TAIRAWHITI

STREET TREES AND GARDENS PLAN

2018

ACKNOWLEDGEMENTS

The Street Trees and Gardens Plan is one of a suite of plans prepared under the Tairawhiti Community Facilities Strategy.

The development of the Strategy was guided by a governance group of regional stakeholders including:

- Eastland Community Trust
- Gisborne art community
- Gisborne District Council
- Hiruharama School
- Sport Gisborne Tairawhiti
- Tairawhiti Cultural Development Trust
- Te Runanganui o Ngati Porou
- Te Runanga o Turanganui a Kiwa
- Tolaga Bay Area School

Many other organisations and individuals have generously contributed to the Plan through focus groups, meetings and submissions.

Many thanks to all of these people for the time and energy they volunteered to ensure Tairawhiti has a clear path for our community facilities.

CONTENTS


Lemon &
Loaf
Coffee &
Hot Chicken
Freshly Made

PLAN ON A PAGE

The Plan on a Page summarises the key parts of the Street Trees and Gardens Plan – the issues and opportunities, the objectives and the actions. Details are in the body of the document.

KEY ISSUES AND OPPORTUNITIES

Street trees

- ü Reactive work and unplanned costs
- ü Need for strategic guidance
- ü No replacement planning
- ü Unrecorded trees in the road reserve
- ü No clarity for public involvment

Street gardens

- ü No forward planning
- ü No clarity for public involvment
- ü Technical challenges
- ü Lack of urban design.

OBJECTIVES

Planning and decision making

- ü Tairawhiti street trees and gardens are planned and managed in a proactive, systematic and cost-effective way, with input from the community.
- ü Council makes clear and consistent decisions when dealing with public requests for tree related work.
- ü Council is able to identify and prioritise street tree and garden planting and management work across Gisborne.

Planting, maintenance and removal

- ü The right tree and garden species are planted in the right places.
- ü All tree/vegetation work is carried out in accordance with established industry standards and practices.
- ü Property, services and human safety are not placed at undue risk by inappropriate planting of trees and gardens.
- ü Trees are maintained to foster development of safe, healthy and natural tree form.

Urban design

- ü Street trees and gardens reinforce neighbourhood character and strengthen local identity with preference, where practicable, for native species.
- ü Street trees and gardens improve the visual appeal and environmental comfort of our city and townships' key road corridors and neighbourhoods.
- ü Street trees and gardens are resilient to environmental changes, including water shortages over the summer period and the spread of plant pests and diseases.

Key actions	When it will happen	No. trees	Estimated cost
Tree removal programme: High priority trees	2018-2019	123	$61k
Tree removal programme: Medium priority trees	2019-2020	150	$75k
New tree planting programme - Gisborne City	2018-2019	532	$239k
	2019-2020	536	$241k
	2020-2021	334	$150k
	2021-2022	196	$88k
New tree planting programme - Rural townships	2018-2019	N/A	$25k
	2019-2020	N/A	$25k
	2020-2021	N/A	$25k
	2021-2022	N/A	$25k
	2022-2023	N/A	$25k
Maintenance of Street Tree database	On-going	N/A	Internal
Review the effectiveness and appropriateness of tree and garden plantings	Yearly	N/A	Internal
Myrtle rust contingency fund	N/A	N/A	TBC
Management of trees within road corridors located outside the boundaries of Gisborne city and the region's rural township (Tairawhiti Roads)	Yearly	N/A	$500k
A regular pruning and maintenance programme for street trees	Ongoing	N/A	Internal

INTRODUCTION

PURPOSE

The purpose of this Plan is to enable holistic and innovative thinking around affordable and effective future provision of street trees and gardens within the Tairawhiti-Gisborne region.

SCOPE

The Plan provides the strategic direction for street trees and gardens in the Tairawhiti-Gisborne region for the next 20+ years. It is a tool to assist decisions on planning, funding, managing and operating street trees and gardens. This Plan does not replace the need for more detailed site specific focused research and analysis.

Street trees and gardens are some of our region's most important natural assets. They are crucial to creating and maintaining high quality public spaces and the livability of our neighborhoods.

This Plan provides a strategic way to plan, design and manage street trees and gardens in our urban areas.

With this Plan, our urban spaces will continue to build and maintain a diverse street tree and garden network which will enhance our urban environment today and become a legacy for future generations.

The Parks and Open Spaces Plan provides guidance for the management of trees and gardens in other public spaces.

LIVING DOCUMENT

The Plan has been developed based on current information available. But communities aren't static. The way we view facility provision shouldn't be static either. The Plan needs to be able to 'bend and sway' as information is updated and planning evolves over time. Regular reviews are important.

HOW TO USE THIS PLAN

The document is organised into the following parts:

PART A: Context of street trees and gardens

PART B: Issues and opportunities

PART C: Objectives and policies

PART D: The network

PART E: Actions

PART F: Tree species selection

PART G: Tree and garden plans

PART H: Appendices

BENEFITS OF STREET TREES AND GARDENS

Street trees and gardens improve the overall appeal and enjoyment of our neighbourhoods and urban spaces.

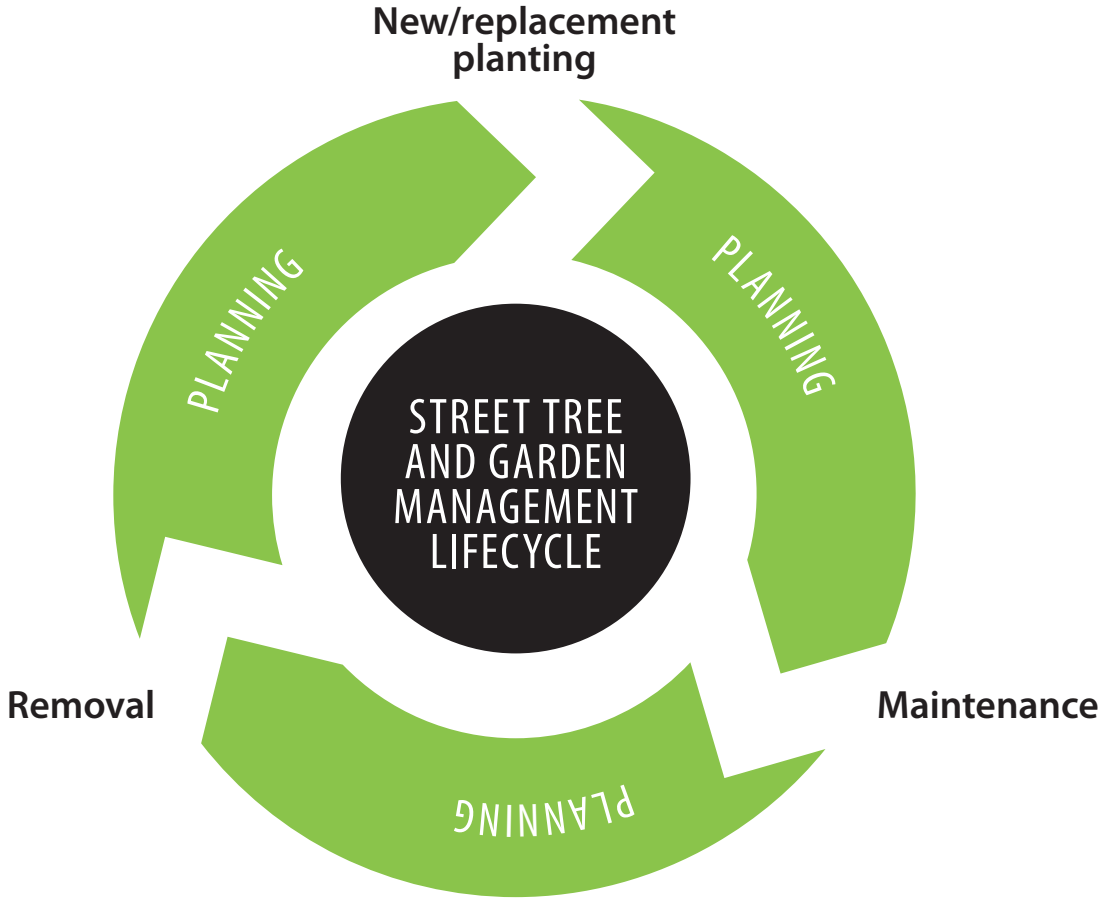
Street trees and gardens can:

- ü define a neighbourhood's character and strengthen local identity
- ü improve environmental comfort by providing summer shade for the comfort of pedestrians and residents
- ü improve environmental amenity by diminishing traffic noise, screening unappealing views and reduce glare
- ü improve climatic conditions by absorbing heat and dissipating cold, filtering air, and capturing dust and allergens
- ü provide orientation with the city street network
- ü offer a human scale that mediates the sometimes dominating effect of buildings
- ü enhance property values as trees establish and mature
- ü provide seasonal interest and natural beauty through foliage, leaf patterns, flowers, bark, fruit and canopy
- ü provide a link to nature and act as a source of appreciation and delight
- ü offer a habitat and a food source for native birds.

