be imposed after conviction by the Crown Court.

Prosecution of those who flout the legislation in regard to the protection of trees has been successfully brought in the past by Croydon Council. Fines have ranged from £750 for unauthorised pruning to £12,500 for felling protected trees without permission.

The enforcement of Croydon's 1741 TPOs can constitute a challenge in view of the difficulties of working with some of the outdated documents held by the Council and the significant changes to the borough in the last 50 years.

A review of the oldest TPOs has begun following central government guidance indicating that it would like councils to carry out reviews of their TPOs within the next 3-5 years. Area orders in particular - 590 in Croydon - are considered to be in the most urgent need of review.

The Enforcement and Tree Service is also progressing with work to store TPO data in an electronic format so that records can be easily accessed, understood and displayed. This work links in with e-government recommendations and the findings of the "Trees in Towns II" report, which advocates the management of tree records through a computerised system.

Easier access to data on TPOs would enable residents and officers to make more pro-active use of existing information and encourage more to seek protection for attractive trees under threat.

R7 - Records of Tree Preservation Orders (TPOs) should be made available to the public through the Council's website in a user-friendly format. Easier access to this information will help residents to report unauthorised felling or pruning in the borough.

3 - MAINTENANCE ISSUES

Survey results suggest that tree maintenance is a key concern for many residents. 121 respondents commented either about overgrown pruning and its consequences, or about excessive pruning - a matter raised in the GLA's report on trees, "Chainsaw massacre". Another 7 residents wrote to the Scrutiny Support Team echoing these concerns.

In addition, 52 respondents expressed their dissatisfaction regarding the quality of tree maintenance: comments from survey respondents Included complaints regarding poor workmanship, insufficient inspections and monitoring, insufficient watering, and insufficient resources to provide an adequate tree service. Another 45 expressed concerns regarding problems caused by tree roots to buildings and pavements.

Members' and residents' concerns were raised with officers from the Highways, Streetscene and Trees & Woodlands teams. Discussions focused on pruning and protecting street trees during works on the highway.

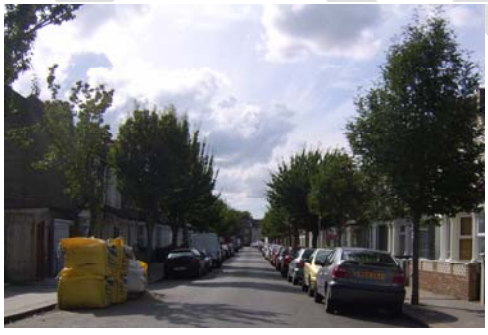
Pruning

The sub-soil structure in the borough falls into two distinct geographical areas. The north area is characterised by clay soils, which shrink or expand according to levels of rainfall. These, in addition to the close proximity of trees to properties, increases the risk of subsidence in this part of the borough. Southern wards are significantly less susceptible to subsidence, with their non-clay soil structures and trees situated further away from properties.

New pruning programmes were introduced in 2007 to provide a pro-active approach to maintenance. A three year rolling maintenance programme was introduced to address the high risk of insurance claims in relation to subsidence in 10 northern wards. Officers from the Tree and Woodlands Section are already noting a decrease in complaints in wards where pruning has been carried out. The fourteen southern wards are less susceptible to subsidence. Their pruning regime is carried out on a five year rolling programme covering every tree in 3 out of 14 wards each year.

In addition, resources are set aside each year to carry out adhoc works on trees which constitute a health and safety risk or require some other urgent attention, and detailed inspection audits are also being carried out to support future risk management strategies.

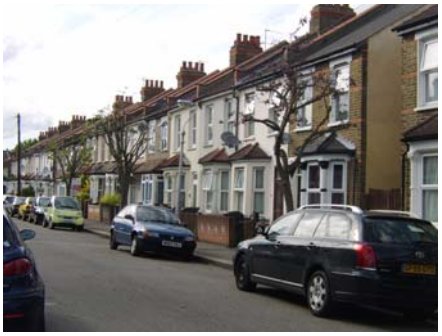
Many residents have expressed concerns regarding the quality of pruning carried out, leaving trees denuded and unsightly, as in the following photo(s) showing street trees pruned in late July 2008.



Summer 2008:

Trees before and

after pruning



This concern is echoed in the GLA's "Chainsaw Massacre" report, which recommends that

"*The London Tree and Woodland Framework and the London Tree Officers' Association should develop and disseminate a best practice template that can be referred to by Borough and their sub-contractors when undertaking tree maintenance, including pollarding*" (recommendation 5).

Protecting street trees during works on the highway

Members were advised that detailed guidance for carrying out works in the vicinity of street trees is covered under National Joint Utilities Group (NJUG) publication NJUG10 "Guidelines for the Planning, Installation and Maintenance of Undertaker Services in Proximity to Trees." It is worth noting these are guidelines and not regulations, and cannot therefore be enforced.

Highways officers explained that the main risk relating to street works is damage to, and drying out of roots within excavations as a result of not complying with the above guidance. As stated above, many trees die years after their roots have been damaged.

Where street works may impact on large trees, utilities are sometimes instructed to take a potentially less damaging route for their works, although this can cause more traffic disruption (e.g. works carried out by telecom company Level 3 on Sanderstead Hill).

The Council employs three inspectors to uphold standards during about 18,000 annual excavations within Croydon, including 12,000 for utilities, of which 10% must be inspected by statute. Croydon can receive payment from utilities for inspections carried out on 10% of excavations, but not for inspections in excess of this statutory percentage, and cannot therefore guarantee that the standards set out in the NJUG10 guidelines are respected during every excavation in the borough. However, additional vigilance from the Council's streetscene officers and provision of photo evidence on breaches of these guidelines could go some way towards providing better protection for trees.

An additional challenge faced by council officers is the limited notice given prior to commencement of works, which limits the possibility for adequate preparation in partnership with the Council. For major works and for works on main roads, Council officers are given one month's notice. For other works on other roads, notice given is frequently less than one day, thus making it very difficult to discuss planned works and arrangements to protect the surrounding environment, or to intervene when this has not been done satisfactorily.

This situation is set to improve a little with the new Traffic Management Act 2004, which came into force in April 2008. Croydon and other partner London boroughs have applied to introduce a permit scheme and this is currently awaiting DfT (Department for Transport) approval. The permit scheme will enable councils to seek more detailed information before issuing permits to utilities, and to co-ordinate works more effectively. Moreover, work will not be allowed to start until a permit is issued, thus giving the Council more control over the works, whereas they can currently proceed without any Council authorisation.

Protecting trees during lawn mowing

Trees can also become vulnerable to disease through poor quality mowing and strimming of areas around tree trunks. This problem applies particularly to maintenance in parks and other large open spaces with trees. When a tree is bumped or scraped by a lawn mower, a large "gang mower" or a strimmer, this can damage or remove bark, and open the way for disease organisms to enter the wound and cause decay.

R8 - The Council should ensure that precautions are taken not to harm trees while lawn-mowing in parks and green spaces.

Tree Replacement

Until the recent change of tree management contract, each step in the process of replacing street trees had been dealt with by a different set of officers:

1. Removal of tree
2. Capping of resulting hole with tarmac to prevent trip hazards
3. Planting of saplings during the dormant season (October to March)

This led to long delays and complaints regarding poor workmanship The change of contracts has enabled officers to demand that removal and planting be carried out by the same officers. This facilitates planning, and has provided officers with more control over the quality of work involved. However, if a tree is removed in spring or summer, officers still have to wait until autumn to plant a replacement to ensure that it settles in well.

Tree Maintenance Standards

The Council's Supplementary Planning Document **12** gives a concise overview of good practice in tree planting and maintenance, which needs to be followed not only by developers, but also by the Council's sub-contractors to ensure that trees get settled in well, and avoid early death with all its ensuing costs. It stipulates that:

- Plants need to be given enough space both above and below ground to establish and perform their intended functions.
- The creation of narrow planting beds that have insufficient soil, food and moisture to support healthy plant growth should be avoided. The recommended size for a planting bed is one square metre
- There should be adequate preparation of the subsoil prior to the top soil being placed. Top soil may be enriched with soil improvers and composted materials

The Trees in Towns (2) report echoes these principles and stresses the need to...

"...Ensure that at least 90% of all the Local Authorities' newly planted trees, excluding woodland plantings, receive systematic post-planting maintenance until the are established"

While the Council must bear responsibility for tree maintenance around the borough, the Council would also benefit from actively engaging with residents to share information about local tree maintenance, and to encourage them to carry out very simple tasks to help street trees thrive such as watering at times of drought. Resident involvement is particularly important during the first three years after planting, when maintenance such as regular watering and keeping tree stakes in position can make all the difference between a thriving specimen and yet another tree death. This is already done by many residents, as shown in the survey findings. It is also encouraged by council officers after a new tree has been planted at a resident's request.

Regular reminders of such good practice to all residents might be beneficial, particularly at the beginning of the summer season. The use of existing networks such as neighbourhood partnerships, residents' associations, voluntary organisations and the local press to draw on local interest, communicate information and encourage greater involvement could help reduce the number of trees dying each year and the costs this entails before a replacement tree is even planted.

