

THE FOREST OF FINGAL

A Tree Strategy for Fingal

Draft tree strategy for Presentation to Council May 10th 2010

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A Tree Strategy for Fingal

This draft tree strategy for Fingal is the culmination of 10 years of work and the beginning of a new approach to tree management by Fingal County Council. In 2000 the former Senior Parks Superintendent encouraged and supported a number of Parks Superintendents and gardeners to study for and obtain professional arboricultural qualifications. Within a few years 2 members of staff had obtained the Professional Diploma in Arboriculture from the Royal Forestry Society and 5 others the Technical Certificate in Arboriculture. Following this approval was given to purchase tree management software to survey and inspect trees and also to manage tree works and enquiries. Analysis of the tree survey has enabled us to measure the extent of various problems and confirm what were in effect hunches until then. This analysis has informed the development of the tree strategy particularly the proposals in section IIIA.

This is a draft document for discussion and feedback and an opportunity for the public to let us know if we are going in the right direction. The tree strategy compliments changes in how we manage the maintenance of public open space and also supports the biodiversity policy of Fingal County Council and Green Infrastructure policy. We will also expect developers to follow this guide in how they select trees and where they plant them in new developments.

In the analysis of the street tree stock and works requests received from the public 3 issues keep recurring – shading of dwellings and gardens, uplifting of footpaths leading to trip hazards and incidence of the defect known as a compression fork. Excepting the compression fork the other 2 could be summed up as ‘wrong tree – wrong place’ and the proposals in this strategy are designed to deal with this without causing other problems. Regarding compression forks the changes proposed in how we maintain open space should enable us to assign a greater resource to tree maintenance and in time overcome this issue through timely and judicious pruning.

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A Tree Strategy for Fingal County Council

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Executive Summary

This tree strategy should be considered together with the Green Infrastructure Plan, the Biodiversity Plan and the changes being made in open space maintenance regimes as all are part of a coherent plan for the county.

The management system chosen for the urban forest in Fingal is continuous cover forest with trees of mixed age and mixed species. This allows for active management of the forest while retaining tree cover at all times, makes allowances for catastrophic events such as an outbreak of serious diseases such as fire blight and ensures a reasonable balance of young, mature and veteran trees in our urban forest.

Our aim is to

- Retain and protect the trees we have
- Care for the trees we have to maximise their useful life and
- Plant more trees

In the surveying of our street trees 3 major issues were noted i.e. shade, uplifting of footpaths and presence of the tree defect known as a compression fork. In addition we are far too reliant on a few species. To deal with these issues species selection will be changed to ensure we have the right tree in the right place. We will

- Select trees suitable for the available rooting area. This means using smaller growing species as roadside trees for many of our estates.
- Not plant large growing trees close to dwellings or public light standards to reduce shading and security issues
- Select species to ensure we have a wide range of trees and are not over reliant on a few species.

One of the results of this will be a loss of large canopy tree cover in the urban area. To compensate for this we will plant large canopy trees on public open space paying attention to shadow patterns and designing out screening that may be attractive to anti-social elements. This will also mean limiting shrub and under storey plantings to about 1 metre to allow views through tree groups and woodland and to deter congregating of anti-social elements..

The strategy also involves more timely response to customer's requests for action and extending the time period in which we work on trees. This in turn requires a freeing up of labour through balancing turf grass maintenance efforts to match customer needs i.e. mowing to focus on areas that require short mown turf such as football pitches. This is covered in more detail in the report on planned changes to open space maintenance regimes. There are many more issues to be dealt with and these are covered in some detail in part IIIA of the strategy.

This strategy represents a significant change in how we manage our trees and will raise the question as to how we deal with existing trees and plantings that are different to what we now plan. Existing trees will be dealt with on a case by case basis with replacement being considered when the trees approach the end of their useful life or are causing so many problems that they must be replaced. Felling will be the last option considered. However the pace of this change must be managed and it must be accepted that the full change will take about 30 years to work through the tree stock. Shrub plantings and under storey planting that is attractive to anti-social elements will be removed. Hedgerows will be retained but how hedgerows are selected for retention and how developers plan to lay out estates will be reviewed.

We have tried to balance what we want from our trees and how we manage them with the realities of resource availability. For this reason frequent hard pruning (a favoured option among those who completed the on line questionnaire) has been rejected as an unsustainable option and in many cases we have recommended replacement of unsuitable trees with more appropriate species for the location. In all cases we have attempted to deal with the reality of what is happening to our trees rather than base our actions on how we would like things to be.

This document is in draft form and the public is invited to comment on the strategy and to provide feedback for the final version of the strategy. We hope to complete this process by the autumn of 2010.

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For discussion and public feedback

Communities acknowledge that city trees provide a wide range of net benefits. Trees are essential to the current and future health of cities and their inhabitants. The tree renewal process within cities must be managed because natural regeneration will not meet the needs of providing continuous cover.

The 'urban forest' is composed of all trees in the community regardless of ownership. The pattern of ownership and management of trees within a city varies greatly; the division of responsibilities can create problems and differences of opinion between different interest groups, communities, businesses and Local Authority departments. There can be problems of communication, conflicting priorities and misunderstandings which result in difficulties for all those involved in managing trees.

Benefits of a Tree Strategy

1. Allocation of resources and funding is more secure and long term.
2. With approval by the political system a sustainable and consistent approach becomes possible across departments and with the public and private sector.
3. The strategy becomes a reference point for all those interested in trees.
4. Educational improvements lead to a better informed debate regarding trees.
5. Promotes and ensures more appropriate and higher quality management of trees.
6. More likely to have professional and trained tree staff in a Local Authority.
7. The status and profile of trees as an issue is improved.
8. Health and safety improvements – pollution, noise, stress etc.
9. Cost savings from reduced liability from hazard trees and healthier and longer lived trees.
10. Ensures the tree legacy for future generations.
11. Continuity of policy when professional tree staff changes.

12. Promotes more cost effective and proactive management rather than reactive management.
13. Allows modification to cater for changes in life styles, climate changes, pest and disease pressures etc.
14. Single event disasters more appropriately dealt with e.g. hurricanes, Dutch elm disease, fire blight
15. Private sector will favour, support and fund a strategy as it improves quality of life and provides certainty regarding tree law.
16. Improves protection of existing tree stock.
17. Trees become an integral part of any plan for urban renewal.
18. Fits Agenda 21 goals and policies in relation to sustainable development

A tree strategy is very wide ranging and involves everyone. This must happen for the strategy to be successful. We must have strategies to have pro-active tree management and this in turn is necessary to have cost effective management of trees.

The urban forest makes an important contribution to the quality of urban life. Whilst Fingal has some very fine trees, hedges and woodlands both in the urban and rural parts of the county many of these trees are under threat and Fingal is by no means rich in trees. We want a county with a diversity and abundance of healthy, attractive trees, cared for and managed to a high standard.

“The Forest of Fingal” will be our strategy for the trees, hedges and woodlands in the county. A strategy is used to direct and define the things we need to do to achieve our aims and objectives. We want a forest with continuous cover with trees of mixed age and mixed species. To do this we must protect and care for the trees we have and plant more trees and do this in a way that will achieve the objectives we agree in the strategy.

To do this we have 3 specific objectives

1. Retain, protect and enhance existing trees, groups of trees, woodlands and hedgerows
2. Care for trees, tree groups, woodlands and hedgerows to promote healthy growth and development
3. Plant more trees, woodlands, tree groups, street trees and woodlands

Action Plan

Our goal for the Forest of Fingal is to have a continuous cover urban forest of mixed age and mixed species. To do this we must a plan.

We have developed our first five year action plan of individual actions that we hope to achieve listed under each objective. Much of this is based on the survey of street trees and trees growing on public open space carried out in 2009 and 2010. We have also developed guidelines to help achieve our aims and objectives.

During 2009 and early 2010 we carried out an online survey on the councils website to check what the residents of Fingal wanted from their trees and how they wanted the trees managed. The response was smaller than hoped for even though it was mentioned in the Fingal Newsletter, the local press and there was a direct link from the council's home page. The 49 responses to the various questions were overwhelmingly in favour of trees but had issues particularly with shade and the size of trees.

The tree strategy is an on-going process to protect, care for and plant more trees. We hope that local people will continue to help this process by participating in tree-related initiatives. We have already taken steps to set up a consultative forum on trees and a tree warden scheme.

Format

"The Forest of Fingal" comes as a folder containing a range of material about street trees and trees growing on public open space. We hope to continuously add to the folder. We will also review and update the strategy every 5 years.

The tree strategy proper has three parts

- **Part I** is this action plan
- **Part II** contains our policies for trees and tree work.
- **Part III** provides guidance on management for the council's own trees.
- **Part IIIA** is a set of tree issues with some background information and proposals for how we should deal with the issue.

Part III, and particularly part IIIA, will become the policy manual for officers who deal with Fingal's trees but it is also designed to be helpful to elected members and to anyone else who would like to understand what sort of tree work is being carried out, the circumstances when it is necessary and why. We hope that the detailed policies and guidance will also be of interest to private tree owners and contractors carrying out tree, hedging and woodland operations.

An Action Plan for trees in Fingal

This action plan sets out things we hope to achieve between January 2011 and December 2016. Subject to availability of resources, it is concerned with finding ways to secure effective management of the tree stock and to achieve a modest increase in tree cover. The action plan also identifies ways to improve the contribution of trees to the well-being of the people who live or work in Fingal, to benefit wildlife and to promote the character and distinctiveness of Fingal.

Fingal County Council has also prepared a biodiversity action plan. Trees, hedges and woodlands are important for wildlife and the tree strategy action plan complements the councils biodiversity plan

Forest of Fingal Action Plan 2011-2016

To Retain and Protect existing woodlands, hedgerows, individual trees and tree groups

Actions	Why	Who	When
Continue the regular surveying of Council trees Including street trees and trees on public open space	To assist in policy formation, public information and to manage our tree stock in a timely manner	Parks Div	Ongoing and summarise in annual report
Record and monitor veteran trees in Fingal	To enable the council to actively protect these trees	Parks Div	Ongoing and summarise in annual report
Monitor changes and trends in urban tree cover	To guide in the development of tree policy and changes in practice	Parks Div	Ongoing and summarise in annual report
Review Code of Practice for contractors working within tree rooting zones	To protect established trees and to minimise damage to roots and over ground parts	Parks Div. & Transportation Dept	Complete by December 2010
Initiate a Tree Warden Scheme & organise training sessions	To involve the community in the care of our tree stock and to assist the council in times when resources are constrained	Parks Div	Commence in 2010 and summarise activity in annual report
Use planning powers to retain and protect trees on development sites and enforce as necessary	To prevent the needless loss of trees	Parks Div. & Planning Dept.	Ongoing and summarise in annual report

Ensure that wherever possible mature trees that have to be felled are replaced with a new tree in the same location or nearby	To prevent loss of tree cover	Parks Div	Ongoing and summarise in annual report
Prepare public information leaflet on caring for and protecting trees and publish on council website	To improve the standard of care of trees and avoid unnecessary damage to or loss of trees	Parks Div	Commence in 2010 and summarise activity in annual report
Training courses for all Council employees whose work may involve them dealing directly or indirectly with trees	To improve overall knowledge of and trees and avoid damage to trees through lack of knowledge	Parks Div	Ongoing and summarise in annual report

Care for woodlands, hedgerows, trees, tree groups and street trees to promote healthy growth and development

Actions	Why	Who	When
Prepare Management Plans for all Council woodlands by 2016	To ensure best possible outcome as these woodlands grow and develop	Parks Div	Commence in 2010 and summarise activity in annual report
Review management plans for Council woodlands every five years	Good practice to correct errors and deal with unforeseen events	Parks Div	Ongoing and summarise in annual report
Encourage the adoption of appropriate hedge management regimes for council hedges	To retain hedges with wildlife values intact	Parks Div	Ongoing and summarise in annual report
Prepare design guidance to promote good care of garden and allotment hedges and publish on council website or provide links to websites that provide such advice	To retain hedges with wildlife values intact	Parks Div	Develop in 2010, publish and review annually
Ensure that capital investment in young woodland plantations is protected through proper management plans for the woodlands	To ensure the eventual outcome is as planned and to prevent unnecessary loss of trees	Parks Div.	Ongoing and summarise in annual report

Advice and guidance to private tree owners on council website or links to relevant sites	To inform the public regarding best practice in tree care to retain/improve wildlife values	Parks Div	Ongoing and summarise in annual report
Develop a notice system for notifying the public in advance of intended tree felling	Good procedures and communication	Parks Div	Current system to be reviewed in 2010 and summarise actions in annual report
Identify potential new sites for woodland, scrub woodland and hedgerow planting	To increase tree and hedge cover and achieve improved wildlife value	Parks Div	Ongoing and summarise in annual report
Prepare guidelines for the design and management of woodlands and hedgerows in keeping with local character	To improve the standard of woodland and hedgerows in the county.	Parks Div	Develop in 2010, publish and review annually
Monitor and control works on roads affecting street trees and take action to prevent damage to tree roots	To prevent unnecessary damage to and loss of trees	Parks Div. Transportation Dept.	Ongoing and summarise in annual report
Use planning conditions and technical supervision to ensure a high standard of arboricultural work to trees conditioned for retention as part of the planning process	To prevent unnecessary loss of or damage to trees	Parks Div. & Planning Dept.	Ongoing and summarise in annual report
Use and enforce planning conditions requiring tree management works	To ensure achievement of objectives	Parks Div. & Planning Dept.	Ongoing and summarise in annual report