OUR APPROACH

Gisborne District Council looks after over 4,000 street trees and 2,500m^2 garden spaces within the road reserves of Gisborne city and the district's rural townships.

Trees and shrubs, like all living things, grow, age and eventually die. It is important that Council has a strategy and the tools to proactively respond to these changes including new and replacement planting, maintenance and removal. This document is intended to guide the management of future street trees and gardens with this lifecycle in mind.



STREET TREES AT A GLANCE

Council currently maintains around 4000 trees throughout Gisborne's road reserves. There are as many as 130 different species planted, however just 29 species comprise 80% of the total number.

The ten most common trees are:

Common name	Species	Count
Purple-leafed plum	Prunus x blireana	407
Sweetgum	Liquidambar styraciflua	364
White cedar	Melia azedarach	286
Silver birch	Betula pendula	217
Mexican fan palm	Washingtonia robusta	206
Pohutukawa	Metrosideros excelsa	182
Queen palm	Arecastrum romanzoffianum	163
Maidenhair tree	Gingko biloba	152
Japanese spindle tree	Euonymus japonicus	107
Wonder tree	Idesia polycarpa	101

- ü Council has removed more street trees than it has replaced. In the last 5 years, 747 street trees have been removed and only 30 planted.
- ü Council spends an average of $45k each year on the maintenance of its street trees. This does not include the cost of tree removals.
- ü From 2011 to 2015, Council received around 150 requests per year relating to street trees. Most requests are for the pruning or removal of trees.
- ü The majority (88%) of Gisborne's street trees are exotic. Pohutukawa is the most commonly planted native tree.

STREET GARDENS AT A GLANCE

Council manages 37 planted pots and around 150 median and roundabout gardens along Gisborne's main roads and within the CBD. These gardens deliver high impact, colourful statements that help create vibrant and attractive public spaces.

These gardens have a combined area of over 15,000m^2 and include over 75,000 evergreen, perennial and annual shrubs and bulbs planted across both winter and summer periods.

STREET TREE ISSUES

Street tree issues can be divided into three broad area:

Planning and decision making

- ü Reactive work and unplanned costs. Many street tree-related issues are a legacy of decisions made at the time of planting, often decades ago. Many trees have outgrown their location and create community dissatisfaction as well as unplanned pruning, maintenance and removal costs. Council has needed to focus on managing these issues. With no dedicated budget for this work, this diverts resources away from other areas such as core maintenance and tree renewals.
- ü Need for strategic guidance. Gisborne's street tree network has evolved gradually over time without the benefit of strategic direction. Without this direction Council risks planting trees in locations that create maintenance, amenity or safety problems in the future.
- ü No replacement planning. Council is currently removing more street trees than it is planting. This means our street tree network is shrinking and delivering less benefits to the community.
- ü Unrecorded trees in the road reserve. Council maintains a street tree database which records where its assets are and other relevant information. Many trees have not been captured by the database, either because they have been planted by members of the public or they are located along rural roads (outside the scope of the database). These trees can create unplanned management costs and confusion around determining who is responsible for their maintenance or removal.
- ü No clarity for public involvement. Currently, Council has no guidance around how the public should be involved in the gifting, planting and/or maintenance of trees in the road reserve. Individuals planting or maintaining street trees can have unintended implications for the health of the tree, amenity of the street or maintenance costs for Council.

Tree management

- ü Street trees can sometimes have unwanted effects on public areas as well as individuals and their properties. Around 2000 street trees across Gisborne have one or more management related issues.
- ü As many as 1,500 street trees are growing near or under overhead power and telecom lines. They need regular pruning back to avoid contact with these services. Street trees can also interfere with underground services, paved surfaces and street lights. This requires maintenance or repair to avoid further problems.
- ü Over 600 street trees are within 60m of a street corner which may limit driver and pedestrian visibility. 231 street trees are at the end of their functional life and will begin to pose a risk in terms of limb drop or other structural failure. Some tree species have toxic or allergenic parts such as the Rhus (toxic sap) and silver birch (allergenic pollen).
- ü Council engages certified arborists to undertake all of its tree maintenance duties. Arborists have observed that at least 270 trees have been damaged by inappropriate past pruning. Such damage affects both the health and the visual amenity of the tree.
- ü Large trees growing under power lines require regular pruning back by contracted arborists. This work ultimately weakens the tree and increases the risk of infection and rot. This in turn requires further maintenance or removal.
- ü Rapid tree growth, fallen fruit, seeds and leaves can pose a nuissance effect on people and their properties, all of which requires ongoing management to limit this problem.

Urban design

- ü The choice of tree species, how they are planted and where they are planted can have a big effect on the look and feel of individual streets as well as the city as a whole.
- ü No or few street trees can limit the visual appeal of a street and reduce environmental comfort. Fewer street trees also provide less habitat and food opportunities for native fauna.
- ü Variability in tree planting reduces the continuity in the structure that trees provide to a street. This affects consistency in the structure and visual street appeal.
- ü Some tree species are not suitable for their location. In some cases, large trees under power lines have been topped and this significantly affects their form and contribution to street amenity. In other cases, species are too small for the street and don't provide adequate shading or structure to match the size of the road corridor. Some species have nuisance qualities that reduce the amenity they provide. They include female ginkgos which drop rancid smelling fruit and weedy species that can potentially spread into other areas.
- ü Many trees have struggled to adapt to Gisborne's local climate and soil conditions. In some instances, they add little value to the street environment while continuing to add to maintenance costs.
- ü Weedy species. Several tree species within Gisborne are considered weedy and are not suitable for consideration as street trees. They can affect the amenity of our streets as well as spread inadvertantly beyond the road corridor.

STREET GARDEN ISSUES

Like street trees, these issues can also be divided into three broad areas:

Decision making

- ü Forward planning. Good gardens need forward planning. With as many as 75,000 annuals and perennials planted and maintained every year across the city, it is vital that Council staff have an advanced understanding of what will be planted, where and when. Forward planning ensures that our street gardens are looking the best they can be all year round.
- ü Public involvement. Council would benefit from having a consistent approach to public use of street gardens and roadside berms.

Technical challenges

- ü The use of shorter lived perennial and annual plants carries its own challenges in terms of the timing of supply, planting, maintenance and replacements.
- ü Street medians and pots are challenging growing environments and need to be managed well so these assets continue to add value to street-side amenity.
- ü Water shortages over summer are likely to become more common and Council will need to ensure that its gardens are able to adapt to hot and dry conditions.

Urban design

- ü Street gardens are high profile statements about our place. Choosing the right plants not only ensures they grow well in their setting but that they also look good and contribute to the overall experience and appreciation of the city. Attractive gardens also create strong cues that we care about our place and is a great source of local pride.