Records relating to tree planting and maintenance

The maintenance of trees had previously been hampered by outdated computer systems. The recent change of arboricultural contract has enabled the Council to upgrade its systems. A further development currently being worked on is the addition of a facility to provide ward-based information on tree planting, removal and maintenance to obtain a clearer view of issues within individual wards.

4 - ENVIRONMENTAL ISSUES

Residents' views regarding the environmental significance of trees

The Scrutiny Survey of Trees asked what benefits residents felt trees would bring to their area. While 97 respondents to the Scrutiny tree survey focused on their attractiveness, many others (87) highlighted their beneficial effect on the environment, e.g. their impact on air quality and their absorption of carbon dioxide. In addition, a number of residents' comments regarding the benefits of trees included remarks about their ability to mitigate the effects of traffic and to absorb rainfall, their role as windbreaks, and their significance as a wildlife habitat.

The environmental importance of extensive areas of woodland is appreciated, but what of the role of trees in urban environments?

Pine trees in Coombe Wood

Evidence regarding the environmental benefits of trees

A number of research projects on the impact of trees on the environment shows that their benefits are not confined to natural or semi-natural settings, and can affect several aspects of our environment, including the following:
- air quality, by oxygenating the air and absorbing a range of pollutants
- local temperatures, by providing shade and through "transpiration" (see below)
- absorption of rain water

The results of this research have implications for the choice of species for different sites, and on choice of planting locations to maximise environmental benefits.

Impact on ambient temperatures

Asphalt and concrete in urban areas are known to increase urban temperatures in summer by 3 to 7 degrees C. These temperature increases have a significant effect on the use of air cooling equipment and air conditioning. A properly shaded neighbourhood (mostly from urban street trees) can reduce summer temperatures and the need for air-conditioning considerably. In winter, trees positioned to the north of buildings can shelter them against extreme cold or chilly winds and can again significantly reduce household energy bills**.**

The cooling effect of trees is not limited to providing shade. A study conducted at the University of Manchester (Ennos et al,2007) has calculated that a mere 10% increase in the amount of green space in built-up centres would reduce urban surface temperatures by as much as 4^{o} C. This drop in temperature is brought about by the shade provided by trees, and by the cooling effect of water as it evaporates into the air from leaves and vegetation through a process called "transpiration". The water evaporating from leaves cools the surrounding air in a similar way to perspiration evaporating form our skin. Researchers also painted a bleak picture if 10% of existing trees vanished from the city's parks, streets and gardens through housing development or poor maintenance and estimated that maximum *surface* temperatures could reach 39 degrees centigrade by 2080. In addition, warmer drier summers can reduce the amount of water available to plants and therefore transpiration and its associated cooling effect.

The effect of trees on urban temperatures has also been acknowledged in the Mayor's "London's Urban Heat Island" report. It will be important for London boroughs to select types of trees which can both flourish in an urban setting and help reduce extremes in temperature.

Air pollutants and trees

As stated in the Council's Air Quality Action Plan 2007-2010, the European Environment Agency describes air pollution as "the environmental factor with the greatest impact on health in Europe", and European Commission research suggests that air pollution reduces average life expectancy in the UK by eight months.

Figures from the Greater London Authority's London Atmospheric Emissions Inventory show that around 9,200 tonnes of the main pollutants (oxides of nitrogen, carbon monoxide, particles, sulphur dioxide, benzene and 1,3-butadiene and other non-methane volatile organic compounds) were emitted in Croydon in 2003. 52% of these were produced by road traffic. In addition, over one million tonnes of carbon dioxide are released each year in Croydon, 29% of which come from road transport. As regards emissions from non-road sources, 43% of all emissions of oxides of nitrogen in Croydon originate from domestic and commercial gas boilers.

The Environment Act 1995 requires Local Authorities to periodically review and assess local air quality against prescribed air quality objectives set out within the Government's Air Quality Strategy. Where breaches of air quality objectives are predicted, local councils must declare "Air Quality Management Areas" and produce air quality action plans containing measures aimed at achieving the objectives.

Action already taken by the Council in this regard includes making its fleet compliant with Greater London's Low Emission Zone (LEZ) standards and putting new policies aimed at

reducing air pollution in the Council's revised Unitary Development Plan (the Croydon Plan). However, far less control can be exerted on the emissions of most vehicles circulating in or through the borough. Measures need to be put in place to limit their impact on the environment and on public health, particularly as traffic has been projected to increase by 16% between 2000 and 2010 (Department of Transport estimate).

Croydon's Air Quality Action Plan makes no mention of trees as a tool for cleaning air, despite evidence of their effectiveness in absorbing or capturing a number of different pollutants, such as nitrogen dioxide, particulate matter and volatile organic compounds (VOCS), as shown below.

Nitrogen dioxide

Nitrogen dioxide can impact on health by irritating the lungs and lowering resistance to respiratory infections. It can also lead to the formation of ozone, which can also irritate the airways of the lungs and impair lung function.

The Council's monitoring of current air quality shows that annual average levels of nitrogen dioxide are well above air quality objective levels at roadside monitoring stations. As a result of modelling exercise showing widespread breaches of the nitrogen air quality objectives on busy roads across the borough, the whole of Croydon has been declared an Air Quality Management Area.

- **Can an increase in tree cover make a difference to nitrogen dioxide levels?**

Research conducted in the London boroughs of Wandsworth and Tower Hamlets by O'Gorman and Bann (A Valuation of England**'s** Terrestrial**.** Ecosystem Services - 2008) suggests that an increase in tree cover may significantly reduce the concentration of various pollutants, including nitrogen dioxide, in the air. Using tree cover data, weather data and pollution concentration monitoring data, information was obtained on the annual tonnage of pollutants removed by trees in the above two boroughs.

In the London Borough of Wandsworth, 2.04% of which is covered by trees, 987.73kg per year of nitrogen dioxide were estimated to have been removed from the air. In the London Borough of Tower Hamlets, which has a lower percentage of tree cover (1.27%), the amount captured by trees was 433.69kg.

This piece of research carried out in urban environments which are not dissimilar from Croydon would indicate that making use of trees can have a measurable impact on nitrogen dioxide concentrations in the air in this borough.

Particulate matter

Particulate matter (PM) or fine particles, are tiny particles of solid or liquid suspended in the air. PM_{10} is particulate matter with an aerodynamic diameter of less than 10μm (micrometres), and which is small enough to settle in the bronchi and lungs and cause respiratory problems.. Particles smaller than 2.5 micrometres, $PM_{2.5}$, tend to penetrate into the gas-exchange regions of the lung, and very small particles (< 100 nanometers) may pass through the lungs to affect other organs. In particular, a study published in the *Journal of the American Medical Association* indicates that $PM_{2.5}$ leads to high plaque

deposits in arteries, causing vascular inflammation and atherosclerosis, which can lead to heart attacks and other cardiovascular problems.

The most significant source of such matter in many urban areas comes from the exhaust fumes of road traffic (Watkins 1991).

The Government has set a ceiling for PM_{10} concentrations in the air, which should not to be exceeded more than 35 times a year. The Council's Air Quality Action Plan acknowledges the importance of reducing particulate matter, and provides estimates of the likely impact of proposed measures affecting vehicles, homes, construction, etc. on emissions of nitrogen dioxide as well as particulate matter (PM_{10} specifically).

➢ **Can trees help reduce the concentration of particulate matter in the air?**

Results of the above-mentioned study by O'Gorman and Bann for Defra (A valuation of England's Terrestrial Ecosystem Services - June 2008) showed that of all the main pollutants in the atmosphere of Greater London, the greatest benefit brought about by trees arises from the removal of PM_{10}. This has the greatest potential for pollutant removal as well as the highest associated damage costs per tonne. Current tree cover is estimated to remove **1541.8 kg** from the air in Wandsworth, with estimated annual healthcare savings of between £53,585 and £77,771. In Tower Hamlets, existing tree cover removes **496.08kg** of PM10 from the air, with estimate healthcare savings of between £17,240 and £25,022.

Researches estimated that the benefit per tree is higher in Wandsworth than in Tower Hamlets due to the greater percentage of evergreen trees in the former borough (further evidence.

Another study conducted by the Department of Environmental Science at Lancaster University (Hewitt et al, 2005) estimated that doubling number of trees in West Midlands could reduce excess deaths due to particulate matter in air by up to 140 deaths per year.

A further study by Beckett, Preer-Smith and Taylor (1998) provides evidence on differences in particulate capturing ability between various species of trees appropriate for urban planting schemes. Measurements were carried out near a major road into Brighton, and in an area situated among pasture on outskirts of Brighton on the South Downs, and focused on differences between whitebeam, field maple, hybrid poplar (good for fast biomass production), Corsican Pine and Leyland cypress (20% of all urban tree species in England are cypresses).

Results show that there are clear differences between species in the amount of particulate matter caught:
- Corsican pine was the most efficient particulate filter and Leyland cypress was ranked second. Evergreens have the added advantage of retaining foliage during the winter, when particulate concentrations are often at their highest.
- Among broad-leaved species, whitebeam produced a high value for coarse particulate capture possibly due to the species' rough and hairy underside leaf surfaces.
- Poplar was the least efficient particle capturing species - this may be due to its smooth leaf surface which allows particulate matter to flow over it without being trapped.