Complete and adopt The Forest of Fingal a tree strategy for Fingal	To guide the council, the public and contactors in the management of trees in Fingal and to remove doubt and ambiguity regarding tree policy	Parks Div.	Complete by December 2010
Monitor and enforce compliance with tree policy and guidelines.	To assess performance and guide changes to policy or practice	Parks Div. & Planning Dept.	Ongoing and summarise in annual report
Develop a Risk Assessment methodology for all Council trees	To ensure trees that might contribute to accidents causing personal injury or structural damage are inspected and managed in accordance with best practice	Parks Div.	Complete by December 2010
Implement a system for inspecting all Council trees on a regular basis	To move all tree works onto a planned basis and achieve the most efficient use of resources	Parks Div.	In place by December 2010
Prepare phased management plans for Council trees		Parks Div.	By December 2010
Provide advice and information about the advantages of planting for shelter and energy conservation on website or provide links to websites that provide such advice	To reduce Fingal's carbon footprint	Parks Div.	By December 2010
Publicise the recommendations of Fingal's Biodiversity Plan on woodland and Hedgerow habitats	To improve awareness biodiversity and appreciation actions taken to improve biodiversity	Parks Div.	Ongoing

Plant More Trees

Actions	Why	Who	When
Encourage the public to suggest areas where they would like to see more trees and develop a method to allow this	To ensure all suitable tree planting locations are used	Parks Div.	Method in place by June 2010 then ongoing
Enforce replacement planting conditions for felled protected trees	To maintain tree cover in the long term	Parks Div. Planning Dept.	Ongoing
All suitable street locations will have an appropriate species of tree planted	To maximise tree cover on streets	Parks Div.	Within 3 years of taking in charge or felling a tree
Require tree planting wherever it is appropriate, as a condition of all planning consents for new development or redevelopment of land	To compensate for loss of trees in development process and to maximise tree cover	Parks Div.	Ongoing and summarise in annual report
Plant at least 500 street trees per annum as replacements or new plantings	To maintain tree numbers and cover	Parks Div.	Commence winter season 2010/11
Increase the numbers of trees, particularly large canopy trees, planted on public open spaces to at least 1,000 per year	To increase tree cover and compensate for loss of large canopy trees in the streetscape	Parks Div.	Commence winter season 2010/11
Prepare advice for the public to encourage tree planting in gardens and wildlife gardening and publish on council website	To maximise tree cover and avoid unnecessary loss of trees due to uninformed planting choices	Parks Div.	Complete by December 2010

Use planning powers to secure planting of new trees on development sites	To maximise tree cover	Parks Div.	Ongoing
Encourage tree planting in association with new infrastructure especially roads	To maximise tree cover and to minimise negative impacts of infrastructure	Parks Div.	Ongoing
Seek larger soil volumes to support trees in all development schemes	To ensure trees can reach mature size without conflicts with the built environment	Parks Div.	Ongoing
Provide advice and information about the advantages of planting for screening, energy conservation etc. on Council website	To ensure all planted trees can grow to maturity and to minimise conflicts with the built environment	Parks Div.	Complete by December 2010
Encourage sponsors to support planting schemes on council land including memorial or commemorative trees or tree groups to mark special people or events	To improve tree cover, involve the public and commemorate people, organisations, initiatives or events	Parks Div.	Commence June 2010
Establish a county arboretum as part of development proposals for at least 1 regional park	As a resource for the public to inspect trees and assist them in selecting species for private planting	Parks Div.	Commence 2010/11 winter season

Increase the area of woodland on public open space by 5 hectares per annum	To increase large canopy tree cover and compensate for loss of large canopy street trees.	Parks Div.	Rolling 5 year average
Encourage tree planting in association with major new infrastructure e.g. roads, metro north	To increase large canopy tree cover and compensate for loss of large canopy street trees.	Parks Div.	Ongoing and as new development proposed

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Tree Policy

This tree policy forms the second part of 'The Forest of Fingal, A Tree Strategy for Fingal'. Part I outlines our objectives and action plan for the 2011-2016 period

The benefits of trees and woodlands have long been acknowledged. Since the "Earth Summit" in Rio de Janeiro there has been an increasing emphasis on sustainable development and conservation of our natural heritage. Trees have a significant part to play in achieving the objectives of Agenda 21, The Climate Change Convention and The Biodiversity Convention.

Fingal County Council recognises the benefits of trees both in the urban and rural parts of Fingal in improving the quality of the environment. In addition to the obvious benefits of providing shelter, screening, habitat for wildlife, filtering of the air, absorbing carbon dioxide and cooling trees also help stabilise soils and reduce surface run off into the storm sewage system and rivers. We are committed to conserving the County's trees and woodlands and increasing the overall stock of trees.

Fingal also has a Biodiversity Plan and there are many areas where the tree strategy and the biodiversity plan complement each other.

Our tree policies define the principles that we will apply to the trees for which we have responsibility.

Part III of the tree strategy is our Tree Management Guide for Council-owned trees which provides detail on tree issues the council faces and how it is proposed to deal with them. It details under what circumstances pruning or felling of trees will be considered appropriate and describes various types of tree work.

Part IIIA of the tree strategy is a more detailed description of common tree issues in Fingal, options for dealing with them, proposed actions and some of the consequences of these actions.

- **Fingal County Council is responsible for trees, woodlands and hedgerows on land it owns. Private owners are responsible for trees growing on their own land.**
- **Trees on private land may cause a nuisance or obstruction of the public road or footpath. The Council may have to use powers granted through the Roads Act 1994 to force landowners to ensure their trees do not pose a risk to road users.**

- **Many trees are protected through planning conditions to retain and protect trees and there are also a number of Tree Preservation Orders (TPO) in force in Fingal**

Trees are defined variously as woody perennial plants with a self-supporting stem or trunk, reaching a stature of at least 6 metres or with a stem with a minimum diameter of 75mm. For the purposes of the Tree Strategy for Fingal we are defining trees as above but are including specific policies for all woody vegetation including hedgerows and shrubs.

We will try to achieve the following wherever possible, using our statutory powers and offering encouragement and advice to others:

Healthy trees, hedges and woodlands will be protected, retained and enhanced wherever possible. No tree will be felled or pruned without good reason.

Fingal County Council will discourage any tree felling or pruning that is unnecessary. Essential work includes hazard removal, compliance with legal requirements such as the Roads Act 1994, and to allow approved development or redevelopment works to proceed. Where trees are to be retained developers will be required to protect the trees in accordance with the standards set out in BS 5837. Where an inappropriate tree has been planted in a location we will retain the tree so long as it is not causing problems nor in conflict with the built environment. Where a tree is in an inappropriate location it may be retained for a time or removed immediately if it is a hazard. When it is decided to fell the tree it will be replaced with a more suitable species. If the location is not suitable the tree will not be replaced but a replacement planted in the nearest suitable location.

Trees, hedges, and woodlands will be managed to ensure healthy growth and development.

Appropriate tree management is needed, particularly in the urban areas of Fingal, to ensure that trees, hedges and woodland are properly cared for through the various stages of their growth and development and to enable trees to thrive in a city environment. As part of that management maintenance work will be carried out on trees, hedges and woodland from time to time to retain them in a healthy condition, to ensure optimum conditions for growth and to maximise the safe useful life expectancy of the trees. As part of that management woodlands will be thinned and trees felled to ensure the health of the urban forest as a whole. We also need to take care of our veteran trees to ensure that they are not removed prematurely and that they pose no danger to the public.

The tree stock in Fingal will be increased with particular attention given to locally native species of local provenance where appropriate and promoting a

mix of tree species of different ages, including juvenile and veteran trees, to ensure a healthy, balanced, tree population.

Opportunities will be taken to plant more trees in Fingal wherever and whenever the opportunity arises in accordance with the proposals in the third and fourth folder of this strategy. We will take care that other valued wildlife and habitats are not lost or damaged by woodland planting. Individual trees and tree groups are also of great value including trees of more exotic or ornamental species, tolerant of local environmental conditions.

A Risk Management Strategy for Trees has been developed by the Council providing for trees to be subject to regular health and safety inspections. Trees will be inspected on a not more than 5 yearly cycle and trees with defects inspected more frequently.

As a tree owner the council has a duty of care and is obliged to carry out regular inspections to ensure that any foreseeable tree hazards can be identified and made safe. Virtually all of the councils street trees were inspected in 2009 and logged into a tree management database. In 2010 all trees growing on open space will be inspected and logged into the management database. The council's objective is to reduce the regular inspection cycle from a maximum of 5 years to 3 years in the 2011 – 2016 period. Trees with recognised defects or large trees within falling distance of roads, property or pedestrian routes will be inspected more frequently.

No tree or woodland will be felled or pruned without adequate justification.

Fingal County Council will not carry out felling or pruning that is unnecessary. Management and maintenance work will be carried out in accordance with policies in this document. Trees do require work from time to time for example to reduce risk and liability, or to ensure that people are not deprived of a reasonable right of enjoyment of public or private property.

Woodland, tree groups or plantations of young trees need to be assessed regularly and thinned to allow the remaining trees to develop. The circumstances where Fingal County Council considers that pruning or felling would be acceptable are outlined in the proposals in the third folder of this strategy. The proposals cover the majority of issues that are brought to the councils attention.

All requests for works to trees or woodlands on council land will be assessed and authorised by the council with reference to this strategy.

The vast majority of trees owned by the council are managed by the Parks Division which works in partnership with other departments regarding trees growing on lands controlled by them e.g. Housing Department, Water and Drainage Department. All decisions regarding tree works will comply with this tree strategy.

Individuals or organisations requesting tree work will be informed of the outcome of requests for tree works within 2 weeks (10 working days) if the

council decides not to carry out the works requested or if the individual or organisation request such a call. Agreed tree work will be carried out within 12 weeks (60 working days) of the decision notification, unless there are special reasons to programme the work in a particular season.

The area Parks Superintendents will be responsible for informing the public about the outcomes of requests for tree work, giving reasons for refusal if necessary. The Superintendents will be responsible for ensuring compliance with any legislation or restrictions affecting trees in their area. Tree work that has been agreed will usually be passed straight to the arboricultural works teams for implementation within 12 weeks. However, the Wildlife Act prohibits cutting of vegetation on uncultivated land between March 1st and August 31st. The National parks and Wildlife service has informed the council that it will accept that street trees are cultivated but it will not accept works on hedgerows during this period. Phenological research indicates that trees should not be pruned during leaf unfolding or when leaves are falling as these periods are when the tree puts a high demand on energy reserves. Planned pruning works will not be carried out in these periods.

Where a request for tree work is refused, there is a right of appeal to the Senior Parks Superintendent, and if necessary, the Director of Services.

We have always allowed a right of appeal where decisions about council trees were in dispute and this will still apply. Parks Superintendents with arboricultural qualifications will reassess the tree or trees and make a recommendation with full regard to this strategy. On very rare occasions when agreement cannot be reached, the Senior Parks Superintendent or Director of Services will make the decision.

All work to council trees or woodlands will be carried out in cooperation with the staff in the Parks Division who hold arboricultural qualifications.

Fingal County Council is committed to ensuring that our trees are properly cared for and that tree felling and pruning is carried out to a very high professional standard.

Fingal County Council will plant a new tree to replace every tree felled. The replacement will be in a location close to the site of the original tree except where circumstances dictate otherwise.

Except in the case of plantation thinning, replacement planting is essential to ensure continuity of the tree stock. A single young tree will take many years to achieve the size and scale of a large mature tree and in some locations it may be possible to plant several replacements. Replacement trees do not have to be in the exact same spot as the felled tree and a nearby location may be more practical and appropriate.

Street trees deserve special mention. Urban street trees live in an environment very hostile for trees and they need special care and protection. This can be costly. Streets are where most of our service cables, pipes and overhead wires are found, together with junction boxes, letter and telephone

boxes, street lights, signs and access chambers. The presence of this equipment above and below ground makes it difficult to find large enough spaces to plant trees. In residential areas verges have often been surfaced with tarmac and many people have double driveways. When mature street trees are felled it is often impossible to remove the tree stump without damaging services and this means we have little chance of planting a replacement tree in the same place. We need to choose locations for new street trees with great care and concentrate on streets that still have verges and new road schemes where tree planting can be planned at the outset. Major development or redevelopment offers us our best opportunity for planting new street trees.

Fingal County Council will work towards preparing phased Tree Management Plans for its trees and woodlands.