STREETTREEANDGARDENOBJECTIVES

PLANNING AND DECISION MAKING

ü Tairawhiti street trees and gardens are planned and managed in a proactive, systematic and cost-effective way, with input from the community.

ü Council makes clear and consistent decisions when dealing with public requests for tree related work.

ü Council is able to identify and prioritise street tree and garden planting and management work across Gisborne.

PLANTING, MAINTENANCE AND REMOVAL

ü The right tree and garden species are planted in the right places.

ü All tree/vegetation work is carried out in accordance with established industry standards and practices.

ü Property, services and human safety are not placed at undue risk by inappropriate planting of trees and gardens.

ü Trees are maintained to foster development of safe, healthy and natural tree form.

URBAN DESIGN

ü Tairawhiti street trees and gardens reinforce neighbourhood character and strengthen local identity with preference, where practicable, for native species.

ü Tairawhiti street trees and gardens improve the visual appeal and environmental comfort of our city and townships' key road corridors and neighbourhoods.

ü Council's street trees and gardens are resilient to environmental changes, including water shortages over the summer period and the spread of plant pests and diseases.

STREET TREE AND GARDEN POLICIES

PLANNING

ü Council will maintain a current Street Tree Database for trees within Gisborne city and the region's townships, as outlined in this plan. The asset data will include the following:

- tree location
- date of planting
- common and botanic names
- size
- impact of tree on surrounding assets and activities
- safe useful future life expectancy
- hazard rating.

ü The Street Tree Database will be used to develop maintenance schedules and for planning, work programming and budgeting purposes.

ü Council will develop a programme of new street tree planting to improve and strengthen the existing street tree network.

ü Council will develop a programme of removal and replacement for street trees that are hazardous, unsuitable for the road reserve or are in decline.

ü Council will review the effectiveness and appropriateness of tree and garden plantings across the city and rural townships to inform future design and decision making.

ü Council will take practical steps to minimise the risk and impact of myrtle rust on Gisborne's street trees by:

- maintaining species diversity in its street tree network
- working across Council hubs and with external agencies to develop an appropriate management programme if the disease is found in the Gisborne region.

COMMUNITY INVOLVEMENT AND ENGAGEMENT

ü Council will consider and assess resident requests for new tree planting within the road reserve. Any planting undertaken will be in accordance with this Plan.

ü Requests for fruit trees or commemorative trees in the road reserve will not be considered by Council. However, Council will consider their planting in other open spaces where their maintenance requirements and commemorative values are better accomodated.

ü Gifting or sponsoring trees for the road reserve will be considered under Council's Donations Policy. Council will also consider donated/sponsored trees if, in the view of an arborist, they are likely to grow well and be an appropriate species for the location.

ü Private planting or pruning of trees in the road corridor is not encouraged by Council. All proposed planting or maintenance of trees must be consistent with this Plan, approved by Council and undertaken by a Council approved arborist.

SELECTION AND PLANTING

ü Council will refer to the schedule of recommended trees in this plan for selection but retains the discretion to select other species where practicable and conforming to Council's Pest Management Plan.

ü Council will refer to the selection criteria in Part C of this Plan to determine the most appropriate tree species for any given location.

ü Council will maintain a spread of tree age classes to minimise the impact of tree removals required in close time frames and/or within specific areas.

ü Council will plan tree and garden planting to ensure:

- only quality plant stock will be used
- standardised specifications and techniques and practices will be used to install plant materials
- the correct species will be chosen in relation to the limitations of the site
- native species are used where practicable to provide habitat, foraging and ecological connections for native birds.

ü Council will work to minimise the spread of myrtle rust into the region. As a minimum, Council will request plant suppliers outside the region to provide the dates and results of any audits undertaken for myrtle rust.

ü To promote and maintain diversity and resilience within the urban forest, Council will limit representation of new planting of any single species of tree to a level that ensures a measure of resilience.

ü Root containment systems or barriers will be used where root intrusion may adversely affect road assets such as footpaths, kerbs and underground services.

ü Tree planting in all areas will consider the sensitivity of local landowners to views, shade, leaf drop and other relevant concerns.

ü Tree planting will not occur where it may interfere, compromise or adversely affect the safety, efficiency and integrity of infrastructure such as flood protection and river control works, radio and telecommunications networks.

MAINTENANCE

ü Council will manage street trees found in Gisborne City and the region's rural townships as outlined in this Plan. Previously unrecorded trees will be added to the Street Tree Database as they are identified through Council's street tree maintenance programme.

ü Tairawhiti Roads will manage trees within road corridors located outside the boundaries of Gisborne city and the region's rural townships.

ü Council will reserve the right to remove any tree within any road corridor (urban or rural) that imposes unacceptable maintenance costs, safety risks or is otherwise inconsistent with the direction of this plan.

ü A regular pruning and maintenance programme for street trees and/or vegetation growing within the road corridor should be undertaken to ensure accessibility, safety, maintenance and/or visibility of:

- footpaths or roads
- street/traffic lighting
- vehicle and pedestrian access to public areas
- traffic signage and visibility at intersections
- significant public views from the road or footpath specified viewing areas such as view shafts
- access to adjacent property.

ü Council will monitor and treat pest and disease issues, using best practice control techniques, as part of the tree maintenance programme.

ü Work on trees will be carried out to recognised and accepted contemporary arboricultural standards and consistent with current industry practices, including the New Zealand Arboricultural Association (NZAA) and International Society of Arboriculture (ISA) guidelines.

ü Work scheduling will occur based on the following order of priority:

- health and structural safety of the tree
- essential service clearance
- pruning for desirable clearance and amenity effects

- ü The topping of trees is not supported by Council. Trees that are topped are more likely to decay and develop structural problems with the resultant re-growth.
- ü Trees in the road corridor may be considered for topping only in exceptional circumstances where:
  - topping is appropriate to that species (eg the pollarding of plane trees)
  - the tree has been topped or a height reduction practice has existed in the past and other management options are not considered arboriculturally appropriate
  - clearance of power lines, traffic signs or lights, or to meet other statutory requirements necessary
  - the trees (or tree) form part of a formally planted and maintained hedge. boundary hedges are excluded unless otherwise agreed to by Council.
- ü Pruning shall be undertaken to ensure clearance requirements around power lines/cables in the road corridor in accordance with the Electricity (Hazards from Trees) Regulations 2003.
- ü For trees growing on private property, it is the private property owner's responsibility to maintain tree canopy clearance from power lines.

INTERFERENCE WITH SERVICES

- ü Future plantings will be undertaken in consideration of the proximity to, and likely effect of, trees on above or below-ground infrastructure, consistent with urban design requirements.
- ü When notified of damage caused by a public tree to property or services, practical steps will be taken to confirm and mitigate those effects.
- ü Trees on arterial routes shall be pruned or removed to provide adequate visibility where they impede or obstruct access for pedestrian and vehicular traffic.
- ü All reasonable effort will be taken to clear street and reserve lights and minimise any reduction in light penetration resulting from obstruction by trees.
- ü Where trees are obstructing a street light and accepted arboricultural practices, such as pruning, cannot be used to resolve the problem, Council will investigate options to maintain safety standards, such as relocating the street light or the tree or installing a new light, or removing the tree.
- ü Council's utilities sections and network providers are to notify Council's Recreation and Amenity Operations Manager where any upgrades or remedial work will affect or impact on street trees within the city or townships.

TREE REMOVALS

- ü Council will plan and prioritise the staged removal of street trees based on the following criteria:
  - are dead, dying or severely diseased
  - are at the end of their serviceable lives
  - pose a significant threat to public safety or property that cannot otherwise be avoided or mitigated through other management techniques
  - are identified as weeds in Council's Regional Pest Management Plan
  - have been adversely affected by inappropriate pruning or disfigurement and offer little or no amenity value as determined by a qualified arborist
  - are female Ginko trees and create significant nuissance issues from fallen fruit
- ü Council will use its Pruning and Removal of Public Trees Procedure to ensure consistency in the approach to determining tree removal and pruning applications (refer to Appendix 3).
- ü All applications to plant or remove and modify street trees must be in writing or through Council's rfs system so that Council has a permanent record of the application.