These results echo the findings of the study conducted by O'Gorman and Bann in Wandsworth and Tower Hamlets (see previous page), where researchers attributed the

significant differences between the two boroughs to the larger number of evergreen trees in the London Borough of Wandsworth.

The challenge for council tree officers in applying such findings would be to select appropriate evergreens for suitable sites to ensure that they thrive, have the desired effect on air quality, and fit in with the character of the area.

The study conducted by Beckett, Preer-Smith and Taylor made useful findings regarding the location of the trees which captured the highest concentrations of pollutants: substantially more particulate material was captured by trees at Withdean Park, near a busy road, than at the Sussex field site. Due to their large size and weight, coarse particles settle on surfaces much closer to their sources than do finer particles. This suggests that busy roads would benefit from being lined with trees, to capture the pollutants emitted by cars.

The main process by which trees capture particles is through a turbulent air stream (Becket et al 1998), and the structure of many urban environments provide such conditions (Croxford et all, 1996): the turbulent eddy currents created by the interface between urban features such as roads and buildings provide an environment where capture efficiency is likely to be maximised.

In addition, findings from the University of Lancaster (Hewitt et all, 2005) show that trees on the edge of a copse are more effective at capturing airborne particles than those in the centre, because they have larger leaf areas and are more exposed to the wind.

These considerations have important implications for the positioning of urban trees for effective particle interception.

A mention needs to be made of green spaces such as parks, some of which may consist mainly of grassed areas. These too play a role in capturing airborne particulates. However, the above-mentioned research conducted at Lancaster University has estimated that woodland does so three times more efficiently than grassed areas.

Volatile organic compounds

Trees can emit gases such as isoprene and terpenes, which are known as volatile organic compounds (VOCs), although such compounds are also emitted by a wide variety of other sources e.g. wetlands, landfills, paint thinners, dry cleaning solvents, some constituents of petroleum fuels, etc. VOCs, in combination with the man-made oxides of nitrogen (NOx), can contribute to the production of other pollutants, especially ozone and particles, which damage human health when in the lower atmosphere.

Any tree planting in an urban environment would need to keep VOCs emissions to a minimum while maximising the environmental benefits of the varieties chosen.

➢ **Choosing trees with low VOCS emissions**

The research carried out at the University of Lancaster shows that trees that do not emit the most reactive VOCs but do have large leaf surface areas, have the best effect on air quality. Scots pine, common alder, larch, Norway maple, field maple, ash and silver birch remove the most pollutants without contributing to the formation of new pollutants.

Tree	Isoprene emissions μg (dry weight)
Ash	0
Birch	0.05
Lime	5.5
Plane	20
White Willow	37.2
Oak	38.45

Estimated isoprene emission of 6 common British trees

Oaks, poplars and willows can have *detrimental* effects on air quality downwind, so care needs to be taken when planting these species in very large numbers. The VOCs produced by trees, particularly the isoprene emitted by deciduous trees, which shed their leaves

annually, have also been shown to increase levels of ground-level ozone in an urban area. This is not the case for evergreen trees.

Researchers are at pains to point out that this does mean that trees such as oaks should be cut down, as they have a positive effect on air temperatures and carbon dioxide take-up. They need to be planted in appropriate locations to maximise their positive impact.

Carbon dioxide capture

Under the Kyoto Protocol, which was adopted in 1997, the capture of the greenhouse gas carbon dioxide through tree planting is an accepted method for controlling greenhouse emissions. The use of trees to reduce greenhouse gas emissions could help Croydon Council to meet challenging LAA targets such as 9.5% carbon emissions reduction across the borough. However, particular care needs to be taken in urban environments to balance this advantage against the high emission of VOCs in some tree species.

The carbon sequestration *rate* of different tree species is directly linked to their growth rate, while the *amount* correlates with their size. Through photosynthesis, the trees absorb carbon dioxide-laden air and emit oxygen. Young trees in their rapid growth years have a high rate of photosynthesis and thus produce more oxygen than older trees. Research carried out at Lancaster University shows that by far the most efficient species at storing carbon is the English oak, because these trees are so big. However, it is a slow-growing tree so it takes longer to accumulate its carbon than other with a high carbon sequestration rate.

English name	Stored carbon (kilotons)	% of total carbon stored
English oak	180	36.7
Austrian pine	35	7.1
Ash	27	5.5
Common lime	26	5.2
Silver birch	25	5.1
Sessile oak	22	4.4
Horse chestnut	15	3.0

Estimate of carbon stored in 7 different species of tree in the UK

Absorption of rain water by trees

The usefulness of trees in capturing rain water is gaining in significance as the UK has seen periods of considerable rainfall and serious flooding in the last few months and years.

This risk has been compounded by the recent trend in covering gardens with non porous or hard surfacing. The government has recognised the dangers this practice represents, and new planning legislation has been introduced with effect from 1 October 2008 requiring anyone wishing to cover more than 5 square metres of their front garden with a non-permeable surface to obtain planning permission or use alternatives that allow rainwater to be absorbed into the soil.

The recent trend in building new homes in areas previously occupied by gardens will also reduce the area's ability to absorb water during times of heavy rain. At planning application stage, developers usually have to comply with planning conditions stipulating that remaining trees be protected and that appropriate landscaping should be provided. However, the trend in developing high density housing means that some heavily built-up areas will become more vulnerable to flooding as the proportion of land allocated to trees and green spaces steadily decreases.

Research has shown that trees can play a significant role in absorbing rainfall water and preventing flooding. This is particularly effective when trees are surrounded by soil rather than concrete, thus preventing run-off from both roots and leaves. An example of this is Heavers Meadow in Selhurst, where willows, which thrive in the proximity of water, enhance the ability of this water meadow to absorb particularly heavy rainfall carried in Norbury Brook, which runs alongside the meadow.

An urban environment is far less able to absorb rain water, partly as planting beds on streets tend to be too small to absorb significant amounts of water. However, trees in such an environment can still reduce the risk of flooding because a significant amounts of water remain on leaves and branches and evaporates from these surfaces before it can reach the ground.

The rate of "Rainfall Interception" (R.I.) by a tree canopy is dependent on the type of tree, and the amount of leaves on it. Studies have shown that mature deciduous trees can intercept 500-700 gallons of water per year. Mature evergreen trees eg pines, which retain their leaves in winter, can intercept more than 4,000 gallons per year. R.I. will also vary according to tree density: Individually planted trees are not as effective at intercepting rainfall as a row of trees, as can be seen on a pavement when walking on a rainy day.

By intercepting rainfall, tree cover can reduce the cost of managing rainwater and flooding. In Santa Monica, California, rainfall interception was measured for 29,229 street and park trees. Researchers found that reduced runoff provided estimated savings of $110,890 ($3.80 per tree) on storm water treatment and flood control. Urban forest cover in Dayton, Ohio, was found to reduce runoff by 7% (Sanders, 1986).

Trees as windbreaks

A considerable amount of research has been conducted, notably in Australia and the United States proving the usefulness of trees as wind breaks in farming, reducing the

destructive effect of winds, wind chill and the spread of noxious odours and germs from animal farming.

In urban environments, there is some suggestion that planting trees on roads lined with tall buildings can act as a windbreak and disrupt the wind tunnel effect created by the buildings, but this is difficult to quantify (Scudo, 2002).

Other environmental benefits

Trees can significantly contribute to brownfield remediation as their woody biomass can absorb and attenuate many contaminants through a process known as “phytoremediation” (Hinchman et all (1998).

Trees create more pleasant walking environments in an urban setting, bringing about **increased walking** and thus reducing residents’ reliance on cars. This can have the double advantage of reducing pollution and increasing opportunities for gentle physical exercise. Because tree planting can encourage walking, it has been shown that it can significantly increase footfall and business vitality in district and town centres and help these areas compete with large out of town commercial centres.

Responses to the Scrutiny survey have also shown that many residents felt trees had a beneficial effect on **mental wellbeing**: 6 stated that it would improve the “feel” of the area and 13 felt that more trees would have a calming effect or improve people’s mood.

A paper written by Kelly M. J. Farley and Jennifer A. Veitch (‘A Room with a view: a review of the effects of windows on work and well-being’ - August 2001) shows that people prefer natural rather than built or urban views from windows, as they are felt to enhance work and well-being in a number of ways. They have also been found to shorten the recovery time of surgical patients and decrease their need for medication.

As echoed in a large number of comments by survey respondents, trees soften urban landscapes and screen street furniture, creating a more attractive environment. A study by Kaplan (1993) documents the increased productivity and job satisfaction experienced by employees who work in offices with views of nature and green spaces.

These effects bring economic benefits to properties located near trees, with a well documented correlation between trees and real estate values. A study by Anderson et al (1988) found that a large tree in the front garden increased the value of a £122K home by £1K (approximately 1% - 2007 prices). Office buildings with green landscaping can draw 7% higher rents than those without (Lawrence and Winson-Geiderman, 2003)

Conclusion

While we need to acknowledge the need to provide housing to a growing population, and the need for people to travel, planners need to balance these needs against that of providing residents with a healthy, attractive and sustainable environment, and ensure that the means to sustain such an environment, including the provision of a well chosen and maintained urban tree forest, is not neglected.