The results of regular tree inspections allow us to analyse our tree stock and to plan tree management works. One objective of this is to eliminate demand or complaint driven tree works as much as possible and to carry out works on a planned basis. Certain trees need regular repeat pruning work to adapt them to their setting. Street trees for example may need regular pruning but as far as possible we will plant appropriate species for the location and avoid demands for pruning works that would otherwise not be necessary. Where we are dealing with inappropriate trees for the location we may decide to fell the tree when it begins to cause problems. Regular pruning will include formative pruning to ensure the tree architecture does not cause future problems, lifting the crown to prevent branches hanging low over the road or footpath, maintenance of sight lines and removal of root suckers and epicormic growths. Tree work that is programmed and budgeted for in advance is more cost effective than waiting for problems to be reported. However the need to respond to individual and emergency situations is acknowledged, for example when trees suffer storm damage.

New tree planting will be in accordance with Fingal County Council's Tree Management Guide.

We have completed a Tree Management Guide for our own use for council owned trees and expect developers to carry out all works from tree planting operations, design to specification, implementation and establishment care to comply with this guide. Whilst this guide may not cover every single individual circumstance it is intended to draw attention to basic principles for selecting suitable trees for particular locations and for proper planting and care from the outset.

Tree planting and establishment will be carried out in accordance with good horticultural and arboricultural practice as defined by BS 4428:1989, BS 3998:1989, BS 5837:2005 and BS 7370:1991 and other good practice guides.

We are committed to achieving a very high standard of workmanship and setting a good example to others.

Additional policies for trees on privately owned land that are adjacent to and/or overhang Council property or highways and where a concern has been reported to the Council.

Owners are responsible for trees on their property and have a duty of care to others. Best practice advice suggests regular inspections by owners to ensure that any foreseeable hazards can be identified and made safe. As a responsible land owner Fingal County Council has developed a system of regular inspection and monitoring of its trees. We will encourage other landowners to do likewise. We will consider whether neighbouring trees are likely to pose any threat to members of the public using Council property. If we receive reports that a tree or trees are giving rise to concerns and inform the landowner of the councils concerns.

Owners of any trees that are a potential nuisance or danger to the public or to public property will be asked to carry out remedial work.

Fingal County Council has powers under section 70 of the Roads Act 1994, to compel tree owners to maintain their trees so that they do not pose a risk to road users including pedestrians using footpaths.

Fingal County Council will impose planning conditions to protect trees and woodlands that are of amenity value on development sites and that are in reasonable health and condition using the powers available under the Planning and Development Act 2000 and related regulations.

Fingal County Council has a responsibility to protect trees and woodlands in the county and can protect them through the use of Tree Preservation Orders (TPO's) or by Planning condition.

Fingal County Council wishes to protect hedges that are of acknowledged amenity, archaeological or nature conservation value, that contribute to the character and value of the local landscape and that are in reasonable health and condition. It will use the powers available under the Planning and Development Act 2000 and negotiation through the planning process.

Fingal County Council's hedges will be protected where appropriate and managed in a healthy condition, in the interests of local amenity and wildlife.

As well as providing an attractive boundary, hedgerows are of very significant nature conservation value. Hedges will be retained on Council land wherever possible. We will encourage Council tenants and private owners to do likewise. We will take steps to ensure that established and mature hedgerows are protected from unnecessary removal or damage to any parts above or below ground during the development process.

Where hedgerows have been retained on public open space they sometimes become a congregating point for anti-social elements who are a cause of

nuisance to local residents and who also damage the hedgerows. In these cases it is, unfortunately, sometimes necessary to remove the hedgerow.

Fingal County Council will increase stocks of traditional, locally native hedgerows where appropriate and will encourage the inclusion of hedgerow trees.

Opportunities will be taken to plant more hedgerows in Fingal using native species in countryside locations, to reinforce local countryside character or adjacent to sites of nature conservation value. In certain urban locations hedges of exotic or ornamental species may be more suitable and will still contribute significantly to amenity.

The planting of hedges of Leyland Cypress (X Cupressocyparis "Leylandii") will be discouraged and the council will not normally plant hedges of this species on council owned land. Where residents of an estate plant this species on publicly owned lands it will be removed when found.

Leyland Cypress hybrids will not be specified for use as hedging on council property. Where existing Leyland hedges are growing on council lands they will be removed as soon as they cause problems. Leyland hedges will not be maintained by the council due to the high labour demand to maintain these hedges.

In addition to Leyland cypress, cherry laurel *Prunus lauraucerasus*, Monterey Cypress *Cupressus macrocarpa* are not suitable for hedging on public open space. *If members of the public plant these species on public open space the council will remove them when found.*

Hedgerows on Council land will be managed to promote healthy growth and development and to maintain the hedge as a stockproof and effective boundary, whilst preventing any obstacle or risk to the public or to property. We will encourage private owners to do likewise.

Hedge growth can sometimes pose problems for the public or for property for example by preventing maintenance of buildings or by obstruction of paths and vehicle accesses. Appropriate management will usually include regular clipping. For some hedges there may be a need for other works such as hedge laying.

Where privately owned hedges obstruct roads or footpaths or are supresing street trees we will request land owners to prune or clip their hedges.

The Council's Management Strategy for Trees will include provision for our hedges to be subject to regular health and safety inspections.

These inspections will be carried out as part of the regular inspection of trees on public open space on a not less than 5 year cycle.

Established or mature hedges on Council land will not be grubbed out without adequate justification.

We will resist unnecessary hedge removal. However this must be balanced against the rights of citizens to privacy and avoidance of nuisance.

Requests for work to hedges on council property will be assessed and authorised by the Area Parks Superintendent. Individuals or organisations requesting work to hedges on council property will be informed of the outcome within 2 working weeks

Hedge clipping is a seasonal operation. Hedges are attractive to wildlife and particularly to birds during the nesting season (March to August). In accordance with current wildlife legislation it may not always be possible to complete hedgerow maintenance on all hedgerows within the time limits stated above

Hedge planting and establishment will be carried out in accordance with good horticultural practice as defined by current British Standards (4428:1989, 3998:1989, 7370:1991) and other good practice guidance promoted by government agencies and professional institutions.

Current Legislation and Planning Guides

- Wildlife Act 1994 and as amended in 2000
- Roads Act 1994
- Planning and Development Act 2000
- Planning and Development Regulations 2001
- Forestry Act 1949 (as amended) re Felling Licences

Draft

TREE MANAGEMENT GUIDELINES FOR TREES GROWING ON COUNCIL OWNED LAND

INTRODUCTION

These guidelines are intended as a supplementary note to accompany The Forest of Fingal A Tree Strategy for Fingal and outlines the Council's approach to tree management work. It describes situations where we are likely to consider pruning, felling or other forms of tree management work for our own trees. The discussion identifies typical situations where the different types of tree work are applicable, though each tree will always be assessed on its merits. All work to our trees is normally carried out by direct labour and specialist arboricultural teams contracted by the Council and will be in accordance with current legislation and regulations, British Standards and Codes of Practice where they apply.

The Parks Division will retain responsibility for monitoring performance in tree management to ensure that the Council acts in accordance with its own policies and makes progress in the implementation of tree management programmes. We will ensure that the Council acts in an even-handed manner in its dealings with privately owned trees protected by planning conditions or Tree Preservation Orders (TPO) and in caring for our own trees.

Trees will be assessed before pruning or felling to ensure that there are no breeding birds, bats, red squirrel or other wildlife likely to be harmed. We will retain records and monitor the nature and extent of tree work, producing an annual report. By monitoring the numbers of trees felled, replaced, pruned

and included within management programmes, we will be able to demonstrate that the Council's tree targets are being met.

One tool we will use in the monitoring of our tree management programme is the Current Asset Value Amenity Trees (CAVAT) system developed by Chris Neelon in cooperation with by the London Tree Officers Association. The CAVAT system will be incorporated into our tree management software to continuously update the overall value of our tree stock through pruning to increase the value of individual trees, replacing poor trees with new plantings etc. Our objective is to continuously increase the value of the tree stock.

MANAGEMENT PROGRAMMES FOR COUNCIL TREES

Trees are living organisms and with growth require ongoing management and maintenance. The Council's trees will be inspected on a cycle of not greater than 5 years with a more frequent cycle for very young trees, trees known to have defects and larger trees within falling distance of roads or property. Tree works will be recommended at inspection and all works given a priority rating as to a time period within which the works should be carried out. Maintenance works include the removal, pruning, staking, planting and replacement planting of trees.

The Council is committed to having trained tree personnel in each parks works depot and a Parks Superintendent in each area will have overall responsibility for tree management. This management approach will enable the above inspection and maintenance programme to be phased in over 5 years and should reduce the numbers of individual complaints and requests for tree work. It will also enable the Council to move away from a demand or complaint driven tree management system.

Our objective is to have an urban forest with continuous cover of mixed age and mixed species. To achieve this we will actively manage trees growing on Council land. This will involve felling, pruning and planting trees.

TREE FELLING

Fingal County Council will avoid felling trees unless it is absolutely necessary. Each case will be carefully judged on its merits. Tree felling will not be permitted for individual trees unless there is very clear justification for the work. Replacement trees will normally be planted though not always in the exact same location.

The following are situations where felling is essential or advisable.

A dead, dying or defective tree that poses a serious risk to public safety.



A tree causing an obstruction to a public road or footpath, where the obstruction cannot be overcome by pruning the tree or other reasonable measures. This can arise when road junctions are being improved and established trees will obscure sightlines at the new junction

A tree which is shown to be contributing to serious structural damage to buildings and where pruning alone would not provide a solution. Damage to walls or footpaths is generally relatively minor and removal of the tree would not necessarily be acceptable. Where a tree is heaving a footpath in no case will a tree be removed unless the tree has contributed to the damage and is likely to continue to do so even if the footpath is repaired or replaced. Where there is the possibility of a claim against the Council complaints of structural damage will always be investigated. Private property owners will be expected to provide proof that a particular tree is causing damage to the property before felling will be considered.

Homeowners sometimes claim that trees growing on public land are causing subsidence. For subsidence to be a problem the following conditions must be met

- The soil type is a shrinkable clay
- The tree is a high water demand tree growing in close proximity to a structure
- There is a drought

We are unaware of these conditions ever being met in Fingal where our soils do not have shrinkable clays with greater than 38% clay content and droughts are very rare.

Trees which are clearly of a size and species inappropriate to their situation. Examples of inappropriate trees would be large poplars, willows or conifers close to walls and large forest trees which extend over a house and have recognised defects.

Street trees growing within 7 metres of a public light standard as the Public Lighting Section has stated that a separation of 5 metres between the lighting standard and the outside of the crown is required for the lighting to work as designed. The Council will not plant street trees within 7 metres of a public light standard but has taken in charge many streets with trees where this is the case. In time the trees will block the light and lead to security concerns for residents. When pruned many species grow back strongly and the Council is not in a position to prune such trees every few years. Felling will be considered when such problems arise particularly for trees within 5 metres of a public light standard.

Situations where pruning has been tried to rectify a severe problem and has not been successful. A tree may be preventing essential repairs to property. Trees can sometimes be used to gain criminal access. Felling in these cases will only be considered as a last resort.

Thinning of woodland in accordance with a Management Plan. This work is usually essential during the establishment period to reduce the number of young trees in a plantation or group. This is done gradually as the trees grow bigger, allowing the best trees to flourish and encouraging healthy growth and development. Sometimes tree removal from mature stands may be necessary for the same reason.

Removal to allow approved development or redevelopment and as conditioned by planning permission. It may sometimes be necessary to fell trees to carry out approved development work on Council property. Where planning permission allows tree felling to take place this will be in strict accordance with planning conditions and the protection of trees conditioned for retention. Every effort will be made to retain trees on development sites in accordance with current planning guidance.

Trees blocking daylight from habitable rooms to a severe and unreasonable degree. It should be noted that where this arises it is often because the original planting was inappropriate or not well thought out. These situations are a valuable learning tool in the development of planting policies and species selection.

Treatment of arisings

Felled street trees and pruning arisings will normally be chipped and used as mulch in local planting schemes.

Where trees are felled or vegetation is pruned on public open space the chips will normally be spread as a mulch on site.

Both fallen and standing deadwood provide habitat for some rare and threatened invertebrates and other species. Whenever possible logs and trunks will be retained on site and allowed to decay naturally. In some cases the fallen logs will be cut into seats.

In woodland areas standing deadwood will be retained subject to a risk assessment. Informal paths will be moved or standing deadwood zoned off to allow its retention.

Monoliths are the still standing trunks and sometimes the lower crown of trees that have been crown reduced naturally or for safety reasons. Monoliths of native species such as oak and ash have significant wildlife values and wherever possible trees will be reduced to monoliths rather than felled. Wildlife values are much reduced or non-existent on introduced species and in these cases felling and retention of fallen deadwood will be favoured over crown reduction and retention of monoliths.

TREE PRUNING

Pruning should not be carried out if it is not necessary since any cutting can weaken the tree and allow decay organisms to enter exposed and vulnerable tissue. Pruning of a healthy tree will usually cause it to respond by producing vigorous new growth. In certain species the harder the pruning then the more vigorous will be the re-growth. Older trees do not tolerate pruning as well as younger ones and substantial pruning can be very damaging particularly in species which are not naturally tolerant of cutting e.g. beech.