TREE REPLACEMENTS

- ü Council will plan for the installation of replacement plantings, where feasible, prior to any tree removal.
- ü Council will refer to the Schedule of Recommended Trees (Appendix 1) and the selection criteria in Part C of this plan for replacements but retains the discretion to select other species where practicable. Like for like replacement is not always appropriate and selection of the new species must be consistent with the guidance of the plan.

OVERVIEW

STREET TREES

Gisborne's Street Tree Plan guides street tree planting in both the city as well as the district's main townships. This section provides a description of each area's general character (including existing trees, built form and land use), the design intent for street tree planting and a schedule of possible street trees. The selection criteria in this document can be used to determine the most appropriate species for any given context. Having a range of options may also be useful for consultation purposes.

Gisborne city has been divided into key road corridors and neighbourhood precincts. Key road corridors are our priority areas for street tree planting. They move both local and visitor traffic across the city, represent the key gateways into and out of the city and are critical in terms of maintaining a high level of amenity and attractiveness.

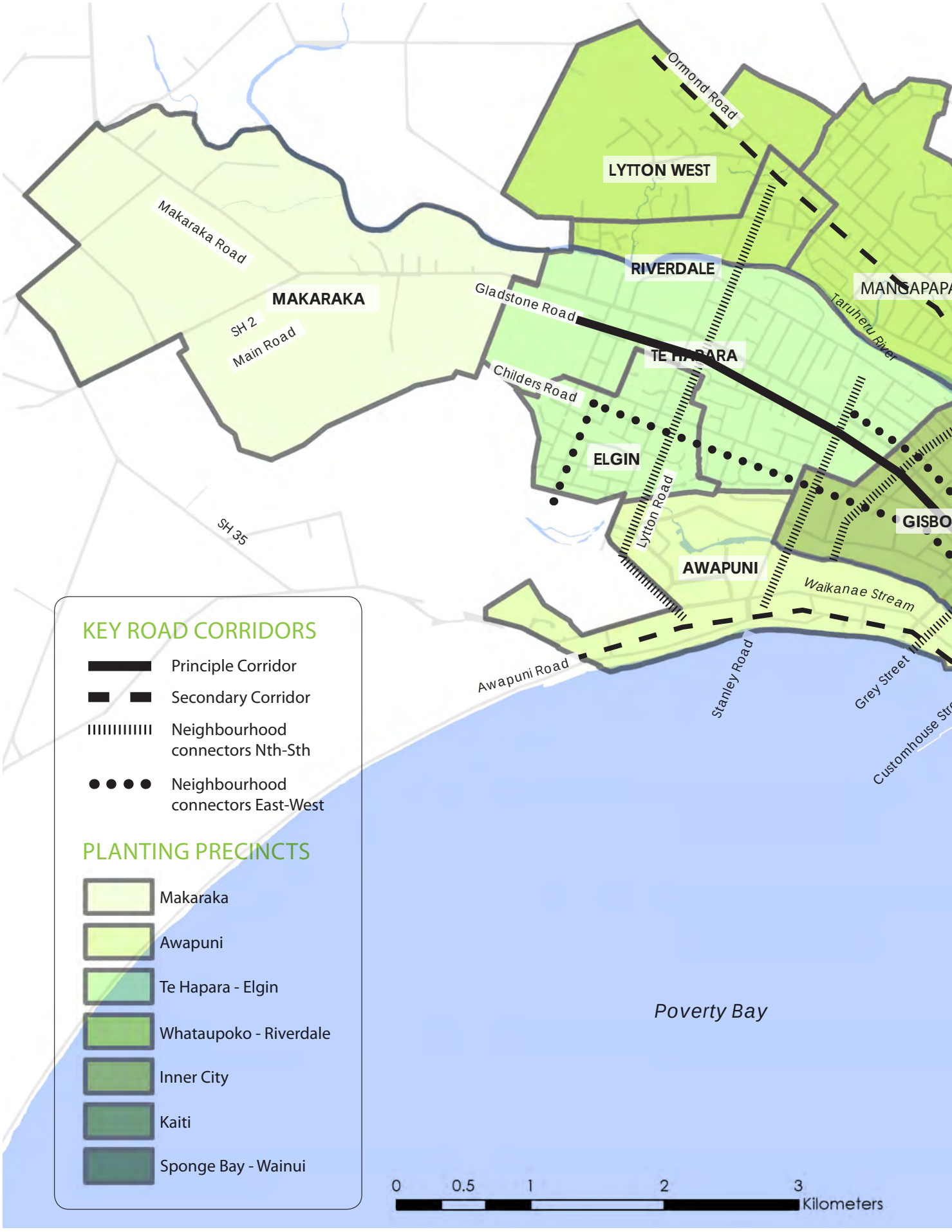
The rest of the city's roads and streets are organised into larger neighbourhood precincts. They are largely consistent areas of similar form and land use and their boundaries are largely defined by natural features (the sea, the city rivers and hills).

STREET GARDENS

Gisborne's Street Garden Plan provides more specific direction for the city's median, roundabout and other planted spaces. This includes:

- ü Location of gardens
- ü Seasonality - winter and summer planting requirements
- ü Species to be planted, how many, planting densities and grade (size)
- ü Timing - when species need to be planted by
- ü Design - how the selected species are to be laid out

GISBORNE STREET TREE PLAN




Roebuck Road
WHATAUPOKO
RNE CITY
Waimata River
INNER KAITI
Rutene Road
OUTER KAITI
KAITI
Wainui Road
Titirangi
TAMARAU
SPONGE BAY - WAINUI

PRINCIPAL CORRIDORS
GLADSTONE - WAINUI

DESCRIPTION

Gladstone and Wainui Road together form a wide transportation axis that spans the city and provides a direct connection to the central business district. Gladstone Road provides an important gateway experience for visitors entering the city through Makaraka. Wainui Road conveys traffic away from the city towards Wainui Beach and the northern coastal townships beyond.

EXISTING TREES

- ü 214 trees identified along this corridor. Queen palms and Mexican fan palms are the main species.
- ü Queen palms are planted to the median along most of Gladstone Road at 20m spacings.
- ü Mexican fan palms are planted to the footpaths within the CBD at 9m spacings.
- ü Most street trees are concentrated along Gladstone Road.

KEY BENEFITS

- ü Change in density of planting reflects the change in urban density.
- ü Consistency in species and tree spacings creates a high level of visual amenity and reinforces the importance of this corridor.
- ü Palms and gardens work together to create a strong arrival experience on Gladstone Road.
- ü Palms reinforce the coastal character of the city.

CONSTRAINTS/ CONSIDERATIONS

- ü There is a gap of almost 900m from Roebuck to Derby where there are no street trees.
- ü No street trees exist along Wainui Road.
- ü Gladstone and Wainui roads have wide carriageways and offer challenges in terms of creating amenable spaces for pedestrians.
- ü Above and below ground services are a major consideration for any future tree planting.
- ü Western boundary to Wainui Road south of Mathews Road - messy and overgrown; juvenile liquidambars planted under power lines will quickly outgrow their locations.

GLADSTONE ROAD – OPPORTUNITIES

A. Gladstone North

Maintain and replace existing palms to median as required. Potential for smaller trees to be planted to roadside berms.

B. Roebuck to Derby

New street trees and gardens to median. Species and planting densities to match Gladstone north. Recommended species:

- ü Arecastrum romanzoffianum

C. Gladstone South

Maintain and replace existing palms as required.