R9 - The Council should recognize the contribution trees make to the environment and include a reference in the following Council strategies and action plans:
- Carbon Management Action Plan
- Air Quality Action Plan
- Climate Change Strategy
- The Council's Core Strategy
- Area Action Plan for Croydon Metropolitan Centre

New houses, no trees

5 - FUNDING AND OTHER RESOURCES

As stated earlier, the 2007 GLA review of trees, "Chainsaw Massacre - A review of London's street trees", notes that "tree maintenance is not something measured by the Audit Commission when it arrives at its star rating for a council's overall performance". For many years and in many boroughs, funding for tree planting and maintenance has been very low as this service has not constituted a high local priority and its various benefits have not been well understood by the community or its leaders. In addition, maintenance budgets can be severely stretched by damage caused by storms and disease, both of which appear to be on the increase.

The consequences of inadequate funding can include poor quality maintenance, less planting, inadequate engagement with communities and poor auditing of sub-contractors.

These needs were acknowledged in the above mentioned GLA report, which recommended that :

- London boroughs should allocate more funding for tree planting and maintenance. They should establish action plans to plant more trees and monitor annual targets to prevent any loss of street trees.

- The London Tree and Woodland Framework and London Tree Officers Association should ensure that best practice in obtaining match funding and sponsorship is shared with boroughs and other organisations across London, including securing maintenance funding through section 106 planning agreements on new developments.

Current budgets

In Croydon, however, there have been some significant changes to resources dedicated to trees, as shown in the following table.

Year	Highways £'000	Parks/Woodlands £'000	Housing £'000	Cemeteries £'000
2005/06	107	73	70	No direct budget for this work
2006/7	307	123	70	0
2007/8	397	123	70	0
2008/9	400	123	78	0

Table 1: Budgets for tree planting and maintenance 2005-2009

The budget for trees on the highway (2008-2009) is divided up as follows:
- £150,000 on programmed works in the south of the borough
- £150,000 on programmed works in the north of the borough
- £30,000 for tree removal

- £30,000 for emergency maintenance
- £30,000 for adhoc works
- £10,000 for tree planting

Some additional funding for planting highways trees is obtained from Transport for London.

The parks and woodland budget is divided up as follows:
- £73,000 is earmarked for maintenance in parks
- £50,000 is allocated to health and safety works in woodlands

In addition, £20,000 worth of grants are obtained for other work in woodland including maintenance to improve their ecological environment.

Trees in cemeteries contain mature trees but have no dedicated budget, and maintenance is limited to reactive work where the health and safety of visitors may be at risk.

As shown in the table above, resources have been allocated since 2006 to setting up and running programmed pruning regimes. This has been of particular importance in the north of the borough, where such maintenance has significantly reduced the number of insurance claims for subsidence that the Council has been liable for.

The budget for tree planting allows for some 300 highway trees to be planted every year. However, this does not match the average annual loss of 500 trees. If new tree pits are dug, work may also entail diverting utilities, with costs running to thousands of pounds. A co-ordinated budgetary and maintenance approach is required to reduce the number of tree deaths significantly and plant trees to make up for losses over the last few years.

R10 - The Council should look to increase current funding levels to make up the current shortfall in street trees and to improve tree planting practice (eg selection of

larger specimens and installation of irrigation tubes) and maintenance within the borough.

Budgets linked to air quality, carbon neutrality and climate change

As shown in the previous section, trees can bring about significant improvements to urban temperatures, air quality and carbon dioxide emissions, and may thus have an important role to play in preventing global warming. These benefits should be acknowledged and harnessed in the Council's Air Quality Action Plan, Carbon Management Plan, Environment and Climate Change Strategy, and relevant Local Area Agreement targets. Funding allocated to implement these strategies and objectives could be used to plant trees in or near areas with significant threats to air quality.

Funding is regularly made available to councils to encourage walking. As discussed in section 4 above, an effective way of increasing this activity is to make the local environment more attractive and comfortable to walk in by planting rows of trees. Maintenance costs will also need to be factored into such initiatives.

R11 - That the Council should seek to improve funding to improve carbon neutrality, air quality and climate change and use this to plant appropriate tree species in suitable locations to attain the objectives of the above strategies.

Section 106 contributions

If a proposed development is deemed to cause harm to trees on, or in the vicinity of the site concerned, and 'results in the loss of outdoor sport, leisure and recreational facilities to other uses' (Policy RO15 of the Croydon Plan) and the development is considered to be 'within an area of local park deficiency' (Planning Guidance Note No. 1), developers are in many cases asked to make section 106 contributions to mitigate that impact through landscaping and tree planting. In the case of a development replacing a detached house and its garden with a block of flats, section 106 contributions are often agreed when the new development involves 10 units or more, and may involve some tree planting. In smaller developments, the developer will usually be required to protect existing trees and provide a landscaping scheme.

Discussions with officers has revealed that while monies are being used to enhance such facilities as parks and playgrounds to cater for new residents in the case of relatively large developments, very limited section 106 funding (less than £2000 borough-wide) has been used in the last year for tree planting schemes to compensate for the loss of trees and green spaces to new housing. As in the case of many other planting schemes, funds are not made available for long-term maintenance, which can consequently be neglected. In addition, in view of limited staffing resources, limited checks are made to ensure that the planting has been delivered on site to satisfactory standards as part of planning applications.

R12 - The Council should improve the enforcement of agreements made with developers to plant trees as part of a new development.

Croydon's Planning Guidance Note No. 1 sets out the criteria set by the Council for seeking Section 106 contributions. While these can be sought to mitigate the impact of a development on surrounding 'open spaces' or to provide 'landscape / public realm improvements', no provision is made for contributions to address the increased risk of flooding due to the reduced amount of green spaces and trees in the area, or to deal with the pressures on air quality resulting from increased energy demands and road traffic - despite the existence of a criterion on air quality in the Planning Guidance Note.

Community Infrastructure Levy

Following the Planning Act 2008, which provides the necessary legislative foundation, the government will be introducing this levy, to be obtained from developers, to secure adequate funding for infrastructure required in the vicinity of new developments. While preparations are still at a very early stage, this review provides an opportunity to highlight this new initiative which will be used alongside Section 106 contributions (the purpose of which is to mitigate the harmful impact of a development), and can be used to provide green spaces in the vicinity of new developments.

Funding from the Mayor of London

The Mayor of London has committed approximately £4 million to plant trees in the capital's most deprived areas. The Council is eligible for such funding and is due to receive this funding in its second tranche, in February 2009.

External Funding

A wide range of organisations make tree planting grants available for community groups, including the Woodland Trust, the Tree Council, English Nature, the National Lottery, etc. although very few will fund the increase in maintenance costs that such projects entail in subsequent years. Such grants are usually relatively small (between £1,000 and £5000), and can bring improvement to relatively small areas. Friends' groups in Croydon, which care for various green spaces on a voluntary basis, are dependent on external funding and regularly bid for funding to support their maintenance work. Awareness of such grants in the wider community is far lower, however.

The borough would benefit from a wider use of such grants, and from wider publicity on the opportunities they present. However, because of limited budgets and eligibility criteria that frequently do not permit councils to put forward bids, such funding cannot make a significant contribution to replacing Croydon's lost street trees.

R13 - The Council should publicise grants for tree planting which are available to local volunteer or residents' groups but not to the Council, through its newsletters, its website, and e-mail to local volunteer or residents' groups where appropriate.

The sponsorship of trees also provide residents with an opportunity to improve their environment. Some councils, such as the London Boroughs of Havering, Hounslow and Haringey have formal procedures giving the opportunity for residents to sponsor trees. Others, such as Croydon, make this type of arrangement available to residents (as can be seen in the borough's parks), but do not have a formal procedure for this work, or any publicity on how to sponsor a tree . Consultation with London boroughs in the course of this review revealed that the average number of trees sponsored per year averages around 20.

R14: The Council should publicise tree sponsorship opportunities more widely and make information and application forms available on its website

In their efforts to explore opportunities for increased funding during this Scrutiny review, Members met with a local company which had expressed interest in sponsoring tree planting in the borough but had not found voluntary environmental organisations to work with, which carry out tree planting in this borough. Some progress has taken place since the initial meeting, and it is expected that a framework will be agreed enabling the Council, the company and Croydon's environment to gain from this arrangement .

Resources in kind

Resources for planting and maintaining trees in Croydon are not only limited to funding. Volunteer networks, such as the borough's 19 Friends' groups (each of which focuses on caring for specific green spaces in Croydon) and the British Trust of Conservation Volunteers (BTCV) carry out extensive work in Croydon's woodlands and other green spaces, such as control of invasive species, collecting seeds, planting trees, coppicing, removing scrub, keeping paths open, clearing litter, monitoring wildlife and leading public walks and giving talks to schools and other groups. If paid, this work would represent a considerable expense running to thousands of pounds.

Volunteer work includes support and training from organisations such as BTCV to various networks in Croydon including Friends' groups. BTCV also run the Sustainable Woodland project, which maintains a tree nursery on Park Hill allotments, producing trees and shrubs from locally collected seeds.

A volunteer pruning willows in Heavers Meadow (Selhurst) in December 2007

Capital Asset Valuation of Amenity Trees (CAVAT)

Discussion has thus far focused on finding resources to cover the **cost** of maintaining trees. What has long been neglected is the **value** of the borough's urban forest, although this is specifically alluded to in the Town and Country Planning Act 1990 (section 198) .