Tree pruning will not be carried out where the tree is of high amenity value and there is no justification for the work. Work requests from the public will not be entertained if a tree has been inspected or pruned during the previous 3 years, unless there are special circumstances.

The following are situations where pruning works are likely to be essential or advisable:

- A tree with branches or twigs causing an obstruction on a public road or footpath. Generally a minimum stem clearance of 2 metres will be maintained in pedestrian areas.
- A tree causing a legal nuisance to an adjoining property.
- A tree that may be contributing to structural damage to adjacent buildings or other built features, where it is felt that it is appropriate to restrict the size of the tree.

- Trees restricting repairs and maintenance of property, or authorised construction work.
- Trees blocking daylight from habitable rooms to a severe and unreasonable degree.
- Trees giving rise to justifiable fears about the risk of crime or trees which have provided access and/or cover for criminal acts, vandalism and harassment of local residents. For trees this can often be done through crown lifting. Small trees in shrub beds are more difficult to deal with but in most cases pruning or removal of the shrubs will resolve the situation.
- Trees physically in contact with buildings and roofs.
- Trees close to and growing over walls and fences.
- Trees growing close to and likely to obstruct or interfere with street lighting and other services equipment.
- Trees obstructing highway and other signage or likely to do so.
- Trees obscuring sight lines at road junctions and accesses.
- Trees obstructing essential CCTV surveillance cameras or likely to do so. Trees adjacent to CCTV cameras that monitor ATMs or within the field of view being covered must be pruned to ensure that public security is not compromised.
- Trees which need formative pruning to shape or train them during the early years.
- Removal of dead or diseased material or to remedy storm damage or mutilation, to make the tree safe, or to shape and balance the crown. We will take particular care with veteran or historic trees that may become unsafe due to their age. Pruning will often enable us to retain a veteran tree.
- Brushing, coppicing or similar silvicultural operations to maintain or develop woodland in accordance with a management plan.
- Removal of root suckers growing at the base of street trees.
- Removal of epicormic growths

The following reasons are **NOT** considered valid for the removal or pruning of a street tree:

- Leaf drop (into gutters and downpipes, lawns, roads etc)
- To improve street lighting overspill onto private property
- To enhance views
- To reduce shade created by a tree (exceptions noted above)
- To reduce fruit, honeydew or bird droppings on cars, driveways, clotheslines etc
- Minor (less than 10mm vertical displacement) heaving of driveways and paths on private property by roots of Council owned trees.

ACCEPTABLE TYPES OF PRUNING FOR TREES

For most trees requiring pruning one of the following, or a combination will be suitable.

Pruning should not remove more than 20% of the canopy at any one time.

Crown Thinning - This reduces the density of the tree's crown without changing the shape and form of the tree. Thinning reduces the amount of foliage and allows more light through the canopy or crown. This may be done on trees with light foliage that throws dappled shade but is not recommended for trees casting dense shade where the amount of thinning needed to alleviate the shading would be greater than 20% of the canopy.

Crown Lifting - This essentially means pruning off lower limbs close to the trunk to give more clear space below the crown. This will generally be done to maintain 2 metres clear space below the crown in pedestrian areas or footpaths. Where trees may be obscuring sightlines or CCTV cover crown lifting may be carried out to heights up to 4 metres.

In situations where street trees are blocking light to front or back gardens crowns may be lifted to a greater height but never so that the trunk diameter: Tree height ratio is greater than 30:1. This will only be done as an alternative to felling.

Crown Reduction - The tree crown is reduced by shortening branches, usually carried out all round the crown or canopy to maintain a balanced shape.

- Useful for preventing branches contacting buildings, roofs and guttering
- Prevents branches obstructing street signs, lighting and striking high vehicles

PRUNING OPERATIONS FOR EXCEPTIONAL CIRCUMSTANCES

• **Root Pruning** - Cutting tree roots is highly undesirable and can affect the health and safety of a tree. Root pruning is a very specialised operation that should only be undertaken with the support and supervision of a qualified arboriculturalist. Pruning of buttress or other major roots can make the tree unstable. There are strict guidelines relating to severance of tree roots and the Council will not accept severing of roots over 10mm in diameter by Council workers, statutory undertakers or developers when excavating near trees. Severance of more than 30% of a tree's root system is quite likely to cause slow dieback and eventual death of a mature tree.

• **Lopping** - This is not a sound arboricultural practice and will rarely if ever be carried out by or on behalf of the Council. Where it is necessary e.g. to allow minimum safe clearance to ESB lines the branch should be taken off close to the trunk. Limbs should never be lopped at a half way point with a short stub or a snag left on the tree.

• **Pollarding** - This involves pruning all the branches from a tree at a certain height, usually between 2 and 5 metres above ground level. Since ancient times pollarding has been a traditional method for cutting timber and then allowing re-growth. It should normally be commenced when the tree is still young and then repeated at regular intervals through the life of the tree. It is now essentially a method of controlling the growth of the tree and to restrict the size of its crown. Pollarding is traditional in some areas and for certain species such as London Plane trees in the Dublin City Council area. The high

labour demand to maintain pollards means the use of this technique will be limited in Fingal.

- **Coppicing** – the tree is cut back close to ground level to promote growth of multiple stems from at or just above ground level. Originally used to produce poles, charcoal or bark for tanning it has a place for controlling willow planted to stabilise river banks or hazel planted by motorways or distributor roads or at woodland edges. Coppicing may sometimes be used to rejuvenate old hedgerows but hedge laying is the preferred solution.

Pruning carried out by the ESB, Dublin Bus and other entities

The ESB is responsible for power transmission and has rights and responsibilities defined by statute. Line clearance to maintain up to 2 metres between vegetation and LV lines is carried out by the ESB. The result is often ugly with trees pruned into a **Y** shape or with large holes pruned through the crown. The choice is often this result or the removal of the tree. In the absence of other problems the Council will favour the retention of the tree. In future plantings more attention will be paid to species selection in proximity to overhead services.



TREE PLANTING

Species and varieties for planting will be selected from the Council's approved species list for various site types (Appendix A).

Species and varieties will be selected to meet the requirements of the 30:20:10 rule (no more than 30% of trees from any one family, 20% from a single genus or 10% from a single species) and to correct imbalances or over reliance on certain genera or species in the existing stock.

Street trees will generally be planted as standard trees as soon as possible after delivery from the nursery.

The Council will continue to use bare root stock but will test and carry out a cost benefit analysis on the use of spring ring and cell grown stock.

Trees planted on public open space will be a mixture of transplants and whips but with a certain % of standard trees to provide some immediate visual impact.

Trees planted in woodland schemes will normally be 60-90cm high transplants.

Native trees will be favoured in woodland schemes and on larger open spaces. A programme to increase the planting of large canopy forest type trees on class 2 and class 3 public open space will be established to compensate for any loss in canopy cover due to changes in species selected for street tree planting.

Tree Stakes, Tree Guards and Protective Fencing

When trees are planted as whips or small transplants there is rarely any need to stake or support the tree. However when standard trees are planted they need support until root growth is sufficient to anchor the tree properly. In open ground a stake is normally only required for the first year or two. If root growth in that time is not sufficient to anchor properly there is another problem to be resolved. With street trees the soil is often so poor that stakes are required for a longer period and the stakes are also used to support anti-vandal tree guards.

All standard street trees will be staked with 75-85mm round tree stakes to a height of at least 1.8 metres.

H frame stakes will be used where considered more appropriate.

Tree stakes will always be placed on the windward (south west) side of the tree.

Use of 2.4 metre high stakes with 3 ties will be considered where vandalism risks are particularly high.

2 tree ties will normally be put on each tree. The current practice of using ties that split apart as the tree grows will be continued. If/when the Council has demonstrated that planned tree work programmes are able to ensure all ties are removed or loosened on a timely basis the Council will consider reverting to the traditional (and cheaper) ties that do not split apart as the tree grows.

Spacers will always be used with tree ties.

Trees with stakes will be inspected annually until the stake is no longer needed and removed to prevent the stake damaging the tree



Tree guards will be of weldmesh type rather than expanded metal mesh.
Tree guards will be hot dipped galvanised.
Tree guards will be attached to a tree stake so that there is 200mm free space at the bottom of the guard to avoid any build up of litter within the guard.
Tree guards will be placed so that there is no rubbing of branches against the guard.

Tree guards and tree stakes will be removed as soon as possible. In some areas where there is a known risk of bark stripping guards may be retained until the tree has grown quite large.

Protective fencing, usually 1.2 metre high sheep fence, will be placed around some shrub and tree plantings to protect the planting during the establishment period. This fencing will not be retained around established plantings.

Tree wells will be maintained vegetation free where the Council maintains the turf grass around a street tree. This will normally be done through the use of herbicides.

Where grassed verges are maintained by residents or businesses there is a risk that the tree may be damaged by mowers and strimmers. The Council will advise residents on how to avoid this problem on its website.

Provision of bedding plants in raised beds around the base of trees is not a sound practice as the bark of the tree trunk is not waterproof and this may lead to decay of the trunk. Residents will be discouraged from this practice... The council will post information on this topic on its website.

Tree Issues & Proposed Actions

In this section some far reaching changes in tree policy are proposed. The proposed changes have come from years of dealing with customer demands for felling, planting or pruning, the latest information available on urban tree management and analysis of our tree database which has provided us with reliable information for the first time regarding what our street tree stock is comprised of. In all cases we have attempted to deal with the reality as we find it on the ground and not what we hoped would be the case. The recommendations are designed to deal with the problem, lead to a positive outcome and increase the amount of tree cover in our urban forest. Our goal is always 'Right Tree Right Place' with a continuous cover urban forest with trees of mixed age and mixed species.

This continuous cover urban forest must be managed to be continuously renewed and this means active management through felling of trees, pruning, replacement and planting. Things that make sense in a forest context can, and do, lead to local controversy as most people think of urban trees on an individual basis. An example of this would be a blanket recommendation to remove and not replace street trees within 7 metres of a public light standards – it might make sense on a county wide basis to get full value from our trees and street lighting investment but not always to the individuals whose homes overlook the tree.

1 Shade

At this latitude at noon in mid summer a tree will cast a shadow equal in length to 70% of its height. By 8pm in midsummer the shadow is about three times the height of the tree. At noon in mid winter the shadow will be about 4 times the height of the tree.

In both the UK and Ireland an emerging body of research is confirming what arborists and arboriculturalists have known for some time i.e. residents especially value afternoon and evening sun shining into their gardens and houses. Dense shade is a common reason why residents request tree pruning, lopping and topping, felling and replacement with smaller species or varieties.

The table below gives an indication of shadow length and area at various times of the day for different sized trees on mid summers day and the autumnal equinox. A typical back garden is 11 metres deep. At 8pm on June 21st a 15 metre tree will cast a shadow 64 metres long or 4 times the height of the tree. The site and the tree type must be matched to take account of the shadow pattern of the tree both for street trees and for trees planted in parks and on open spaces. Failure to do this will result in demands for pruning and /or felling/replacement before the tree reached mature size. This is a wasted opportunity for urban dwellers to experience large canopy trees but is also an expensive way to manage trees in that larger trees are more difficult and expensive to manage.

Shadow cast by trees

Calculated using software developed by Tree Tech Consulting

Date	Time	Tree Height m	Tree spread m	Shadow length m	Shadow area sq. m.
21/06/2009	1:00 PM	6	3	4.0	9.6
21/06/2009	5:00 PM	6	3	6.7	16.4
21/06/2009	8:00 PM	6	3	20.3	49.5
21/09/2009	1:00 PM	6	3	7.4	18.1
21/09/2009	5:00 PM	6	3	12.7	30.9
21/09/2009	7:00 PM	6	3	63.8	155.2
21/06/2009	1:00 PM	9	4.5	6.5	23.5
21/06/2009	5:00 PM	9	4.5	11.2	40.9
21/06/2009	8:00 PM	9	4.5	34.5	126.1
21/09/2009	1:00 PM	9	4.5	12.5	45.4
21/09/2009	5:00 PM	9	4.5	21.5	78.3
21/09/2009	7:00 PM	9	4.5	109.1	398.0
21/06/2009	1:00 PM	12	7.2	7.2	42.0
21/06/2009	5:00 PM	12	7.2	16.3	95.2
21/06/2009	8:00 PM	12	7.2	49.4	288.2
21/09/2009	1:00 PM	12	7.2	18.0	105.4
21/09/2009	5:00 PM	12	7.2	30.8	179.8
21/09/2009	7:00 PM	12	7.2	154.9	904.5
21/06/2009	1:00 PM	15	10.8	10.8	94.6
21/06/2009	5:00 PM	15	10.8	21.8	191.3
21/06/2009	8:00 PM	15	10.8	64.6	565.9
21/09/2009	1:00 PM	15	10.8	24.1	211.0
21/09/2009	5:00 PM	15	10.8	40.6	355.5
21/09/2009	7:00 PM	15	10.8	201.2	1,762.2

High hedges deserve particular mention. This generally refers to Leyland and Monterey cypress hedges. Both grow rapidly and want to grow to well over 20 metres in height if conditions are suitable. Monterey cypress have grown to 40 metres in Co. Cork. In the UK the High Hedges Bill provides a means for assessing hedges and enforcing compliance to an agreed standard. There is no such legislation in Ireland. Disputes between neighbours should be settled amicably and there is no role for the council in settling such disputes. The council strongly advises residents not to plant hedges of Leyland or Monterey cypress.