WAINUI ROAD – OPPORTUNITIES

D. Wainui North

New street trees and gardens to median. Species and planting densities to match Gladstone north. Potential for smaller trees to be planted to roadside berms. Recommended species:

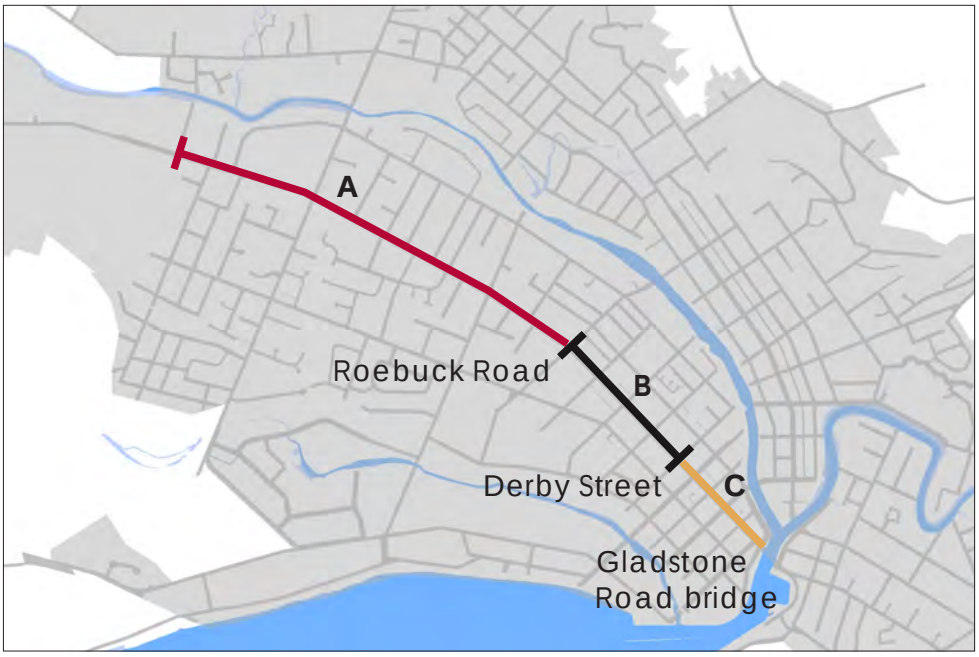
- ü Arecastrum romanzoffianum

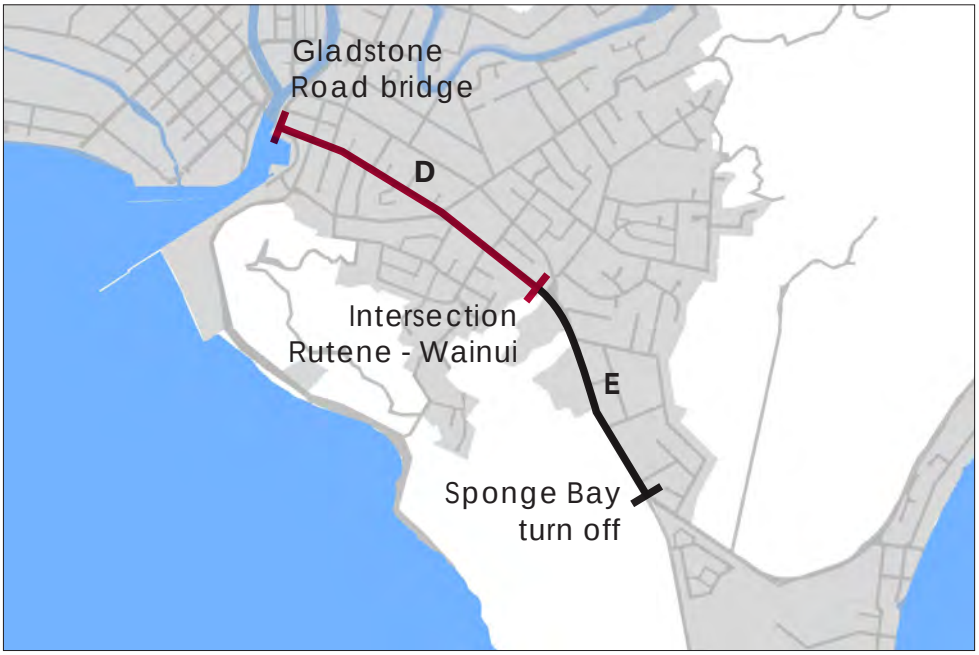
E. Wainui South

New street trees to berms. Removal of existing juvenile liquidambars and replacement with smaller species. Possible species:

- ü Cornus florida 'Cherokee Chief'
- ü Fraxinus pennsylvanica 'Cimmzam'


Gladstone Road
Wainui Road


A
Roebuck Road
B
Derby Street
C
Gladstone
Road bridge


Gladstone
Road bridge
D
Intersection
Rutene - Wainui
E
Sponge Bay
turn off

SECONDARY CORRIDORS
ORMOND - RUTENE

AWAPUNI - CUSTOMHOUSE

DESCRIPTION

These corridors provide alternative ways into and out of the city. They allow heavy vehicle traffic to skirt the CBD. Adjacent land uses are largely residential with some light industry along Awapuni Road.

EXISTING TREES

- ü 273 trees identified along these corridors.
- ü Trees mostly planted to Ormond and Awapuni Roads.
- ü Street trees to half the length of Ormond Road. Mainly a mix of maples and ginkos, interplanted, with irregular spacings.
- ü Irregular tree planting to Awapuni Road. 13 different species recorded. Most common species include Norfolk island hibiscus, Phoenix palm, Windmill palm and Holm oak.

KEY BENEFITS

- ü Ginkos and maples add autumn colour to Ormond Road.
- ü Ginko trees are an appropriate sized tree for the scale of Ormond Road.
- ü Generous turf berm to Ormond road allows for large tree planting.
- ü More closely spaced Ginko trees (10-25m) enhance streetscape amenity and help to balance the scale of Ormond Road.

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CONSTRAINTS/ CONSIDERATIONS

- ü The smell of and mess made by fruits from female Ginkgos on Ormond Road are a prominent nuisance during Autumn.
- ü Staggered planting of maple and Ginkos creates inconsistency in the planting theme along Ormond Road and does not contribute to the structure and visual amenity of the corridor.
- ü Ginkos have been topped on one side of Ormond Road where they grow under power lines. This significantly alters their natural form and reduces their visual appeal and value.
- ü Few trees on Rutene Road.
- ü Lack of consistent tree planting to Awapuni.
- ü No tree planting to Customhouse.

ORMOND ROAD – OPPORTUNITIES

A. Sterling Park to Roebuck: New tree planting.
Possible species:
- ü Acer palmatum
- ü Cercis canadensis 'Texas White'
- ü Liquidambar styraciflua 'Aurora'

ü Liriodendron tulipifera 'Fastigiata'

B. Roebuck to Ormond Road Bridge: Long term strategic removal of Ginkos under power lines. Replacement with smaller tree species that will not interfere with overhead assets. Removal of female Ginkos and replacement with grafted males. Continuation of tree planting.
Possible species:
ü Acer palmatum