The system of Capital Asset Valuation of Amenity Trees (CAVAT) has been specifically designed for use in Greater London to take account of the value of trees as public assets, not liabilities, and to aid decision-makers to plan, prioritise and manage the maintenance of the "urban forest". This tree valuation system has also helped council officers to assess how to respond to insurance companies' requests for local trees to be cut down, in line with the estimated value of the trees concerned.

The valuation takes into account the size of each tree, its condition, longevity and specific benefits and drawbacks. Ideally, it is best implemented in conjunction with regular surveys of the asset value of a borough's tree stock.

The Council has been trialling this valuation system for one year, and found its framework a useful way of analysing and justifying the value of a tree and action to protect it. The Council's officers estimate that Croydon's tree stock has a value of approximately £250 million.

To summarise

It needs to be acknowledged that budgets for tree planting and maintenance have improved significantly in the last few years in Croydon. However, the allocation of resources for this service need to take into account factors such as the functions that trees play in improving air quality and public health, as well as the attractiveness of the area and its impact on economic vitality. Hopefully, this can be better quantified through the CAVAT process, and budgeted for accordingly. In addition, efforts need to be made to improve maintenance and reduce tree deaths from the current average of 500 per year, if only to reduce the heavy costs of removing and replacing a tree .

6 - COMMUNITY INVOLVEMENT

Interest and involvement

Responses to the scrutiny survey and interest expressed by residents in finding out about its results have shown that a good section of the public value trees in their neighbourhood and the benefits they bring. Additional evidence is provided by residents' action when developers threaten to cut down trees in their area both in the north and the south of the borough (see section 1) .

Survey results and discussions with officers and residents has shown that local people get involved in caring for trees in a variety of ways:

- management of local woods through Friends' groups (there are currently 19 of these)
- tree planting and maintenance with various organisations such as BTCV
- tree planting and maintenance in their own gardens
- watering street trees at times of drought (a fairly common practice)
- reporting problems relating to trees to the council
- making donations for tree planting

The Trees and Woodlands Manager has also noted that street trees planted at a resident's request seem to have a better chance of survival than trees planted at a location selected by the council, suggesting that the former are looked after during the vulnerable first year after planting.

Levels of involvement in caring for trees vary, however. Very few of the 67 respondents stating an interest in getting involved in future responded positively to e-mails providing them with future opportunities to care for trees in Croydon.

Street champions consulted as part of this Scrutiny review expressed interest and concern for the welfare of trees in their local neighbourhood, although other streetscene issues such as litter, fly-tipping and graffiti appeared to be more serious and thus higher priorities for them to deal with.

Residents who do not have an interest in trees, or consider that their disadvantages (e.g. leaf and fruit fall) outweigh their advantages have been few to raise their concerns in the course of this review. 23 respondents to the survey felt that there were too many trees in their area, 5 stated there were too many in their street and 2 said there were too many in parks. It is difficult to estimate their true numbers as their lack of interest may have been an obstacle to their involvement in the survey. It is also difficult to ascertain how their lack of interest may or may not impact on the condition of trees in their local neighbourhood.

Encouraging wider resident involvement

Council officers provide support and information to local residents in a variety of ways, including the following:

- attendance at neighbourhood partnership meetings to provide information to residents
- attendance at neighbourhood partnership Chairs' meetings to address issues relating to trees in a strategic way
- liaising with local residents' associations and suggesting contributions to their newsletters

Such contacts provide valuable support to residents with an existing interest in trees. The next step for the Council is to educate the wider community on the benefits of trees to their local environment and on how to provide simple care and protection for them.

R15 - Council officers should raise public awareness of issues relating to local trees throughout the borough and to encourage increasing numbers of residents to provide simple care to trees in their locality eg watering to young saplings and during droughts.

A number of "tree warden schemes" are run in various parts of the country to provide on-going care to local trees by local volunteers. One such scheme existed in Croydon some years ago but is no longer in operation. The Tree Council operates warden schemes, but the £250 starting fee may deter many people, especially if they have some doubts about the long-term success of such an initiative. Attempts have been made by council officers to get local residents' associations involved in caring for local trees, with a very disappointing response.

This is not to say that some form of tree warden scheme could not work in future, particularly in view of the interest aroused by this review.

For such a project to be successful, potential participants need to feel that their participation will make a visible difference, be easy and not too time-consuming, and need to gain a tangible appreciation of the simple steps they can take to bring about significant improvements in tree health after a tree has been planted in optimum conditions.

Neighbourhood Partnership, Street Champion and Residents' Association meetings might be used to present such schemes informally and discuss what they entail. The same networks might also be used to provide feedback to a wider range of residents on how the

schemes are working. For participants to have a clear understanding of the activities involved, they would require training, some at the beginning and more at later stages, and access to advice from a tree officer, as do all residents in the borough.

Such work does not require resource-intensive launch events, particularly before they have actually starting operating effectively, although the success of any such schemes may lead to celebratory events at a later stage. Once such schemes have been set up, further information can also be provided through council publications, such as "Your Croydon", which is already used by officers to disseminate general information and advice to local residents.

While the basic objectives of a tree warden scheme should be kept very simple in order to be sustainable, future benefits arising from such co-operation between the council and the community may include:

- a better understanding among a growing number of residents of the benefits of trees, problems facing them and possible solutions to apply
- a better decision-making framework for the borough
- improved dissemination of information regarding useful organisations (e.g. the Tree Council, British Trust of Conservation Volunteers, the London Wildlife Trust, etc.)
- increased local interest in obtaining external grant funding for small local planting schemes, and a good network for the Council to disseminate grant information to
- the possibility for residents to contribute to activities such as surveying to build up shared knowledge about Croydon's urban forest.

R16 - The Council should set up a network of individuals or groups with a particular role in caring for trees, and provide them with information and advice on how best to care for trees in their neighbourhoods. Such networks can involve existing residents' associations, street champions, or residents who are currently not attached to any particular local network.

As regards tree planting, local communities can get involved in a variety of other projects, using external funding available from a wide range of organisations such as the Tree Council or the National Lottery, such projects may be carried out in housing estates, schools, etc.

For such schemes to be successful, the people involved need to take into consideration the short-term and long-term needs of tree maintenance in order for such schemes to continue to be easy-care and valued by residents in the long-term. There also needs to be communication between the residents involved, the voluntary organisations providing funding and advice, and council maintenance officers or contractors, so that trees are planted in appropriate places and can be easily maintained in the long-term.

Major studies and strategies, such as the GLA's "Chainsaw massacre" review, the Mayor's Tree and Woodland Framework for London, and the Trees in Towns study carried out for the Department for Communities and Local Government all advocate greater public involvement in tree planting and maintenance.

The key to success is to set up simple schemes, which fulfil simple tasks (e.g. watering), include effective community channels including existing consultation channels, and do not place an onerous or complicated burden on either officers or residents.

Member Involvement

Member receive regular reports and complains from residents regarding issues relating to trees. This highlighted the need for a review on the subject. Some Members also have informal contacts with relevant officers to deal with such queries. However, they have identified a need to have a more systematic overview of on-going issues within their wards and a greater understanding of issues relating to trees in order to underpin their decision-making and involvement in improving the environment both in their ward and in the borough as a whole.

R17 - Council Members should be offered training regarding trees, their planting and maintenance, and the opportunities and challenges they present, particularly for the environment.

R18 - Council Members should be advised seven days in advance of trees to be cut down in their ward.

7 - CONCLUSIONS

Resident responses to the survey conducted, and their interest in the findings of this review show that local trees are a **valued element** of the local environment. Moreover, a number of research projects have demonstrated the environmental and health benefits of trees, as they capture significant amounts of pollutants and rain water, and help reduce temperature extremes in urban environments.

The **loss of trees** in the borough has been most significant on its streets and in areas where private gardens have given way to housing. Such areas may be where the Council may need to increase tree planting (by replacing lost trees and using planning policy and regulations) to mitigate the environmental impact of a dense population and make such built-up areas more visually attractive.

Yet the Council's **planning policy currently provides limited protection** for trees, and officers need to have recourse to the London Plan to take measures to protect trees in the face of housing development. The Council does not have any supplementary planning guidance relating to trees and their protection. Current work on preparing the borough's Local Development Framework presents an opportunity to improve the situation with part 1 policies and guidance documents for developers. This protection is increasingly necessary to safeguard the environment and public health as ever more pressures are exerted on the environment through housing development and increasing traffic.

Tree Preservation Orders are an important tool available to officers, residents and local councillors. It needs to be updated and made easily available in a user-friendly electronic format in order for all relevant parties to make better use of TPOs.

Strategic documents such as the Council's Air Quality Action Plan should acknowledge and make the most of the role trees can play in capturing pollutants in an urban environment. Likewise, tree planting can be used to address the Council's Local Area Agreement priority of 'tackling climate change by reducing CO_2 emissions'.

Tree budgets have increased significantly in the last two years, leading to much improved maintenance regimes. However, existing funding still cannot fully make up the loss of approximately 500 trees per year, and the fierce pruning needed to maintain trees on a 3 or 5 year cycle leaves them denuded, stressed and more prone to disease. It is to be hoped that the CAVAT system of assessing the value of trees will help the Council plan budgets to manage this valuable and useful local resource.