In the UK there is a mathematical model for calculating 'acceptable' hedge height and the council will use this in assessing whether a shadow pattern is unacceptable.

Proposal for new plantings

- We will not plant large canopy trees within a distance equal to twice their maximum potential height on the south or west side of private dwellings. This will minimise or eliminate afternoon and evening shade problems.
- Where we plant trees on roadsides or on open space close to dwellings on the south or western side of the property we will select small canopy trees or trees that cast dappled as opposed to dense shade.
- We will develop lists of tree species and varieties suitable for various locations and adhere to this listing in all of our own planting. This list will be reviewed annually prior to tendering for tree supply.
- Developers will be required only to plant trees from the approved lists appropriate to the location.

Proposal for existing trees unsuitable to location because of shade

- Trees will be retained unless there are particular problems or persistent requests from nearby residents for action due to the shading of habitable rooms to an unacceptable degree.
- Where shading is considered unacceptable crowns will be lifted, thinned or reduced (topped). Crown reduction of the type being referred to here is not good for the tree and will certainly reduce the expected useful life of the tree. Certain species e.g. beech, do not tolerate such works.
- If the frequency or difficulty/cost of these works is unsustainable the council will consider replacing the tree.
- If the trees are presenting other problems e.g. heaving footpaths or trip hazards, the trees will be felled and replaced with small canopy trees or at a distance from the dwelling to avoid the same problem recurring.
- Requests for this type of action to open up or preserve views will not be entertained.
- Where the offending tree is a mature oak or other native large canopy tree free from defects and with good wildlife values the tree will be not be topped but in all cases retained.

2 Trees in Conflict with the Built Environment

There are occasional requests to remove trees where the canopy is touching a building or damaging a roof but by far the greatest conflict we deal with is the uplifting of footpaths by street trees. There have been 28 compensation claims for trips settled since 2006 with another 75 still proceeding. Claims are county wide but concentrated in established areas where the trees are larger and the population older. 95% of claimants are over 70 years of age and are overwhelmingly female. This is unacceptable.



Sutton Park, Dublin 13

Roadside trees are typically planted in 1 cubic metre tree pits in concrete or tarmac paths or in grassed roadside margins 0.75 – 2.5 metres wide. These margins are often quite shallow. Trees typically need about 1 cubic metre of rooting volume per square metre of canopy. We have calculated a typical 1 metre wide roadside verge in a semi-detached estate as providing a rooting volume of 6 cubic metres at best. A tree with a crown diameter of 4 metres needs 12 cubic metres of rooting volume. The road carriageway is usually so heavily compacted that tree roots cannot grow under the road but they can, and do, grow under the footpath. Here they may find water and oxygen but generally few nutrients. The larger trees will then send their roots under garden walls (foundations usually 300mm or less deep) and then root in the garden.

Vigorous large canopy trees quickly outgrow tree pits or narrow margins. In time the roots increase in size, crack and heave footpaths producing trip hazards or undermine garden walls leading to cracks and sometimes failure of the wall. Where a footpath is repaired the problem often recurs in a relatively short period. If a root is cut or the top shaved off to allow the path to be laid callus or bast tissue is rapidly formed leading to heaving and cracking of the repaired path much more quickly than happened initially, typically in a few years. It is quite common for the footpath to heave and again present a trip hazard within 5 years. The Council is committed to the goal of eliminating trip hazards greater than 10mm to comply with the Barcelona Convention and the Transportation Department has a programme for footpath repair and replacement. The cost of footpath replacement is approximately €100 per square metre and a typical 12 metre section would be replaced for a total cost of €1,200.



Sutton Park, Dublin 13

We know that the trees heaving footpaths in Fingal are generally Norway maples and sycamores with a diameter at breast height (DBH) greater than 20cm. Norway maple and sycamore account for almost 40% of our street tree stock and trees of this size also generate requests to prune or top the trees. The people seeking this work often state that the tree is too big, shades gardens or habitable rooms to an unacceptable degree or they fear it will fail in a storm and cause property damage.

We have over 15,000 Norway maples in our street tree stock and over 9,000 of these are less than 20cm in diameter. We know the trees will damage most footpaths before the tree is 30 years old while footpaths can be expected to last at least 40 years. This means that when these trees eventually damage footpaths and to comply with the goal of eliminating trip hazards over 10mm the cost of early path replacement is of the order of €2 million. Something must be done.

Proposal for new plantings

- A list of small and large canopy trees appropriate to various situations and verge widths has been prepared and will be used to select species/varieties appropriate to various situations and widths of grassed roadside margins. These lists will be reviewed annually and updated as we test other species and varieties.
- We will only plant smaller canopy trees in tree pits in concrete or tarmac paths or grassed roadside verges less than 2.4 metres wide.
- In new developments we will encourage the provision of wide (→2.4 m) roadside verges on distributor roads to support large canopy trees.

- In new developments we will encourage the provision of a minimum of 0.5 metres of good topsoil.
- Large canopy trees will only be planted close to buildings or in areas with a lot of pedestrian traffic where adequate rooting volume has been provided using techniques such as underground cell reinforcement.
- Expensive constructed tree pits will only be used in high profile areas where the streetscape is being significantly improved and the tree pits can be constructed as part of the improvement works subject to the cost relative to the overall cost of the scheme being considered acceptable.
- Large canopy trees will be planted in local and neighbourhood parks as a compensatory measure to ensure there is no loss of tree cover or reductions in large canopy tree cover as a result of these changes
- Developers will be required to plant according to the same principles used by the council.

Proposal for existing trees

- Where there are existing large canopy roadside trees causing problems we will deal with each tree on a case by case basis
- In areas of high pedestrian traffic we will proactively address footpath problems in cooperation with the Transportation Department. Various engineering solutions, recommended internationally, will be tested but it must be accepted that expensive engineering solutions can only be used in high traffic areas where the trees are of particular value and significance.
- Where we identify uplifting of the footpath as a problem the Transportation Department and the Parks Division will work together so that tree works are carried out at the same time as footpath repairs.
- If the footpath is being replaced we will inspect the roots when the old path is broken out and retain the tree where the cost of specialised engineering solutions can be justified relative to the level of pedestrian use and the expected life of the solution.
- Where the engineering solutions are considered too costly relative to the value of the tree, the tree will be felled and replaced with a small canopy tree unless the site is deemed unsuitable for tree planting e.g. overhead services, traffic sightlines and public light standards within 7 metres.
- It must be accepted that these changes will take decades to work through the entire street tree stock and there is a potential for a loss of large canopy trees in the urban forest. For this reason the removal of potentially problem trees should lag behind new plantings by 5-10 years. However safety concerns will be dealt with as a priority.



Hilltown Grove, Swords, February 2007.



Hilltown Grove, Swords, February 2007

The top tree was blown over in a freak storm but that a deciduous tree could be blown over so easily in this location is worth noting. On the same day 200 hundred metres away a Leyland cypress also blew over and took the footpath with it.

3 Trees blocking light from public light standards

The Public Lighting Section of the council has stated that a minimum clearance of 5 metres to the outside of the crown is required for street lighting to perform as designed. Allowing for a crown diameter of 4 metres this means we should not be planting trees within 7 metres of a public light standard.

Trees planted close to public light standards often block the light and this can lead to security concerns for residents and visitors and demands for pruning

or removal of the tree. Pruning will often cause the tree to grow back strongly and the operation may be needed every 3 or 4 years. If the tree is quite close to the light standard the pruning will disfigure the tree and, as Alex Shigo says, trees have dignity too.

Another way to manage these trees is to crown lift to over 4 metres so that the crowns are over the street lights. Roselawn Road in Castleknock or Bayside in Sutton are good examples where street trees are at or approaching this stage. In both of these areas there are persistent demands from some residents for action. In both of these areas we have a lot of Norway maples or Sycamores which are lifting footpaths and causing complaints about shade.

Proposal for New Plantings

- In typical housing estates we will not plant a street tree in a section of roadside verge where there is a public light standard. We will require developers of new estates to adhere to this policy. This refers to the typical semi-detached estate where verges are about 12 metres long and 1-1.5 metres wide.
- Where a street tree is removed a replacement will not be planted in the same section of roadside verge where there is a public light standard
- On continuous roadside verges small canopy street trees will not be planted within 7 metres of a public light standard or 10 metres for large canopy trees.

Proposal for existing trees

- Pruning will only be considered where the tree is at least 5 metres from the public light standard and where the pruning works will not unduly disfigure the tree.
- If a large canopy tree is growing within 10 metres of a public light standard leading to security concerns for local residents we will remove the tree and not replace it if pruning is not considered practicable.
- If a small canopy tree is growing within 7 metres of a public light standard leading to security concerns for local residents we will remove the tree and not replace it if pruning is not considered practicable. We will define small canopy trees as those in our tree list marked as suitable for verges less than 2 metres wide.
- Over the 5 years 2011 – 2016 all trees within 5 metres of a public light standard will be removed and not replaced.
- We will not replace, or retain long term, trees in a section of roadside verge or footpath where there is a public light standard within 7-10 metres.

4 Low Survival of Planted trees

Research in the UK has found that the failure rate for street trees plantings is 75% (Trees in Towns II) and that the average life span was 40 years in Sheffield. In the 1970's over a million trees were planted in London and today less than half of these trees have survived. Our own experience would broadly agree with these findings though we do not have reliable data to confirm this. We have traditionally used bare root stock, which is relatively cheap, but there are concerns that low survival rates are due to drying of roots during transport and storage and consequent weak establishment and root growth prior to transpiration pressure in Spring. Bare root trees will lose 80% of their roots when lifted and need time to replace these roots before the onset of transpiration pressure in the spring.

Container grown trees or Spring Ring trees are much more expensive but may establish and survive better in the hostile urban environment if handled appropriately during transport and storage. Other factors contributing to loss of trees include lack of maintenance e.g. watering, removal of ties, formative pruning in the early years of growth. The unsuitability of planting locations, particularly in relation to soil type, is another major factor in the loss of street trees.

Proposal

- Bare root stock will be planted as soon as possible after delivery, preferably before Christmas, in each winter planting season.
- Current procedures for inspecting trees at delivery and the care of trees in the holding nursery will be reviewed and improved where found inadequate
- Use of container grown trees rather than bare root stock will be tested and a cost benefit analysis carried out to see if the extra cost can be justified.
- As trees are planted and surveyed we will schedule tree works to improve the care of trees in the first few years after planting and thereby increase survival rates and the useful life expectancy of our street trees. It is likely that newly planted trees will require a maintenance visit every year for the first 3-5 years after transplanting.

5 Limited range of planting stock used

In Fingal 30% of street trees are from the genus Sorbus (Rowan, Whitebeam) and over 40% from the genus Acer (Sycamore and maples). This leaves our street tree stock susceptible to severe outbreaks of plant disease or insect pests. In 2007 the council had to fell approximately 1,000 rowan and whitebeam due to an outbreak of fireblight in some cases removing virtually all the street trees from some estates. The 30:20:10 rule (Frank Santamour of the US National Arboretum) would require that we plant no more than 30% from any one family, 20% from any one genus and 10% from any one species or variety.

The city of Lansing,

Michigan has a diversification policy that states: "No tree will be planted next to a tree of the same species and at least four genera will be planted on a street."

Ireland has a relatively small number of native trees due to the land bridge to Europe being cut at an early date and the north-westward march of species made more difficult. A big advantage of native trees is that they are integrated into the landscape with a large number of other species living on and dependent on them - often referred to as wildlife value. Many exotic trees have relatively few other species growing on and dependent on them and therefore have low wildlife or biodiversity values.

Another emerging issue is the use of native species but propagated in Europe from non-native stock and grown on in Ireland. This is contributing to a loss of native genetic material even though we might be planting species native to Ireland.

We do not know what effect climate change will have on our native trees. In the UK a loss of beech in the south east has already been noticed but it is extremely difficult to predict what will happen in Ireland with some climate scientists expecting only minor changes to the climate in the Fingal area. Recently the Forestry Commission in the UK changed its position regarding non native trees and provenances from more southerly parts of Europe and stated that there was a need to test exotic species and provenances.

The current Irish climate is suitable for a much larger range of trees than are native. Many members of the public regard sycamore and beech as native. Sycamore probably came to the British Isles with the Romans and beech was introduced to Ireland by the Normans. Scots pine is officially regarded as native. Though it was native thousands of years ago it became extinct and was reintroduced.

In Ireland we are blessed with a climate that will allow many exotic species to flourish but as a result of our island status we have a limited flora in comparison to the UK and areas of mainland Europe with similar growing conditions. Research in the UK has found a wide range of uncommon and rare species and varieties growing on public land that were planted many years ago and called for greater effort to plant and grow these varieties and species on public land.