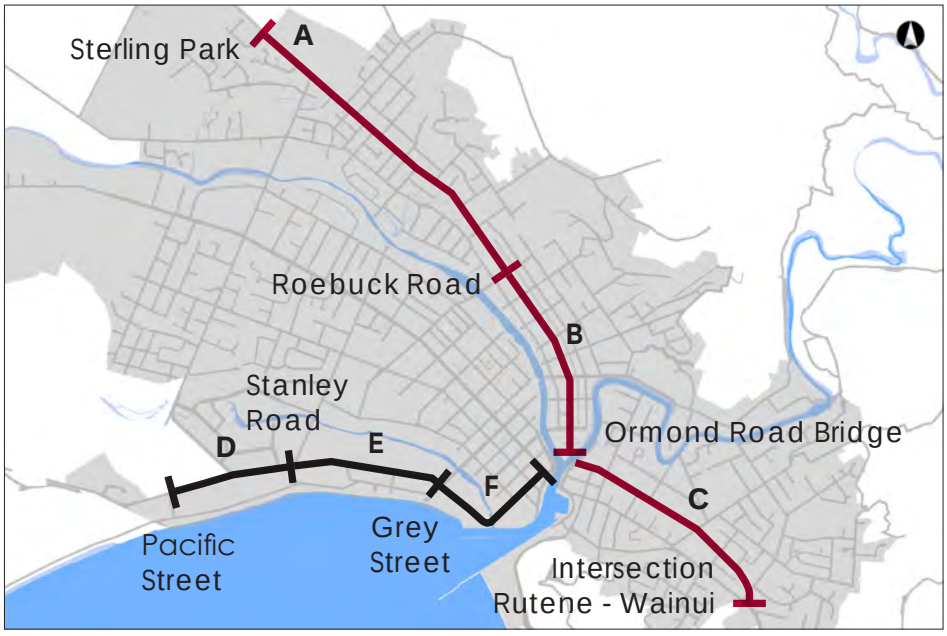
ü Cercis canadensis 'Texas White'

ü Ginkgo biloba (male)

ü Rutene Road - opportunities

C. Rutene Road: New tree planting.
Possible species:
ü Acer palmatum

ü Cercis canadensis 'Texas White'



NEIGHBOURHOOD CONNECTORS
LYTTON, STANLEY, ROEBUCK, GREY, CHILDERS, PALMERSTON

DESCRIPTION

Neighbourhood connectors support good traffic circulation around the city. They connect to the principal corridors, move across suburbs, cross the city's waterways and move efficiently around the CBD.

EXISTING TREES

- ü Grey Street. 68 trees identified representing 4 main species: Chestnut (Taruheru River to Palmerston), Melia (Palmerston to Gladstone), Queen palm (Gladstone to Childers) and Pohutukawa (Childers to Midway Beach).
- ü Palmerston Road. 33 trees identified. Melias planted with reasonable consistency from Peel street to Roebuck Road.
- ü 66 trees (comprising 17 species) planted sporadically across other neighbourhood connectors.

KEY BENEFITS

- ü Consistency in street tree planting along Palmerston Road and Grey Street.
- ü Pohutukawas on Grey Street reinforce regional coastal theme and connect beach to city.

CONSTRAINTS/ CONSIDERATIONS

- ü Four different species to Grey Street reduces street legibility.
- ü Pohutukawa to Grey Street are small for the size of the corridor and irregularly spaced.
- ü Berries dropped from Melias create a slip hazard for pedestrians on Palmerston Road.
- ü Lack of consistency in tree planting across most streets.

LYTTON ROAD – OPPORTUNITIES

A. Sterling Park to Roebuck: New tree planting.
Possible species:
- ü Acer rubrum 'Bowhall'
- ü Lagerstroemia indica 'Kimono'
- ü Zelkova serrata

B. Gladstone to Awapuni: New tree planting.
Possible species:
- ü Lagerstroemia indica 'Kimono'
- ü Platanus acerifolia 'Pyramidalis'

STANLEY ROAD – OPPORTUNITIES

C. North end to Gladstone: New tree planting.
Possible species:
- ü Cornus kousa
- ü Fraxinus excelsior 'Purple Spire'

D. Gladstone to Awapuni: New tree planting.
Possible species:
- ü Ulmus parviflora "Frontier'
- ü Callistemon 'Western Glory'

F. Awapuni and Customhouse: New tree planting.
Possible species:
- ü Metrosideros excelsior 'Maori Princess'

ROEBUCK ROAD – OPPORTUNITIES

E. North end to Childers: New tree planting.
Possible species:
- ü Carpinus betulus 'Fastigiata'
- ü 'Pyrus calleryana 'Candelabra'

F. Childers to Anzac: Maintain and replace existing Butia as appropriate.
Possible species:
- ü Butia capitata
- ü Meryta sinclairii

GREY STREET – OPPORTUNITIES

G. North end to Palmerston: Maintain and replace existing horse chestnut as appropriate.
Recommended species:
- ü Aesculus hippocastanum

H. Palmerston to Gladstone: Maintain and extend planting of queen palms.
Recommended species:
- ü Arecastrum romanzoffianum

I. Gladstone to beachfront: Further infill planting of

Pohutukawa to provide greater canopy structure and continuity along street.
Recommended species:
ü Metrosideros excelsior 'Maori Princess'

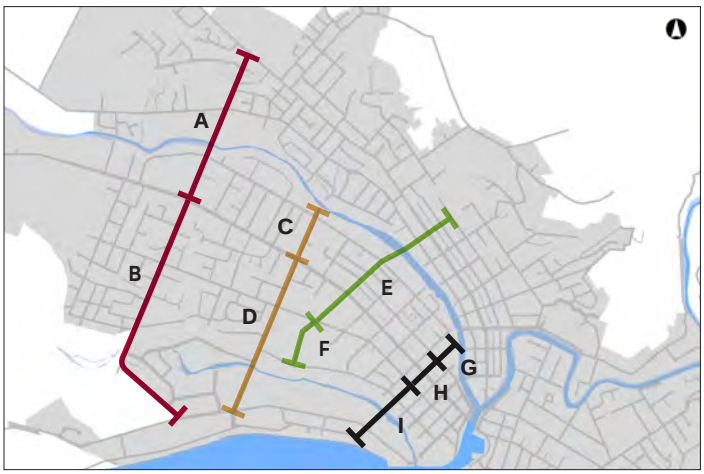
CHILDERS ROAD – OPPORTUNITIES

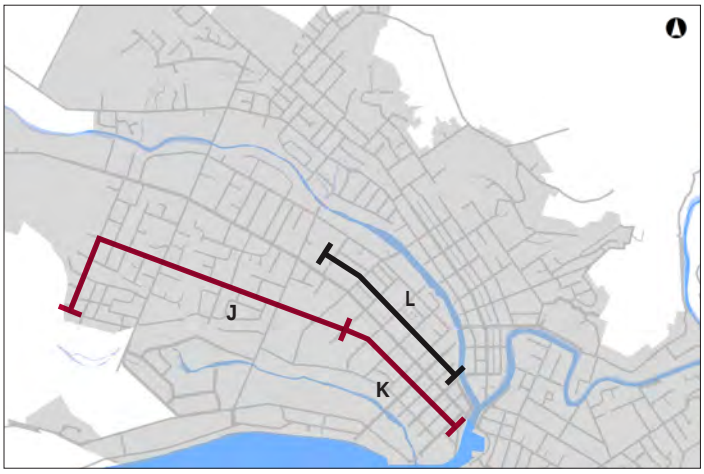
J. Airport to Disraeli: Development of a consistent airport to city street tree corridor.
Possible species:
ü Albizzia julibrissen 'Red Silk'

ü Cornus florida 'Cherokee Chief'

K. Disraeli to Reads Quay: New tree planting.
Possible species:
ü Liriodendron tulipifera 'Fastigiata'

ü Metrosideros excelsior 'Vibrance'





URBAN PRECINCTS
MAKARAKA

DESCRIPTION

Makaraka is a small semi-rural community to the west of Gisborne city. Residential, commercial and industrial land uses are situated close to the intersection of Makaraka and Main Roads, which receive traffic from both the south and the west. As such, the community is a key arrival point for both rural residents and visitors travelling into the city.

46 street trees have been identified in Makaraka with most occuring along local roads. The most common species in this area are Akeake (Dodonaea viscosa) and Ginkgo (Gingko biloba).

Main Road is a significant road within the community. Only a handful of street trees are found along its length.

KEY BENEFITS

- ü Main Road is an important arrival corridor for local and visiting traffic.
- ü Makaraka retains a strong rural character from its immediate surrounds.
- ü The commercial hub around the Main/Makaraka Road intersection provides a strong focal point for the community.
- ü The productive loams of the Poverty Bay Flats allow for a wide selection of tree species.