Funding for tree planting could be improved by using some or all of the following approaches:
- using budgets earmarked for improvements in air quality, flood prevention, and for promoting walking
- encouraging a greater use of tree sponsorship and external funding by the community while accepting that this alone cannot make up for the shortfall in trees

However, it has to be acknowledged that **external funding can be time-consuming** to obtain, and its criteria can limit the options available to the bidder. Such funding has a place in the voluntary sector, and provides participants with useful skills, but can be a burden on the resources of a busy council team and limit its flexibility.

Finding ways of providing **better maintenance in partnership with local residents** where appropriate can also help prevent disease and death, and the costs associated with tree removal and replacement.

As the community appear to place a great value on local trees and on this very review, the council may capitalise on this interest and start **a dialogue** with streetscene champions and other groups, by providing information on simple tree care and ascertaining local interest in some form of tree warden scheme. Such a scheme would need to focus on basic tree care and simple administration support and be easy to run. Such a dialogue may also help the council set future priorities for this service that reflect local residents' interests.

Finally, if more resources are made available for tree planting, relevant officers will have the task of **choosing the appropriate species** and locations for tree planting. While cherry blossom and plum trees are attractive and popular choices and appropriate for

narrow pavements in residential streets, other, sometimes conflicting priorities may need to be taken into consideration, such as
- the needs of the species itself and the best location for it to flourish
- the hardiness of the species and its tolerance of pollution and poor soils - London planes being particularly good in this respect
- the need to adapt to ever more extreme weather patterns
- the proximity of housing, the risk of subsidence and need for visibility
- the environmental benefits of the specimens in question, particularly evergreens, eg their ability to capture pollutants and rain water
- the *location and configuration* which would enable them to have the best possible impact on the environment
- the need to preserve native species and wildlife habitats, and to maintain a reasonably wide range of species in order to maintain biodiversity and resilience to tree viruses and parasites.
- the maintenance needs of the specimen, and its fruit and sap fall
- the longevity of the species and the future cost of maintenance

Our local trees require maintenance to thrive and give pleasure, but represent a loss to the community and serious environmental risks if neglected and lost.

SCRUTINY REVIEW OF TREES
DRAFT TERMS OF REFERENCE

1 - KEY ELEMENTS TO INVESTIGATE

A - Tree Loss And Replacement
- number of trees lost per year
- Reasons why trees are lost
- Reasons why trees are not replaced
- How tree planting sites are prioritised and criteria
- Choice of tree species and criteria including suitability for different terrains and different climactic conditions (and extremes) , and as wildlife habitats
- How tree planting regimes can help mitigate the risk of flooding in future
- Area-based issues (e.g. urban north with fewer trees versus leafy south)
- List of roads where trees are to be trimmed
- Are residents consulted/informed when a tree is taken down?

B - Problems Relating To Trees
- Damage from trees to properties and cars. Scale of damage and financial implication?
- Overgrown trees blocking natural light to properties. Do we respond to residents' requests for minor pruning?
- Overgrown trees blocking street lights. How is this monitored?
- New tree growth can reduce visibility for tourists. How serious a road safety problem is this? Do we take measures to avoid these accidents?

C - Budgets
- internal and external funding
- Sponsorship
- Council's priorities

D - Planting Opportunities
- New building developments
- whole planting process including preparation of site
- detection of utilities underground
- impact of cars
- potential economies of scale with large-scale planting schemes?
- Future budget implications of increasing tree stock in the borough (maintenance, pruning, street sweeping of leaves) - Are these factored into budgets?
- Impact on risk controls (theoretically, there could be more claims against the Council for injuries sustained by people slipping on leaves, for example)

E - Maintenance

- pruning standards and processes - consistency within these
- Pruning amongst parked cars
- Legal position regarding claims re falls on slippery leaves and fruit
- Dealing with anti-social behaviour and criminal damage to trees

- Leaf-fall in autumn: What processes are in place? How quickly do we clear leaves? What is the residents' role in this?

F - Involvement of Residents

- Educating residents on benefits of trees
- Maintenance
- Planting /funding planting

2 - PEOPLE TO INVOLVE IN THE REVIEW

- Tree officer Nigel Browning
- Contractors
- Planning officers
- GLA
- Birmingham officers involved in tree review
- Funding organisations
- Environment Agency
- Conservation Groups e.g. Woodland Trust
- BTCV (British Trust of Conservation Volunteers)
- Schools
- Faith groups
- Residents
- Residents' Associations
- Allotment societies/members

"TELL US YOUR VIEWS ABOUT THE TREES IN YOUR NEIGHBOURHOOD!"

SURVEY CONDUCTED IN CONNECTION WITH THE SCRUTINY REVIEW OF TREES
FINAL REPORT OF SURVEY RESULTS

1 - The Aims Of The Survey

The review working group agreed that a public survey should be undertaken as part of this review to gain a spectrum of public views on trees in the borough.

Through the survey, Members aimed to find out :

- what was the level of interest in trees among local residents
- whether they felt there were enough trees in the borough
- what beneficial effects they felt more tree planting would have
- what problems they felt needed to be addressed in connection with trees
- whether residents had any suggestions on how the tree service might be improved

The survey which was published in "Your Croydon" in October 2007 and the questionnaire which was used on Croydon Council's website, the Talk2Croydon website and at Neighbourhood Partnerships are shown as appendices A and B respectively. The format which appeared in "Your Croydon" was limited by the small amount of space available at the time. As website formats allowed for longer questionnaires, changes to the original survey were made in consultation with staff managing the tree service.

2 - The responses

A total of 381 responses have been received and processed.

Medium	Period	No of responses
Questionnaires in the October issue of 'Your Croydon'	October 2007 - February 2008	157
Croydon Council's Website	26th September - 12th November 2007	78
Talk2Croydon Website	4th October - 28th November 2007	100
Neighbourhood Partnership meetings	Autumn 2007	22
Letters and e-mails sent in by 20 people	September 2007 - January 2008	24
Total		381

Table 1: Numbers of responses to the trees survey

3 - Key findings of the survey

An analysis of the overall concerns of residents running across the various answers to questions asked showed that:

- 184 respondents felt that there were too few trees in the borough or commented that more tree planting was required in Croydon
- 93 respondents, including some of those who felt there were too few trees, commented specifically on trees being cut down and not replaced in the borough

- 121 respondents commented either about overgrown trees and the lack of pruning, or about the fierce pruning of local trees
- 52 had concerns about general tree maintenance and customer service issues
- Of the 20 people who sent in letters or e-mails, 10 commented about trees being cut down and not replaced, and 7 commented about trees being overgrown or being pruned too harshly.

Responses given to each question are discussed below.

4 - "What is your postcode?"

The table below shows the number of responses received per post code area. 25 respondents did not give out their post code, however.

POSTCODE	WARDS	NO OF RESPONSES
CR0 0	New Addington	8
CR0 1	Fairfield	6
CR0 2	Selhurst	6
CR0 3	Waddon, Broad Green	10
CR0 4	Waddon	20
CR0 5	Fairfield	12
CR0 6	Addiscombe	30
CR0 7	Addiscombe, Ashburton	25
CR0 8	Shirley	24
CR0 9	Fieldway (New Addington)	14
CR2	South Croydon, Croham, Heathfield, Sanderstead, Selsdon and Ballards	49
CR3	Whyteleafe	2
CR5	Coulsdon East and West	17
CR7	Thornton Heath, Bensham Manor, West Thornton	27
CR8	Purley & Kenley	34
CR9	Central Croydon	3
SE19	Upper Norwood	9
SE25	South Norwood	19
SW16	Norbury	12
BR6	Outside The Borough	1
SE16	Outside The Borough	1
SE29	Outside The Borough	1
SM	Outside The Borough	2
Not given		25
TOTAL		357

Table 2: Numbers of responses by post code

5 - "Are there enough trees in your area?"

Responses to this question were as follows:

- 62 out of the 157 respondents to the survey in "Your Croydon" felt there were too few trees in their area, while 64 felt the number was about right
- 99 of the remaining 200 respondents felt there were too few trees in their streets, while 87 felt the number was about right
- 114 out of these 200 respondents felt that the number of trees in parks and woodlands was about right, while 67 felt there were too few

- Of the 20 people who wrote to the Council, 10 stated that the Council should replant trees which have been cut down.

	In your area ("Your Croydon")	On streets (Web & hard copy)	In parks / woodland (Web & hard copy)
Too few	**62**	99	67
Too many	**23**	5	2
About right	**64**	87	114
Blank	**8**	9	17
TOTAL	**157**	200	200

Table 3: Responses to the question "Are there enough trees in your area?"

The survey which appeared in "Your Croydon" also asked "Do you think more trees need to be planted in your area"? Responses were as follows:

- 77 out of the 157 respondents responded in the positive, more than the 62 residents who stated there were too few trees
- 60 answered no
- 6 were unsure
- 14 did not reply to this question.

6 - What beneficial effects do you think such new trees would have on the area?