Use of fruit and nut trees deserves special mention. Tree fruits are often used by children as ammunition for catapults (rowan berries) or thrown around the place or at cars and people (crab apples and pears). For this reason our use of crab apples is limited to varieties that do not fruit (we also seek resistance to scab disease) and use of pear is also limited. However we have significant fruit collections in the regional parks. The native hazel cannot be relied on to fruit every year but we use it a lot in woodland and bank planting. Turkish hazel (the source of commercial hazelnuts) is on our list of species for wider roadside verges and open space.

Proposal

- We will apply the 30:20:10 rule for all of our planting in both open space and roadsides in urban areas. This may mean that our street trees

alone might not meet this rule but we will meet the rule for all trees planted on publicly owned land in an area and every attempt will be made to meet the rule in street tree plantings.

- Except for situations where we actively want the avenue effect with trees of the same age and species we will plant at least 4 genera on every street.
- We will use exotic species in our planting mix in urban areas and selected coastal locations.
- We will actively promote the growing of as wide a range of trees as possible on public land.
- We will use only native species for woodland and hedgerow planting and in plantings in the rural parts of Fingal.
- We will emphasise use of species in an area named after trees e.g Birch road will have a lot of birch trees, Aspen Drive aspen trees etc.
- Every estate deserves a conker tree

6 Anti-social Activity and Woody Vegetation

Woody vegetation includes trees and shrubs and climbers that form a woody stem.. Twenty years ago it was our practice to plant trees and shrubs on the perimeter of open space providing an open space with limited views of the built environment like a natural haven within the urban area. In many areas shrubberies and brush provide cover for anti-social elements and behaviour that is totally unacceptable to residents and is the most common reason for requests to prune back shrubberies and heavily planted areas.

Existing hedgerows on green field sites are often conditioned by planning permission for retention on the public open space. The wildlife values of hedgerows are high particularly if the herb layer is intact around the hedge. When taken in charge the hedges are usually in an overgrown and neglected condition and provide cover for anti-social elements and in turn demands for the removal of the hedgerows by nearby residents.

Laying a hedge is an old technique where the stems are partially cut through and laid along the ground and the (lateral) buds burst and grow upright. The operation is repeated every 10 years or so. In the intervening years the hedge can be trimmed or flailed to keep it under control. Laying is very labour intensive and productivity of 10 linear metres can be achieved by trained and experienced workers. Coppicing the hedges (cutting down to the base and growth from the stools) can rejuvenate a hedge but laying is a better long term option.

Another problem with retained hedgerows occurs when the hedge line approximates the boundary between back gardens. This is sometimes done deliberately to retain the hedge and the hedge-line defines the boundary between plots. The developer or householder then builds a wall a metre or so away from the hedge to ensure the hedge is retained. Without links to green

areas the wildlife values of the hedge become much less but the more serious problem is that the hedge is now in a no-mans land, is not managed and may become a site for anti-social activity. In time when the hedge becomes overgrown and dangerous access becomes difficult and assigning responsibility for the hedge a cause of friction between neighbours.

In the past the council often planted shrubs around the perimeter of open spaces, as under storey under large growing trees and in beds at entrances to estates and on open spaces. These shrubs were often large growing types unsuitable for small gardens and provided flower and interest on the open space. Demands for hard pruning and/or removal of the shrubberies are often made because of litter and anti-social activity. In some cases vigorously growing shrubs have had a negative impact on the establishment of trees and tree groups. The council does not have the labour resource to prune hard so many shrubberies every few years. The Gardai have assisted the council in selecting vegetated areas causing most problems and it is intended to continue to work with the Gardai to prioritise shrubbery for removal. Overgrown shrubs on open space and in private gardens can also obstruct footpaths. The council will maintain vegetation to avoid this problem and private landowners will be expected to maintain their shrubs to avoid such problems.

Proposals

- Review hedge retention policies with the Planning Department particularly regarding location and future management/problems.
- Trim hedgerows on public open space annually to avoid overgrowth providing cover for anti-social elements.
- Preserve the herb layer for a distance of 5 metres each side of all hedges wherever practicable.
- Where overgrown hedges or shrubs on private land obstruct footpaths the Transportation Department will be requested to issue orders under the Roads Act 1994 compelling the landowner to maintain the hedge so that it does not obstruct footpaths or otherwise inconvenience road users.
- Grub out rather than prune shrubberies that are subject to repeat demands for hard pruning over the 5 year period 2011-2016.
- We will not plant large growing shrubs within 4 metres of a public footpaths to avoid overgrowth onto footpaths or security concerns.
- Plant shrubs that grow less than 1 metre in height in areas where larger growing shrubs will lead to problems.
- Where exposed garden walls are vulnerable to graffiti we will plant ivy or other self supporting climbers by these walls so long as the wall is free standing and not part of a larger structure
- Shrubbery for removal will be prioritised with the assistance of the Gardai and Joint Policing Forums.

- As a minimum standard street trees will be planted as standard trees (girth 10-12cm) and the bottom 2 metres of trunk maintained free of side growth.
- On environmental open space and in local and neighbourhood parks we may plant trees as standards, as transplants 60-120cm high or a mixture of these. When planted as transplants or whips the trees will be pruned as they grow to remove lower branches and to maintain visibility into the planting as soon as is practicable.

7 Scheduling of tree works

Traditionally we have carried out the vast majority of tree works in the winter season using the same staff that cut grass during the summer months. This suited our labour availability but is not ideal for tree health. With the growing season lengthening and other demands on labour during the winter increasing our ability to complete all necessary tree works has been reduced. This has resulted in our works programme becoming demand led and necessary routine maintenance works delayed or neglected and a considerable backlog of work has built up.

Phenological research indicates that the best time to prune trees is in the summer after full leaf out and before senescence. Pruning works should not be carried out between the onset of growth and full leaf expansion or at leaf senescence. The Wildlife Act prohibits cutting of vegetation on uncultivated lands between March 1st and August 31st each year. National Parks and Wildlife has stated that it has no difficulty regarding street trees as cultivated but not hedgerows or evergreen trees. This would allow the council to carry out street tree pruning during the summer months.

Proposal

- Tree works on street trees will be carried out all year round except for the period during leaf out and between leaf senescence and full dormancy. At these times we will concentrate on felling, stump grinding and the maintenance of stakes, ties and tree guards.
- We will use our tree management software to schedule regular inspections and to manage our tree work operations.
- We will respond to all requests for tree works by referring to the tree inspection record and the council's tree strategy.
- We will respond within 14 days of receipt of a works request from the public. If an on site inspection is considered necessary the results of this inspection will be available within 21 days.
- Works will be carried out area by area in a systematic way until the backlog of works is cleared.
- When backlogs have been cleared we will consider works requests from the public for additional works bearing in mind the council's tree strategy and this guide. In all cases members of the public will be

informed within 21 days if the works will be carried out and works will be completed within 2 months with the exception of the periods of leaf out and leaf fall or unless prohibited by the Wildlife Act.

- Winter works will comprise mainly of planting, hedge trimming, pruning/removal of understorey vegetation and pruning/removal of shrubberies.

8 Crown Lifting

Standard trees are grown with a clear stem to about 2 metres and all branches below this height are removed as the tree grows. This prevents pedestrians being struck by low growing branches. There are some exceptions to this e.g. hornbeam where the trees are often grown feathered to the ground. In town centres and in shopping areas where there is CCTV cover branches below 3-4 metres can block the cover of the CCTV and there is a need to crown lift to 3-4 metres. Another option is to grow fastigate (narrow growing, columnar trees) in town centres or along roads where there is a lot of bus or heavy vehicle traffic.

On public open space crown lifting trees to 2 metres allows views into and through tree groups and this passive supervision discourages anti-social behaviour.

Proposal

- We will maintain all street trees with a clear stem to 2 metres and remove any branches that hang down below this height.
- Where feathered trees are planted the side branches will be retained so long as they do not obstruct pedestrian traffic.
- In town centres or other areas where trees block the coverage of CCTV, trees will have their crowns lifted to a height where they do not block the cover of CCTV.
- We will avoid planting large crowned trees along bus routes or roads where there is a significant amount of HGV traffic and will favour fastigate trees in these situations.
- In parks and on public open space trees will be crown lifted to 2 metres as soon as is practicable and understory maintained below 1 metre.

9 Large Canopy Forest Trees and Their Place in the Urban Environment

It has been noted in the UK that there has been a loss of large canopy tree cover in urban areas and this has been attributed to a fear of litigation due to a perception that large canopy trees are more likely to be in conflict with the built environment. This is understandable but it is our responsibility to find niches within the urban environment where large canopy trees can be grown

without conflict with the built environment. In warmer climates the shade cast by trees is valued by the public but up to now that is not the case in Ireland. This may change if some predictions regarding global warming are correct. In addition the carbon sequestered by large canopy trees is much greater than is the case with smaller canopy trees.

A Norway maple can live 160 years and grow to over 20 metres in height. If planted as a roadside tree in a narrow grassed margin it will begin to be in conflict with the built environment by the time it is 30 years old. The question arises as to why we are planting trees that want to grow to 160 years old and then removing them before they are 60 years old. Most of our tree problems can be summed up as 'wrong tree: wrong place'. Though there may be a need for public education regarding the place of trees in our urban environment greater care in tree selection and matching the tree to the location will allow large canopy trees to survive and even thrive in the urban environment.

We appear to be wedded to the idea of large trees planted as avenues somewhat like the entrance avenues to large old country houses where the trees had lots of good soil to root into. Shigo has stated that if roadside planting strips are at least 8 foot (2.4metres) wide there will be few problems with trees uplifting footpaths. Use of underground plastic cell reinforcing allows installation of hard paving over trees while meeting engineering load bearing requirements.

Proposal

- We will actively seek out suitable areas on environmental open space and in local and neighbourhood parks where large canopy trees can be grown e.g oak, chestnut, sycamore, ash, maple, willow, walnut etc.
- Where conditions are suitable i.e. verges are wide (2.4 metres) and there is some distance to dwelling and buildings, we will plant large canopy trees as street trees.
- We will plant woodland in the larger parks and Demesnes and will emphasise the use of native stock in woodland schemes
- We will encourage the provision of wider roadside margins particularly on distributor roads to allow for the planting of larger trees.
- Where wider roadside verges are provided we will use underground cell reinforcement and/or porous surface materials to allow for the provision of cycle ways and footpaths over the rooting area of large trees particularly along distributor roads.
- In newly developed town centre areas we will seek to provide much larger rooting areas for trees through the use of constructed tree pits, cell reinforcement and porous surfacing in footpath and parking areas to allow for the planting of large canopy forest trees.

10 Tree Condition and Form

When a tree is categorised as in poor condition this refers to the presence of recognised defects, poor form or limb architecture, poor vitality, vandalism or the presence of disease or insect pests resulting in poor form etc. The causes vary widely but in all cases the useful life expectancy of the tree is shortened, sometimes drastically so. Good planting practice and aftercare particularly in the early years can reduce problems significantly.

Where formative pruning has been neglected and a tree has a recognised defect like a compression fork it is only a matter of time before removal of a limb or co-dominant stem becomes necessary. This will often so disfigure or even weaken the tree that it is preferable to remove and replace the tree.

Proposal

- We will inspect newly planted trees annually until tree stakes and guards are removed.
- As part of this annual visit we will loosen tight tree ties as required
- As part of this annual visit we will carry out formative pruning where required
- Where a tree has been vandalised to a point where it cannot be retained for the long term we will remove the tree and replace it in the next winter planting season
- Damaged trees will be retained when the benefits are evident and the tree has a useful life expectancy of at least 10 years.

11 Value of tree stock

Tree value becomes important to answer questions such as; 'What is the value of our tree stock and how much of our resources should be put into maintaining the tree stock?' or 'What damages should be assessed where a tree is wantonly destroyed and the destroyer has to pay for replacement?'

There are a number of tree valuation systems in use internationally. The 3 systems of most interest to us are the Helliwell System, the CAVAT system and the ALCA system.

The Helliwell System was developed by Rodney Helliwell in the UK and is widely used to calculate an amenity value for trees in the application of Tree Protection Orders (TPOs) and in assessing damages when a TPO is breached. If a tree cannot be seen from a public place it has no amenity value under the UK TPO regulations. The system has been in use for many years and trained practitioners calculate remarkably similar values even though many of the judgements made are subjective. On the down side the valuation of a tree is somewhat time consuming and impracticable when dealing with large numbers of individual trees. A number of council staff have been trained in the use of this system.

The Arboricultural and Landscape Council Of America (ALCA) system was developed in the USA and has received the support of risk assessors and the insurance industry. Calculations are based on a discounted replacement cost for a tree. Calculations start with the cross sectional diameter of a tree, replacement cost is then calculated using the commercial cost of similar trees in the nursery trade. The amount is increased for trees larger than commercially available and then discounted for trees of bad form, with recognised defects etc. In general the values calculated are significantly lower than those calculated using the Helliwell system.