KEY CONSIDERATIONS

- ü Underground and overhead infrastructure found on north side of Main Road.
- ü Shallow culverts to verges along Main Road limit the selection and number of street trees able to be planted.

OPPORTUNITIES

Improve arrival experience

- ü Consider the potential for planting street trees to provide structure, scale and a consistent visual effect along Main Road.
- ü Recommended species

RECOMMENDED SPECIES

Botanical name	Common name	10yr height	10yr spread	Berm width			
				1.2m-1.7m	1.7m-3m	>3m	Powerlines
Carpinus betulus 'Fastigiata'	Upright Hornbeam	8m	4m	leaf			
Dodonaea viscosa	Akeake	2m	2m		leaf		leaf
Lagerstroemia indica	Crepe Myrtle	3m	3m	leaf			leaf
Nyssa sinensis	Chinese Tupelo	5m	4m		leaf		
Platanus acerifolia 'Pyramidalis'	Upright London Plane	10m	6m			leaf	
Zelkova serrata	Japanese Zelkova	8m	4m		leaf		

URBAN PRECINCTS
TE HAPARA - ELGIN

DESCRIPTION

Te Hapara and Elgin together form a relatively consistent suburban precinct bounded to the north by the Taruheru River, the city's commercial zones to the east, Awapuni industrial land uses to the south and an urban green belt (Gisborne Park Golf Club) to the west.

Residential living is the predominant land use, with reserves, schools and local shops spaced throughout, connected by a logical hierarchy of roads. Local roads typically have narrow carriageways with wide berms (up to 6m).

410 street trees comprising 56 species have been identified throughout this precinct. 43 species have 10 or less specimens, indicating a reasonably unstructured approach to previous species selection and planting. The most common species planted are Flowering cherry (Prunus blireana) and Melias (Melia azedarach).

KEY BENEFITS

ü Local roads offer excellent opportunities for continued street tree planting. Wide berms can be planted with a wider range of species to enhance the appeal, environmental comfort and human scale of much of this precinct.

KEY CONSIDERATIONS

ü There are many different tree species growing within this precinct and this limits the potential to create a more visually consistent and legible street tree network.

ü Few streets and roads have been fully planted with street trees. The impact that one or two trees have on a street is limited.

ü Pruning to many street trees under power lines has adversely affected their form and the value they deliver to the neighbourhood.

ü Some species are considered less appropriate as street trees. These include Silver birch (allergenic), and Spindle tree (weedy).

OPPORTUNITIES

Consolidate existing and build street tree numbers.

ü Focus future planting on a smaller range of species to improve the consistency and character of the precinct.

ü Limit replacement and new planting to one or two species per street to create a more coherent street environment.

ü Gradual replacement of poorly performing or unwanted species with more appropriate species.

ü Infill planting to gaps between street trees.

ü Further tree planting to precinct.

RECOMMENDED SPECIES

Botanical name	Common name	10yr Height	10yr Spread	Berm width			
				1.2m-1.7m	1.7m-3m	>3m	Powerlines
Alectryon excelsus	Titoki	7m	6m		leaf		
Dodonaea viscosa	Akeake	2m	2m		leaf		leaf
Fraxinus pennsylvanica 'Cimmzam'	Cimmaron Ash Tree	8m	5m			leaf	
Jacaranda mimosifolia	Jacaranda	7m	5m		leaf		
Liquidambar styraciflua 'Aurora'	American Sweetgum	4m	3m		leaf		
Melia azedarach	Indian Bean Tree	7m	6m		leaf		
Meryta sinclairii	Puka	7m	6m		leaf		
Nestegis cunninghamii	Black Maire	10m	6m		leaf		
Podocarpus totara	Totara	6m	4m			leaf	
Prunus serrulata 'Shirotae'	Mt Fuji Cherry	6m	4m		leaf		
Pyrus calleryana 'Bradford'	Ornamental Pear	10m	6m		leaf		
Sophora microphylla var. fulvida	Kowhai	3m	3m	leaf			leaf
Sophora tetraptera	North Island Kowhai	4m	4m	leaf			
Vitex lucens	Puriri	8m	4m		leaf		

URBAN PRECINCTS
WHATAUPOKO - MANGAPAPA

DESCRIPTION

The four suburbs of Whataupoko, Mangapapa, Lytton West and Riverdale comprise a planting precinct that stretches from the Waimata River to the productive rural landscape north of Cameron and Hansen Roads. The Taruheru River and low coastal foothills form natural boundaries to the southwest and northeast respectively.

Ormond Road provides a central axis along the length of the precinct and all other roads are aligned in grid-like fashion to this axis.

1343 street trees comprising 92 species have been identified throughout this precinct. 69 species have 10 or less specimens. The most common species planted are Liquidambar (Liquidambar styraciflua), Flowering cherry (Prunus blireana), Silver birch (Betula pendula) and Melias (Melia azedarach).

KEY BENEFITS

ü Many local roads offer good opportunities for successful street tree planting. Wide berms and small carriageways provide a range of planting options and enable trees to make a strong contribution to neighbourhood amenity values.

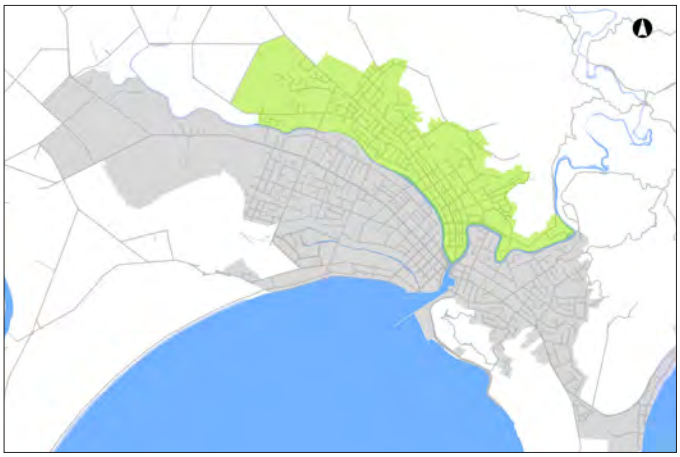
ü There is an even distribution of trees growing throughout the precinct and many of these provide a good basis for further planting.

ü Species have been planted with consistency along some streets and this improves visual amenity and legibility.

KEY CONSIDERATIONS

ü The wide variety of tree species growing within this precinct limits the potential to create a more visually consistent and legible street tree network.

ü Several species are considered less appropriate as street trees. These include Silver birch (allergenic), Rhus (allergenic) and Phoenix palms (weedy).



OPPORTUNITIES

Continue to build and improve street tree plantings

ü Shore up appropriate species with further planting.

ü New planting to empty streets.

ü Strategic reduction in species numbers.

ü Gradual removal and replacement of inappropriate species.

RECOMMENDED SPECIES

Botanical name	Common name	10yr Height	10yr spread	Berm width			
				1.2m-1.7m	1.7m-3m	>3m	Powerlines
Acer palmatum	Japanese Maple	5m	4m		leaf		
Acer rubrum x freemanii 'Jeffersred'	Freeman Maple	12m	5m			leaf	
Alectryon excelsus	Titoki	7m	6m		leaf		
Cerciscanadensis'TexasWhite'	Texas Whitebud	4m	3m	leaf			leaf
Cornus kousa	Chinese Dogwood	4m	4m	leaf			leaf
Dodonaea viscosa	Akeake	2m	2m		leaf		leaf
Fraxinus griffithii	Evergreen Ash	3m	2m	leaf			
Ginkgo biloba (male)	Maidenhair tree	7m	4m			leaf	
Ginkgo 'Jade Butterflies'	Maidenhair tree	3m	2m		leaf		leaf
Jacaranda mimosifolia	Jacaranda	7m	5m		leaf		
Liquidambar styraciflua 'Worplesdon'	American Sweetgum	6m	5m		leaf		
Melia azedarach	Indian Bean Tree	7m	6m		leaf		
Nyssa sinensis	Chinese Tupelo	5m	4m		leaf		
Platanusorientalis'Fitzherbert'	Cut Leaf Plane	7m	7m		leaf		
Pyrus calleryana	Ornamental Pear	5m	5m		leaf		
Sophora microphylla var. fulvida	Kowhai	3m	3m	leaf			leaf

URBAN PRECINCTS
INNER CITY

DESCRIPTION

The Inner City represents Gisborne's core commercial area. Three prominent waterways (Taruheru and Turanganui Rivers, and Waikanae Stream) define its east, south and west boundaries while Roebuck Road defines its northern extent.