This question was asked in the web questionnaires and at Neighbourhood Partnership meetings, but not in the survey in "Your Croydon". 144 out of the 200 respondents who were asked this question left it unanswered. The remaining 56 respondents provided the following feedback (please note many respondents gave a long list of benefits, such as "beauty, softens concrete, wildlife, windbreak"):

- **More attractive appearance (97 replies)**:65 felt that more planting would lead to a visual improvement of the area, 12 stated it would make the area "look greener", 15 stated it would soften "hard" landscapes, and 5 stated that it would "enhance" the area

- **A better environment (87 replies)**: 25 felt that it would be good for wildlife, 22 felt it would improve the environment, 21 stated that it would produce fresher air and 19 answered that it would reduce CO2 emissions or pollution

- **A better mood (19 replies**): 6 stated that it would improve the "feel" of the area and 13 felt that more trees would have a calming effect or improve people's mood

- **Other responses (42 replies):** these included "counteracts the effects of traffic", "a windbreak", "reduces flooding", trees reflect changing seasons", etc.

7 - Where are trees needed?

211 respondents answered this question, and another 146 left this blank. Most answers focused around the following themes:

"Types" of location
12 respondents answered that trees should be planted wherever possible. A large number (51) asked for trees to be planted on roads, streets, pavements and grass verges, and in sites where trees had previously been removed (26). 12 asked for more trees in streets *and* parks, while another 12 wanted more trees in open spaces.

Town centres and new developments
13 respondents asked for more trees in town centres, with 2 specifically asking for more in Central Croydon and another 2 asking for more trees in Purley town centre. 6 respondents asked for trees to be planted in areas of new developments are being built, e.g. London Rd.

Specific locations
Another 70 residents suggested areas where new trees might be planted, such as Addiscombe (7 requests including 3 for Stretton Road) and Pollards Hill (3 requests). Requests for tree planting at specific addresses have been forwarded to the Trees and Woodlands officer for his attention.

8 - If you think more trees need to be planted, what type of tree would you like to see?

As regards the type of tree wanted, the two most frequent requests were for native trees (33) and for flowering trees (28, including 11 requests for cherry blossom trees).

Type of tree	No of respondents making the suggestion
Natives	33
Oak	14
Plane trees	10
Rowan	6
Evergreens	5
Broad leaf	4
Olive trees	1
Palm trees	1
Flowering trees	28 Including 11 for cherry blossom

Table 4: Trees requested by respondents

A number of respondents did not indicate a particular species, but asked that they should be pretty (5), "ornamental" (8), or have good colour (6).

Practicalities exercised the minds of various respondents. 7 asked for lost trees to be replaced, 10 requested small trees, 6 asked for trees with limited fruit fall, 2 asked that no sycamores be planted and 1 simply requested trees without significant sap fall.

127 respondents did not answer this question.

9 - Key problems reported

60 out of the 357 respondents stated that there were no problems, 11 were not sure, and 9 respondents did not respond to the question. The remaining 277 survey respondents highlighted the problems listed in table 5 on the following page, many mentioning more than one.

As regards postcode-based trends, we did not receive sufficient responses to build a clear area-based picture. The following statistics stood out from the rest, although they are still very low in number:

Vandalism was a concern to:

- 10 from Thornton Heath (CR7)
- 8 respondents from Shirley (CR0 8)
- 5 from New Addington (CR0 0 and CR0 9)
- 5 from South Norwood (SE25)

Fruit fall appeared to cause particular concern among residents of Addiscombe (7 responses)

Overgrown trees were reported by 17 respondents from the CR2 postcode (South Croydon and Sanderstead) and 7 from the CR8 area (Purley and Kenley).

Table 5 below outlines the types of problems reported and the specific issues mentioned by respondents. Many of these are echoed in "further comments" by respondents (see section 12), with one exception: 58 respondents stated that vandalism was a problem but only 2 provided further comments on this concern.

Type of problem	Issues mentioned	Number of respondents
Overgrown trees	- Overgrown trees - Overgrown trees obstructing street lights - Overgrown trees interfering with telephone wires - Overgrown trees interfering with house drains - Loss of visibility for cars and pedestrians	92
Vandalism	- Vandalism	58
Fruit fall	- Risk of accidents on slippery pavements	47
Problems with roots	- damage to pavements - damage to properties - can cause accidents	45
Lack of trees	- Not enough trees - Loss of trees - Trees cut down for no discernible reason - Trees cut down too hastily - Lost trees not replaced	36
Poor service	- Poor workmanship - Insufficient watering - Insufficient inspections - Poor maintenance - poor response to residents' suggestions - poor procedure for replacing trees - inadequate resources for tree service	9
Pruning issues	- Poor quality of pruning - excessive pruning Please also note above-mentioned concerns regarding overgrown trees and lack of pruning	7

10 - "Do you take part in any activity to plant, preserve or maintain trees?"

102 of survey respondents stated they were currently involved in some form of work to care for trees, while 227 respondents stated they were not. 33 left the question unanswered. 14 stated that their work focused on their own garden, and other respondents' work ranged

from planting trees either alone or with a conservation group, watering trees in hot weather, reporting problems, providing financial support for tree planting, etc.

67 respondents stated that they would be interested in getting involved with tree work in the future, while 48 stated they were unsure. E-mails were sent to respondents to provide them with further information, but the response to these was very poor.

11 - In what way do you think that tree services could be improved, to benefit your area?

Improved services: 89 respondents asked for improved services to care for trees and the local environment, e.g. regular pruning (21 responses) and improved quality of pruning (11 responses), regular leaf clearing (8 responses), and regular monitoring of trees (7 requests).

More trees: 18 requests were made for more trees to be planted, and another 19, for felled trees to be replaced.

Education and involvement: 7 respondents advocated more community involvement and 5 suggested that the community should be better educated about the benefits of trees.

Other responses included:

- Requests relating to specific types of tree (4 comments) e.g. the removal of all sycamore trees
- The need to protect trees from developers (7)
- Comments regarding private gardens (4)
- The need for more resources for the tree service (2)
- The need for residents to have more information e.g. pruning regimes and officers' contact details (2)
- 4 respondents answered by complimenting relevant officers for their work
- 1 respondent asked for all trees to be cut down as they make a mess

70 respondents did not answer this question.

12 - Further comments

Of the 357 survey respondents, 227 provided various comments on trees around the borough.

53 stated that the Council needs to plant **more trees**, and 41 specified that trees which have been cut down need to be replaced.

38 commented on the lack of **pruning**, or the excessive pruning carried out

37 commented on **maintenance issues**, stating that maintenance was currently insufficient or poor. Comments included concern about fruit fall and leaf clearance

14 respondents commented on issues relating to **specific species**:

- 3 requested that no more sycamores should be planted
- 3 asked for no more lime trees to be planted in an urban environment, as these tend to be unmanageably large and messy
- 2 requested that no "forest trees" should be planted in an urban environment
- One resident suggested that silver birches should not be planted in the street, as they "cause problems"
- One resident complained about the mess created by hawthorn berries, while another complained that squirrels bury horse chestnut conkers in autumn, thus producing a myriad of saplings in spring. One respondent, on the other hand, expressed his concern regarding the diseases currently afflicting chestnut trees in England.

Other comments are listed in table 6 below.

COMMENT	NUMBER OF RESPONDENTS
Concerns regarding the threat of new development to trees in the borough	9
The Council needs to involve the public, including those who do damage to trees	9
Supportive and complimentary regarding the Council's tree service	7
Positive comments about the trees in the borough	5
Offer of help or commitments to care for trees	6
Comments on problems in private gardens	5
Suggestions (e.g. need to plant trees to combat the growing urban heat effect, and to plant trees that will do well in warmer weather	12
Miscellaneous comments e.g. complaint that the further comments field was not large enough for respondents to explain their concerns	25

Table 6: Other comments made by survey respondents

13 - Conclusions on residents' views of trees in Croydon

Replies to this survey suggest that there is considerable concern regarding trees in the borough, particularly as the 157 respondents to the survey in "Your Croydon" had to pay for their own postage to send in their responses.

The themes which run through all the answers are the need for better pruning and for more planting.

Residents expressed various concerns about maintenance, but above all about **pruning**, which was felt to be carried out on a "all or nothing" basis: many residents complained about overgrown trees causing a range of problems in their area, and many others expressed their dismay at the extreme pollarding of trees in their neighbourhoods, leaving streets lined with ungainly stumps. 128 residents (a third of all respondents) voiced their concerns regarding the need to improve the frequency and quality of pruning. One respondent also voiced concerns over the timing of pruning, warning that coppicing in spring can interfere with nest-building.

Respondents fell strongly that Croydon needs **more planting**, a view which appears in one guise or another in 184 survey replies and another 10 letters and e-mails - over half of the answers. In addition, 93 respondents highlighted the trend of cutting down trees but not replacing them, and many expressed confusion as to the rationale behind this work. A relatively small number of residents also highlighted the need to preserve or plant trees on new housing developments.

Residents' answers show that trees have a number of different functions: to many, it fulfils an aesthetic role. To others, their chief value lies in their environmental benefits, e.g. their effect on air quality and their importance for the local wildlife. Perhaps a surprising number of respondents highlighted their value as a mood enhancer.