Current Asset Valuation for Amenity Trees (CAVAT) is a system developed by the London Tree Officers Association to deal with trees where the Helliwell system was deemed inappropriate. It has a full method for use on individual trees and a quick method for use on large numbers of trees. The method is based on the crown area of the tree and the cross sectional area of the trunk is used to estimate this. This is then multiplied by a value factor calculated from the nursery gate prices for a basket of tree species with allowances for crown area versus stem diameter and also includes an amount for planting costs. In the next step this value is multiplied by a community tree index (CTI) value which is calculated on the population density of the area. The higher the population density, the higher the CTI value. For an average mature street tree in an outer London Borough the value calculated using CAVAT is approximately £10,000 which is generally lower than the values calculated using the Helliwell system. The CAVAT system can be incorporated into the tree management software used by the council and it is intended to use this system to value the council's trees.

Using CAVAT a council objective would be to increase the value of the tree stock over time through good management of the tree stock – removing poor specimens, replanting and improving the value of trees through appropriate management practices. Other applications include the use of the valuations where trees have been damaged by utility contractors or developers and in allocating budgets for tree management.

A preliminary analysis of the council's street tree stock finds that the average tree is quite young with the DBH at 10.9cm. Using a CTI value of 100%, not discounting the functional value and a safe life expectancy of 40-80 years the CAVAT value for a tree this size is €1,292. Against this the large Deodar Cedar in front of the County Hall, Swords has a CAVAT value of €80,000. In October 2009 with just over 24,000 trees on the database the value of our street tree stock was calculated at greater than €1 million. An asset of €1 million deserves a budget allocation to maintain and protect the asset.

Proposal

- Integrate the CAVAT system into the tree management software being used by the council.
- Manage our trees to constantly increase the value of the tree stock.
- Ring fence a budget for tree management equivalent to a defined % of the value of the tree stock asset.
- In cases of damage to or wanton destruction of a tree the CAVT value will be used to assess damages.

12 Insect and Disease Pests

Many insect pests causing difficulty in mainland Europe have never made it to Ireland and insect pest pressures are markedly less. However, many pests eventually make it here and there are a number causing difficulty in the UK that are moving steadily northward. It is only a matter of time before some of them arrive here. There is also a risk of exotic pests arriving in dunnage and timber packaging through our ports. The predicted changes in climate over the next 100 years are likely to increase pest pressures.

For our street trees the most common pests that cause complaint are scale insects and aphids. This is mainly due to honeydew dripping onto cars parked underneath infested trees. Chestnut scale is the biggest problem and it has been spreading through our street tree population for the past 10 years mainly on Sycamore, Norway maple, hornbeam and lime though other species also host the pest. It rarely puts the long term health of the tree at risk and the council does not treat street trees for this problem. Neither does the council prune or fell trees because of this problem.

Dutch Elm disease was a catastrophic event and killed most of the elms in the country. Many have grown again from the old root stools and are now at a size that the elm bark beetle, the vector for the disease, is feeding on elm again. This is likely to result in another wave of the disease as has occurred in the UK.

Ireland is officially free of fireblight disease which attacks plants in the rose (Rosaceae) family. In 2007 there was serious outbreak in the Malahide area and the council removed over 1,000 street trees, mainly rowan and whitebeam. The council is therefore working to reduce its reliance on Sorbus and other susceptible plants in the rose family.

Anthracnose on London plane is a problem in years with a wet spring when the trees lose many of their leaves but rarely puts the long term health of a tree at risk.

Old trees are susceptible to wood decay fungi and in many ways this should be regarded as a natural progression as the fungi assist the tree (in the wider sense) to recycle nutrients and support the next generation. Wood decay leads to tree failure and where the tree is within falling distance of public roads/footpaths and property the council has a duty of care to maintain trees in a safe condition. For this reason large trees in our parks within falling distance of public roads are inspected frequently to manage and eliminate

risks. That said it must be recognised that there are unpredictable tree failures.

The most common wood decay fungi we come across are *Ganoderma Adpersum* and *G. applanatum* on beech and *Kretzschmaria deusta* also on beech. *Phellinus tuberculosus* is fairly common purple plum over 30 years of age. These trees are removed when the disease advances and raises concerns regarding the structural stability of the tree. When wood decay fungi attack native trees with high wildlife values we often severely reduce the tree to the lower crown or make a monolith of the tree (leave a stump 3-5 metres high). This preserves the habitat for invertebrates that require standing deadwood. For similar reasons wherever we can sections of felled trunk are left on site where appropriate to allow them to decay naturally. Sometimes we saw them into rustic seats.



Seapark, Malahide -tree removal due to fireblight in 2007

Proposal

- We will plant as wide a range of tree as possible and strictly adhere to the 30:20:10 rule.
- We will not use pesticides in our normal maintenance programme for street trees.
- We will select trees resistant to pests wherever possible
- We will retain fallen and standing deadwood wherever possible

13 Replacement Planting

With a street tree stock of 40,000 trees and if we accept that street trees have an average life of 40 years we should be planting a minimum of 1,000 tree each year to maintain our stock. Our open spaces are sometimes described as green deserts due to the expanse of turf grass and relative lack of trees and there are many opportunities to increase the number with careful selection of sites and trees without increasing problems with security or anti-social activity.

Proposal

- We will plant at least 1,000 street trees every year
- We will plant at least 1,000 trees every year on our open spaces for the next 10 years
- We will plant large canopy forest trees on our class 2 and class 3 public open spaces.
- We will manage our woodlands to encourage natural regeneration and supplement this with the planting of young native trees

14 Sylvicultural System

There has been some debate regarding using forestry concepts in the management of the urban forest. However if we take the concept of continuous cover it will find ready acceptance among urban residents in that the goal is to have continuous tree cover without clear felling. If we were to further state that we want continuous cover with trees of mixed age and mixed species again the goal finds ready acceptance among residents. Part and parcel of this system is an acceptance that the urban forest will be managed and trees will be felled, pruned and replaced on a continuous basis. Again this is accepted by most people except when the individual tree being removed is close to their home.

In the management of the urban forest trees planted in similar locations at the same time will reach the end of their useful or safe life at about the same time. This could lead to the removal of most of the street trees on a given road or estate in a relatively short period of time and radically changes the ambiance and appearance of the area. A better approach would be to plan for the loss of the trees and commence phased replacement of the trees 5-10 or even 15 years before the majority of the trees will have to be removed.

Proposal

- We will manage the urban forest in Fingal as a continuous cover mixed age and mixed species forest.
- We will plan for the loss of original planting over a relatively short time by intervening at least 10-15 years prior tot his and commencing phased replacement of the trees.

15 Age distribution

Another means of diversification of the tree stock is by size distribution of the tree population. This follows a 40-30-20-10 rule where the street tree population should comprise 40% of young trees 1-20cm dbh; 30%, 21-40cm established trees; 20%, 40-60cm mature trees; and 10%, →60cm very old trees. The diversification formula should be carried one step further than a planting plan. It should be applied to the existing street tree inventory so that dependence on a single species from previous or natural plantings will not be carried forward into future plantings. The diversification formula was set up so that if 10% of a city's tree population was Red Oak and a disease or insect killed them all, then 90% of the urban forest would still remain. The American Elm comprised as much as 50% - 90% of the urban tree population before Dutch Elm disease devastated the elm landscapes across North America.

The distribution of street trees by size mirrors its age structure, since older trees are usually larger than younger trees. Taking into account mortality rates for younger trees a balanced size distribution will have more younger trees with a smaller size and fewer larger/older trees. The city of Davis in California has set a goal of 40% young trees (DBH←150cm, 30% maturing trees (15-30cm DBH), 20% mature (30-60cm DBH) and 10% old (DBH →60cm DBH). Pflugerville in Texas set a target of 30% young (DBH ←7.5cm), 40 % maturing (DBH 10-30cm) 20% mature (DBH 30-60cm) and 10% old (DBH→60cm)

From a sample of 16,320 street trees in Fingal where DBH has been recorded the age distribution is

DBH	No.	%	Class	%	Ideal
←10cm		6123	37.52%	Young	37.52%
40%					30-
11-20cm	5824	35.69%			
21-30cm	3211	19.68%	Maturing	56.37%	30-40%
31-40cm	961	5.89%			
41-50cm	174	1.07%			
51-60cm	19	0.12%	Mature	7.08%	20%
→61cm		8	0.05%	Old	0.05%
10%					

Interestingly to maintain 40% young trees we would need to plant 2,000 trees per year

compared to 1,000 trees per year when calculated using a 40 year lifespan and 2.5% replacement each year (street trees only).

The large % of young and maturing trees reflects the amount of new development in the last 15 years. Bearing in mind the proposals above regarding planting smaller growing trees in narrow roadside margins it is likely that the size distribution for street trees will not change greatly in the future and we will continue to have a relatively small sized street tree stock.

We will have to rely on tree planting on public open space and on private lands to provide large canopy tree cover. On open space planting would be a mix of 60-90cm transplants and standard (8-10 or 10-12 cm girth) trees where a more immediate impact is desired. The smaller transplants will likely make the better trees with timely shaping and thinning. Planting on open space will adhere to the proposals above regarding shade and proximity to housing. Some vandalism can be expected and this is one reason why denser planting with transplants is desired. No shrub layer or under-storey planting will be done. As the trees mature they will be limbed up to a height of 2 metres and together with thinning the objective is a group of well formed trees that can grow to maturity but where there is visibility through the group to discourage loitering. The planted groups will not usually be fenced but if fenced the fencing will be removed within 5-8 years. The herb/wildflower layer will be maintained for some distance from the tree group to improve wildlife values though the tree type is not ideal for nesting birds. Bulbs could also be planted in this area.

Many existing plantings have dense shrub under-storey often with play and drinking dens. These areas attract anti-social activity and in many cases tree growth has suffered. Combined with the proposals regarding shade existing problem plantings should be removed on a phased basis but somewhat slower than the replacement plantings.

Proposal

- We will plant at least 1,000 large canopy trees each year on public open space not including large woodland schemes in large and regional parks.
- We will clear the backlog of thinning and shaping work on existing small plantings on small open spaces on a phased basis over 5 years and manage the plantings to the objective described above.

16 Fruit and nut trees

The Council sometimes receives requests to increase the number of fruit and nut trees grown on public open space and as street trees and it is often inferred that this is to provide a food source for wildlife. Large fruit on street trees (crab apple, pear, almond) is often thrown about by children and use has been limited as a result. Crab apple often suffers from apple scab and it is important to plant scab resistant varieties. Small fruits and berries are also used as catapult ammunition but complaints are fewer than for crab apple or pear varieties. We have not grown nut trees as street trees in the past but use of Turkish hazel, *Corylus colurna*, is increasing. Native hazel, *Corylus avellana*, is used in woodland schemes as edge planting and also on Motorway planting. Walnut is grown in the larger parks and open spaces.

16 Climate Change

It appears that the actions agreed to date to limit carbon dioxide emissions will result in a high emissions scenario being the most likely model outcome. This will result in approximately a 3° C increase in global temperature in this century. Current models predict Ireland will be spared the worst effects of this increase. However in Ireland we can expect about a 50% increase in rainfall, mainly concentrated in the winter months, with increased frequency of droughts, floods and extreme storms. Changes in air and soil temperature, though minor compared to other regions, together with increased soil moisture is likely to change species suitability for parts of the country. We are also likely to see exotic pests being introduced to the country which, together with the other effects of climate change will increase environmental pressure on some species.

The predicted climate change will be extremely rapid compared to earlier changes. As trees have a long lifespan, often measured in hundreds of years, planting choices to be made now are difficult as we cannot predict with any certainty what conditions will be like in 200 – 300 years time. The Forestry Commission in the UK recently recommended trials of exotic tree species and provenances to prepare for changes in climate and to facilitate changes in species selection as climate change takes hold.

In Fingal with the changes proposed for street tree planting the majority of trees will be relatively short lived and we should have time to adjust species selection as the climate changes. For woodland and large canopy trees the situation is much more difficult and it would be prudent to spread our bets by carefully selecting species for each site and planting some exotic species and provenances.

Glossary of terms

Canopy	The crown of the tree.
Columnar	Trees with a columnar habit similar but not as tightly formed as fastigiated trees.
Cultivar	Cultivars are varieties that have arisen in cultivation
Crown lift	Refers to raising/lifting the crown of tree by removing lower branches. In general street trees will be crown lifted to a height of 2 metres.
Crown clean	Refers to the removals of deadwood and other problem limbs in a tree crown
Deadwood	Dead woody material within a tree crown. Can become a hazard where there is a risk of it falling. As opposed to this it provides habitat for certain lower plants and invertebrates that can only live on standing deadwood.
DBH	Diameter of a tree trunk at Breast Height (1.3 metres) usually expressed in centimetres. A useful measure of tree size that is easy and quick to measure
Defect	When carrying out a safety inspection of a tree the inspector looks for recognised defects either structural or physiological. The rule of thumb is that if a defect is found something must be done otherwise it would be negligence. In some cases the decision may be to monitor the defect with more frequent inspections of the tree.
Drip line	This refers to the maximum spread of the crown. The area within the drip line should not be disturbed as this is where the root plate, which keeps the tree upright, is located.
Dunnage	This refers to light timber lathes used in shipping of goods, particularly sawn lumber, to separate batches of material. It is known to be a way that exotic pests from around the world find their way to new countries.
Epicormic growth	This refers to branches or limbs growing from the trunk but without good attachment to the trunk. Epicormic growths often occur after pruning works and must be removed before they become large enough to fail. It is

preferable to remove them when young to avoid disfiguring the tree when the limbs become very large.