The choice of trees exercised the minds of many respondents. While parks and other green spaces may be well suited to species that shed large quantities of fruit and sap, these were felt to be a serious problem in an urban environment. While residents expressed their appreciation of decorative foliage and blossom, it was generally felt that the Council should select species which are small and have as little impact as possible on the surface of pavements and cars. Sycamores in particular were felt to cause harm in an urban environment.

Perhaps with the local climactic considerations in mind, a significant number of residents requested that the Council should plant native trees. On the other hand, one respondent suggested that one should perhaps consider species which will adapt well to rising temperatures in view of current global warming.

102 respondents stated they made some sort of contribution towards tree planting or care, demonstrating an active interest in trees. However, despite their lack of practical involvement, the majority of other respondents showed real concern for the tree cover in the borough, and appreciation for its benefits, despite their concerns regarding fruit fall, damage caused by roots, leaf collection, etc. Very few respondents felt there were too many trees in the borough (see the table on page 2), and only one lonely voice asked for all trees to be cut down "because of the nuisance they caused". It is to be hoped that this enthusiasm can be harnessed in future to benefit local trees, whether on Croydon's street, in parks or in woodlands.

APPENDIX A: Questionnaire published in the October issue of "Your Croydon".

PLEASE CUT ALONG DOTTED LINE AND SEND BACK TO THE ADDRESS SUPPLIED

Your views on the borough's trees

As the borough is about to take on autumn colours, the council would like to know what your views are on its trees – their benefits, as well as problems relating to them.

1. Your postcode _____

2. What do you think of the number of trees in your area?

☐ Too few ☐ Too many ☐ About right

3. Do you think more trees need to be planted in your area?

☐ Yes ☐ No ☐ Not sure

Where? _____

4. If you think more trees need to be planted, what type(s) would you like to see? _____

5. Do you think there are problems relating to trees in your area?

☐ Yes ☐ No ☐ Not sure

What problems? _____

The findings will be used to make recommendations for improvements regarding tree planting and maintenance, and resident involvement in these.

Please complete the short questionnaire below and forward to: **Scrutiny Support Team, 5th Floor, Taberner House, Park Lane, Croydon CR9 3JS.**

6. Do you take part in any activity to plant, preserve or maintain trees?

☐ Yes ☐ No

Which activity? _____

7. Any further comments on tree planting and maintenance?

_____

8. Your name (optional): _____

9. Your telephone number or email address (optional):

_____

CROYDON - 'A place to be proud of'

APPENDIX B : Questions used on Croydon Council and Talk2Croydon websites, and at Neighbourhood Partnership meetings.

Tell us your views about the trees in your neighbourhood!

As the borough is about to take on autumn colours, Councillors would like to know what your views are on our local trees, their benefits as well as problems relating to them. They aim to use the findings from this survey to make **recommendations for improvements** regarding tree planting and maintenance, and resident involvement in these.

We would therefore be grateful if you would reply to the questions below and return your questionnaire to the officers providing support at your Neighbourhood Partnership meeting.

1 Your postcode _____

2 Do you think your area has the right amount of trees? *(tick your chosen answer)*
On streets: There are too few ☐ too many ☐ about the right amount ☐
in parks / woodlands: There are too few ☐ too many ☐ about the right amount ☐

3 If you think more trees need to be planted in your neighbourhood or another part of the borough, what types of trees would you like to see planted ? _____
_____
Where? _____
What beneficial effects do you think such new trees would have on the area?_____
_____

4 Do you think there are any problems relating to trees in your area?
(tick your chosen answer) Yes ☐ No ☐ Not sure ☐

4a What problems?

Trees in poor condition	☐	Root damage to pavements	☐
Overgrown trees	☐	Vandalism to trees	☐
Fruit fall on pavements	☐	Other (please specify):_____	

5 In what way do you think that tree services could be improved, in order to benefit your area?
_____

6 Do you take part in any activity to plant, preserve or maintain trees in your own neighbourhood or in Croydon's open spaces? Yes ☐ No ☐ Which activity? _____

6a If you are not involved in such work at present, would you be interested in finding out more about "friends' groups" in your area, which look after specific green spaces? Yes ☐ No ☐ Not sure ☐

7 Any further comments you would like to make on tree planting and maintenance:
_____

8 Your name (optional)_____
9 Your telephone number / e-mail address(optional) _____

In processing any personal data supplied, the Council shall ensure strict compliance with the provisions of relevant Human Rights legislation, particularly the Data Protection Act 1998.

Thank you for completing this questionnaire.

APPENDIX 3

The Council's tree management protocol (from the Plan for managing the Council's trees - 2007)

Commitment	**The Trees & Woodlands Section is committed to the effective management of its tree resource.**
Retention	The council is committed to retaining its established tree stock and woodlands unless there are good arboricultural, environmental or risk related reasons which require their removal. This may include dead, diseased or dying trees or where there are sound conservation reasons such as coppicing
Public Safety	Public safety is of foremost importance when making decisions about trees throughout the Borough. The Council has a clear duty of care regarding the safety of trees and officers of the Trees & Woodland Section have the responsibility of making decisions relating to this.
Standards A) Trees B) Woodlands	The Council will ensure all tree work for which it has responsibility is carried out according to BS3998:1989, British Standard Recommendations for Tree Work To maintain the Borough's high standards of woodland management. Croydon is currently the only London Borough which holds a Forestry Stewardship Council (FSC) certificate for sustainable woodland management and is seen as an exemplar of conservation management. The council is committed to the principles and criteria of the FSC and to managing their woodlands to the UKWAS standard.
The importance of trees	It is the policy of the Trees and Woodlands Section that trees should be given the highest priority as regards decisions over their effect on and siting of CCTV cameras, street lighting and footpath damage
Tree Related Nuisance	The Council will not carry out tree work such as removing individual branches or crown reduction to alleviate a nuisance which will not have a significant effect on that nuisance
Nuisance: Minor & Seasonal	The Council will not carry out pruning works due to minor or seasonal nuisances such as honeydew, bird droppings, leaf-fall and the dropping of fruit with the exception of the larger fruiting trees such as plums and apple pears. It is also the Council's practice to suggest more careful siting of satellite dishes and not to prune or reduce the size of trees specifically to improve satellite television reception If it is possible to improve the situation through general maintenance, this work will be carried out at the appropriate time
Nuisance: Light Obstruction	The Council will not generally carry out crown thinning or crown reduction work to trees in relation to obstruction of light unless it forms part of the general maintenance programme. The Council will try to improve the situation through pruning back from property and crown lifting where feasible

Off street parking	The removal of healthy street trees to facilitate off street parking will not be considered except in exceptional circumstances where a tree is dead, diseased or dangerous.
Subsidence	The maintenance of highway trees will take on board the potential for subsidence. The proactive management of our trees will be based upon maintenance cycles ranging from 3 to 5 years. We will challenge claims based on spurious or inaccurate evidence. The ALARM Joint Tree Root Protocol will be adopted as the process by which claims are handled and endeavour to deal with the claims in the appropriate time period.
Nuisance: View Obstruction	The Council will not carry out maintenance or tree removal to reinstate scenic views. If it is possible to improve the situation through general maintenance, this work will be carried out at the appropriate time
Engineering works	The Council will aims to actively protect its own tree stock from avoidable damage caused by agencies responsible for engineering works near trees.
Pollarding	Short rotation pollarding of trees will be carried out where they are growing in very close proximity to buildings. This will be identified via a programme of proactive inspection. In some cases passed removal and if appropriate replanting with smaller species may be appropriate.
Tree Size & Amenity	Wherever there is space to allow a tree to grow to full size the Council will seek to plant the largest tree possible, notwithstanding the need to select trees for reasons of character, design and the need for the right tree for the right size. This is reflection of the need to have structurally significant trees for future generations.
Wildlife	To increase trees value for wildlife. Trees and woodlands, sympathetically managed, provide a valuable habitat for wildlife. This may involve both the retention of old or dead trees where appropriate or the cutting of young trees on a regular cycle as with coppicing. It must also be remembered that trees in some locations may not be advantageous for wildlife for example lowland heath in which case a programme of tree removal may be considered. In addition where appropriate native species, ideally from local provenance, will be planted to maximise habitats for wildlife.
Community	To continue to involve the community in all aspects of Croydon's tree scape A public alienated from its environment are unlikely to care for it.
Education	To provide a better understanding of the management of trees
Access	The Council is committed to free access to all its woodland sites and parks other than four small areas closed for wildlife reasons.

APPENDIX 4

CRITERIA FOR SELECTING TREES

A wide range of criteria need to be taken into account when selecting the appropriate tree species for specific locations.

SUITABILITY OF SPECIES TO LOCATION	- Size of tree - growth rate of tree - Location (in park or forest, or on pavement) - Proximity to buildings (size of pavements) and street furniture - Amount of vehicular traffic in the vicinity - Local microclimate
BENEFITS OF SPECIES	- Improvements to air quality - Absorption of rain water - Tolerance of poor soils - Tolerance of pollution - Tolerance of extremes in temperatures and rainfall - Resistance to disease - Aesthetic value (shape and colour of leaves, flowers, fruit and tree trunk) - Contribution to local bio-diversity
DISADVANTAGES OF SPECIES	Fruit, leaf and sap fall Emission of Volatile Organic Compounds (VOCs)