Exotic	Plants or animals that have been introduced to Ireland as opposed to native plants or animals
Fastigate	Refers to trees with a tight columnar habit. Often specified where a large crowned tree would be an obstacle for HGVs or buses.
Formative Pruning	Pruning carried, usually when the tree is young, to correct growth patterns that will develop into hazards in later life and reduce the expected useful lifespan of the tree. Also carried out to force the tree to grow in a way suited for a particular purpose e.g. timber yield or as an amenity specimen
Genus	The first part of the scientific binomial or botanical name for a plant or animal. Think of it like a family name
Genotype	Plants or animals that have the same or very similar genetic make up. Think of it as genetic potential to become typical of the species.
Height	The height of a tree. In FCC we measure tree height in height classes i.e. 1-5 metres, 5-10 metres etc. This makes it quick and easy to survey large numbers of trees.
Large Canopy Tree	Refers to larger growing and longer lived species like oak.
Native	Plants or animals that have been in Ireland for thousands of years.
Naturalised	Plants or animals that have been introduced but now reproduce themselves in nature without the help of man.
Phenology	This is the science of the natural timing and sequence of events in nature and the factors that influence this. Think of it as the succession of plants commencing growth in spring followed by insects laying their eggs on the plants and birds eating the larvae. It is used to track the effects of climate change and also indicates when it is the best time to carry out maintenance operations to minimise the negative impacts on trees and wildlife.
Phenotype	Plants or animals whose actual form has been influenced by the environment over and above the genetic potential. Compare a tree growing in a sheltered garden at sea level

to a misshapen tree of the same species growing on top of a windswept mountain.

Physiological condition	The condition of the living parts of the tree and how vigorous the tree is. Diseases or physiological disorders would be noted under this heading.
Provenance	The same species of plant, Sitka spruce for example, will grow differently in Ireland California and Alaska. Trees from the California provenance will burst bud early leaving them open to late frost damage and go dormant late. Trees from the Alaska provenance will burst bud so late that they only use part of our available growing season. We therefore often choose the British Columbia provenance.
Roots	Roots anchor the tree in the ground and also exploit the soil for nutrients, water and oxygen needed by the tree. 90% of roots are in the top 2 metres of soil. Feeding roots are often found up to 2x the height of the tree away and 3x time is not unknown.
Root Plate	This refers to the heavier roots within the drip line. These are the roots that keep a tree standing upright. Think of it like a wine glass with the glass stem being the tree trunk, the base of the glass as the root plate and the cup as the tree crown. Feeding roots will grow way beyond the root plate.
Shrub	Woody plant without a single trunk that grows less than 3 metres in height. There is a grey area between large shrub and small trees where people may differ in how they describe a plant.
Small canopy tree	Refers to trees with a relatively low maximum height, crown spread and usually a fairly short life
Species	The second part of the scientific binomial or botanical name for a plant or animal. Think of it like a first name
Staking	If trees are planted at a size greater than 1-1.5 metres staking keeps the roots firm until new root growth anchors the tree in the ground. Stakes are also used to support tree guards. In field conditions staking should not be required for more than 1-2 years.

Standard tree	Trees offered for sale come in a variety of sizes from 60-90cm whips and transplants to semi mature trees. Street trees are usually specified as light standard, standard or heavy standard trees. The trees are usually clear stemmed to 2 metres and rated by the girth of the trunk as 8/10, 10/12, 12/14 meaning the girth is between 8 and 10 cm etc.
Structural condition	The integrity of a tree from the structural point of view. Think of it as the likelihood of the trunk or wood failing or a limb falling.
Spread	The extent of the crown of the tree usually expressed in metres. Shape of crown and spread in several directions may be recorded.
Tree Guards	Metal guards installed around newly planted trees to protect them from vandalism. In Fingal we use weldmesh type guards in areas where the risk of vandalism is considered high.
Tree	Often defined as vegetation with a supporting woody trunk with a diameter greater than 75mm (3 inches)
Trunk	The main woody section of the tree that holds the crown up.
Variety	Within species there are specific types that can be propagated either vegetatively or sexually. Think of it like identical twins. Varieties usually arise naturally while cultivars arise or are selected in cultivation.
Wood decay	The process where wood is degraded and loses its structural strength.
Wood decay fungi	The fungi that decay wood and reduce its structural strength leading to concerns regarding the trees stability. Virtually all wood decay organisms are fungi. A knowledge of wood decay fungi and their identification is necessary to assess the trees correctly.
Woody vegetation	Many plants that live for more than one year lay down lignin and cellulose (wood) to support the plant. It includes trees, shrubs and climbers with a woody stem

RESULTS OF ON-LINE TREE SURVEY February 2010

The number of responses was disappointing even though the project was advertised in local media and in Your Fingal the FCC newsletter. Though too small to be regarded as a representative sample the results are interesting and confirm many impressions the parks division has regarding public attitudes to trees.

Many of the proposals in the draft tree strategy are designed to deal with these issues BUT in the context of limited resources particularly regarding regular pruning of trees, hedgerows and shrubberies.

Most people identified the street they live on and this allowed us to compare tree size to the feelings of respondents.

Question	Response	No.	Total	%
Streets should have as many trees as possible	Yes	36	45	80.0%
	No	9		20.0%
	No Opinion			0.0%
Tree should take second place after other considerations e.g. traffic sight lines, not obscuring public light standards, no excessive shading of gardens etc	Yes	43	55	78.2%
	No	12		21.8%
	No Opinion			0.0%
The shade cast by street trees is important to me	Yes	24	54	44.4%
	No	23		42.6%
	No Opinion	7		13.0%
We must have street trees for the sake of wildlife – birds, insects etc.	Yes	51	68	75.0%
	No	7		10.3%
	No Opinion	10		14.7%
Street trees increase the value of my home	Yes	38	56	67.9%
	No	6		10.7%
	No Opinion	12		21.4%
The ideal street tree				
Has flowers	Yes	28	59	47.5%
	No	8		13.6%
	Doesn't matter	23		39.0%
Has fruit/berries	Yes	29	56	51.8%
	No	10		17.9%
	Doesn't matter	17		30.4%
Has a thick trunk	Yes	21	57	36.8%
	No	17		29.8%
	Doesn't matter	19		33.3%
Has a large crown	Yes	15	56	26.8%
	No	18		32.1%
	Doesn't matter	23		41.1%

Casts only light shade	Yes	34	55	61.8%
	No	4		7.3%
	Doesn't matter	17		30.9%
Casts dense shade in summer	Yes	11	56	19.6%
	No	24		42.9%
	Doesn't matter	21		37.5%
Has good autumn colour	Yes	38	57	66.7%
	No	2		3.5%
	Doesn't matter	17		29.8%
Does not drop too many leaves	Yes	26	57	45.6%
	No	11		19.3%
	Doesn't matter	20		35.1%
Does not shade private gardens	Yes	31	56	55.4%
	No	5		8.9%
	Doesn't matter	20		35.7%
The trees on my street are				
Too big	Yes	11	51	21.6%
	No	34		66.7%
	No Opinion	6		11.8%
Too small	Yes	17	50	34.0%
	No	26		52.0%
	No Opinion	7		14.0%
Cast too much shade	Yes	10	50	20.0%
	No	34		68.0%
	No Opinion	6		12.0%
Drop too many leaves and block gullies	Yes	16	52	30.8%
	No	30		57.7%
	No Opinion	6		11.5%
Need pruning	Yes	16	51	31.4%
	No	30		58.8%
	No Opinion	5		9.8%
Are just right for the road/estate	Yes	21	47	44.7%
	No	15		31.9%
	No Opinion	11		23.4%

The council receives many requests to prune or remove trees because they cast heavy shade and make gardens very dark and cold. Where this occurs it could be said that 'the wrong tree is in the wrong place'.

What should be policy in these cases?

Remove the tree and do not replace it	Yes	3	46	6.5%
	No	41		89.1%
	No Opinion	2		4.3%
Remove and replace with 'right' tree	Yes	39	53	73.6%
	No	12		22.6%
	No Opinion	2		3.8%
Thin the crown of the tree	Yes	41	51	80.4%
	No	5		9.8%
	No Opinion	5		9.8%
Do nothing and retain the tree in all cases	Yes	2	49	4.1%
	No	43		87.8%
	No Opinion	4		8.2%
Only plant trees that do not cast heavy shade	Yes	27	54	50.0%
	No	23		42.6%
	No Opinion	4		7.4%
Plant trees far enough away that they do not shade private property	Yes	34	53	64.2%
	No	15		28.3%
	No Opinion	4		7.5%

The council receives many requests to remove street trees because they block the light from public light standards. The council has developed the practice of removing and not replacing street trees within 3 metres of a public light standard when residents draw our attention to this and the security concerns that result.

What should be policy in these situations?

Retain all trees in all cases	Yes	7	52	13.5%
	No	43		82.7%
	No Opinion	2		3.8%
Remove and do not replace the trees	Yes	11	50	22.0%
	No	37		74.0%
	No Opinion	2		4.0%
Prune the trees as hard and as often as necessary to maintain adequate lighting	Yes	39	52	75.0%
	No	11		21.2%
	No Opinion	2		3.8%
Remove and replace with a tree in the nearest	Yes	40	51	78.4%
	No	10		19.6%

suitable location	No Opinion	1	2.0%
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In their search for water, oxygen and nutrients tree roots will grow wherever they can. If the available rooting area is too small or trees are planted in a tree pit it is only a matter of time before the roots grow under paved areas. This can result (depending on species and variety) result in cracking and lifting of footpaths. In extreme cases the path will be uplifted to such an extent that it may become a trip hazard for pedestrians.

What should be the councils policy regarding street tree planting?

Only plant smaller trees and carry out any works necessary to help them establish and grow	Agree	42	54	77.8%
	Disagree	10		18.5%
	No opinion	2		3.7%
Keep planting large vigorous trees even in narrow verges and small tree pits	Agree	10	52	19.2%
	Disagree	41		78.8%
	No opinion	1		1.9%
Prune the trees as often and as hard as necessary to keep them to an acceptable size	Agree	40	50	80.0%
	Disagree	8		16.0%
	No opinion	2		4.0%
Remove and replace the large trees with more smaller growing species or varieties	Agree	29	52	55.8%
	Disagree	19		36.5%
	No opinion	4		7.7%

Hedgerows

As the urban areas have expanded in Fingal the council has taken in charge open space where old hedgerows have been retained in accordance with planning conditions. Old hedgerows have significant wildlife value. In many cases these hedgerows become sites where youths congregate and can become sites of anti-social activity or nuisance for local residents leading to demands for their removal.

Retain the hedgerows in all cases	Agree	23	48	47.9%
	Disagree	20		41.7%
	No opinion	5		10.4%
Trim the hedgerows annually to reduce their attractiveness to anti-social elements	Agree	49	54	90.7%
	Disagree	4		7.4%
	No opinion	1		1.9%
Remove the hedgerows	Agree	5	51	9.8%
	Disagree	42		82.4%
	No opinion	4		7.8%

Shrubberies

Many of our open spaces have dense planting around the perimeter of the open space often along boundary walls to private gardens. This is commonly a mix of trees with shrubby under storey. This dense vegetation often provides cover for anti-social elements leading to demands for the removal of the vegetation.

Retain the trees but remove the understorey

Agree	23	54	42.6%
Disagree	29		53.7%
No opinion	2		3.7%

Keep the under storey below 1 metre in height

Agree	37	51	72.5%
Disagree	9		17.6%
No opinion	5		9.8%

Where necessary remove the under storey and replace with plants with a maximum height of 1 metre

Agree	35	49	71.4%
Disagree	8		16.3%
No opinion	6		12.2%

Keep all planting at least a mowing strip away from boundary walls to private gardens

Agree	29	53	54.7%
Disagree	11		20.8%
No opinion	13		24.5%

Prune the existing under storey as hard and as often as necessary to maintain it at about 1 metre in height

Agree	23	40	57.5%
Disagree	13		32.5%
No opinion	4		10.0%

Service

If you have ever requested tree works

Yes	15	34	44.1%
No	19		55.9%
No Opinion	0		0.0%

Did you get to the right person easily

Yes	6	16	37.5%
No	10		62.5%
No Opinion	0		0.0%

Were you treated courteously by the council

Yes	12	15	80.0%
No	3		20.0%
No Opinion	0		0.0%

Were the works requested carried out

Yes	2	14	14.3%
No	12		85.7%
No Opinion	0		0.0%

If not were you informed of the reason

Yes	4	15	26.7%
No	11		73.3%
No Opinion	0		0.0%

Was there an excessive delay between your request and the work being carried out	Yes	9	11	81.8%
	No	2		18.2%
	No Opinion	0		0.0%
If a street tree outside your property was felled were you informed of this in advance	Yes		3	0.0%
	No	3		100.0%
	No Opinion	0		0.0%