Gladstone Road provides a strong central axis which all other roads are aligned to in a strong grid layout.

217 street trees comprising 31 species have been identified throughout the precinct. 26 species have 10 or less specimens. The most common species planted (excluding the main road corridors outlined above) are Queen palm (Arecastrum romanzoffianum), Flowering cherry (Prunus blireana), and Jacarandah (Jacaranda mimosaefolia).

Queen palms dominate Peel Street between Reads Quay and Childers Road while over half of Inner City street trees are distributed throughout the precinct's two residential areas.

KEY BENEFITS

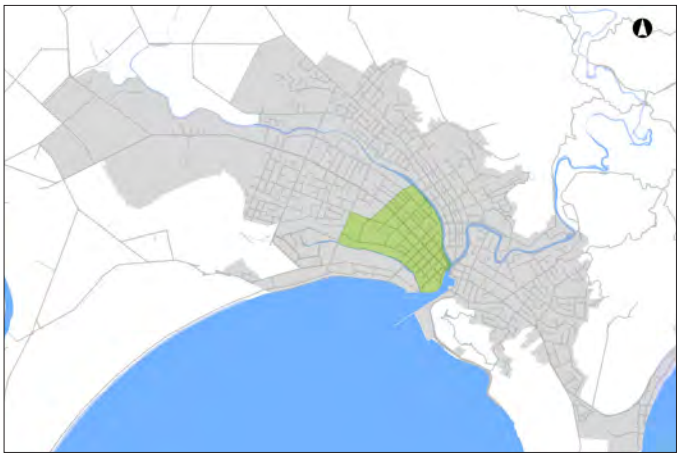
ü Excellent planting of Queen palms to Peel Street. Scale of palms matches size of character of heritage architecture.

KEY CONSIDERATIONS

ü Scattered and diverse plantings throughout the two residential areas limits the potential to create a more visually consistent and legible street tree network.

ü Disraeli, Carnavon, Cobden, Bright and Lowe Streets have few street trees.

ü The urban environment presents further challenges in terms of restricted space, impervious hard surfacing, underground and overhead assets, highly modified substrates and higher ambient temperatures.



OPPORTUNITIES

Consolidate, simplify

ü Shore up appropriate species with further planting.

ü New planting to empty streets or between gaps in existing street trees.

ü Strategic reduction in species numbers.

ü Ensure street trees selected are hardy and appropriate to the highly modified urban environment.

RECOMMENDED SPECIES

Botanical name	Common name	10yr Height	10yr Spread	BERM WIDTH			
				1.2m-1.7m	1.7m-3m	>3m	Powerlines
Alectryon excelsus	Titoki	7m	6m		leaf		
Carpinus betulus 'Fastigiata'	Upright Hornbeam	8m	4m	leaf			
Dodonaea viscosa	Akeake	2m	2m		leaf		leaf
Fagus sylvatica 'Dawyck Green'	Upright Green Beech	8m	2m	leaf			
Fraxinus pennsylvanica 'Cimmzam'	Cimmaron Ash Tree	8m	5m		leaf		
Jacaranda mimosifolia	Jacaranda	7m	5m		leaf		
Liquidambarstyraciflua'Aurora'	American Sweetgum	4m	3m	leaf			
Liriodendron tulipifera 'Fastigiata'	ArnoldColumnarTulip	5m	1.5m	leaf			
Metrosideros'ScarletPimpernell'	Pohutukawa	5m	4m		leaf		leaf
Prunus serrulata 'Shirotae'	Mt Fuji Cherry	5m	5m		leaf		leaf
Pyrus calleryana 'Candelabra'	Ornamental Pear	10m	4m	leaf			
Quercus robur 'Fastigiata'	Columnar English Oak	6m	2m		leaf		
Sophoramicrophyllavar.fulvida	Kowhai	3m	3m	leaf			leaf

URBAN PRECINCTS
AWAPUNI

DESCRIPTION

Awapuni is located to the south of the city between the natural boundaries of Waikanae Stream and Waikanae beach. Awapuni Road is the main road corridor and it bisects the precinct in a roughly east-west direction.

Industrial land mostly occupies the area north of Awapuni Road while residential development and public reserves are located along the beach front.

The beach front is a popular destination for local residents and visitors. It is within walking distance of the city and retains a high level of amenity from both the natural beauty of the coastal landscape and from the range of community facilities provided.

Soils within the precinct are mainly composed of Opoutama sands with small sections close to the Waikanae stream composed of clay loams.

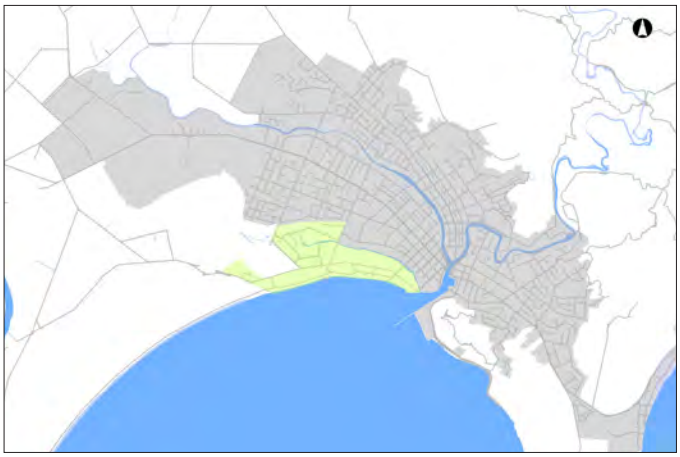
56 street trees comprising 10 species have been identified throughout this precinct (excluding Awapuni Road). Only two species have more than 10 specimens. The most common species planted arePohutukawa(Metrosiderosexcelsa),andWindmill palm (Trachycarpus fortunei).

KEY BENEFITS

- ü High amenity landscape due to coastal and reserve land.
- ü Reasonably compact streetscape on Salisbury including speed humps to reduce traffic speed - ideal pedestrian use.

KEY CONSIDERATIONS

- ü Salt laden wind and sand based soils require hardy species.
- ü Limited tree planting to streets. Limited shade to residential streets during summer time.
- ü Limited planting to industrial sections.



OPPORTUNITIES

Consolidate, simplify

- ü Shore up appropriate species with further planting.
- ü New planting to gaps in existing street trees.
- ü Drought hardy and salt tolerant species.

RECOMMENDED SPECIES

Botanical name	Common name	10yr height	10yr spread	Berm width			
				1.2m-1.7m	1.7m-3m	>3m	Powerlines
Calistemon 'Western Glory'	Bottlebrush	2.5m	2m	leaf			leaf
Fraxinus pennsylvanica 'Cimmzam'	Cimmaron Ash Tree	8m	5m		leaf		
Lagerstroemiaindica'Kimono'	Crepe Myrtle	3m	3m	leaf			leaf
Melia azedarch	Indian Bean Tree	7m	6m		leaf		
Meryta sinclairii	Puka	4m	3m		leaf		
Metrosideros 'Mistral'	Pohutukawa (Northern Rata Cross)	5m	4m		leaf		
Quercus robur 'Fastigiata'	Columnar English Oak	6m	2m	leaf			
Ulmus parvifolia	Chinese Elm	6m	5m		leaf		

URBAN PRECINCTS
KAITI

DESCRIPTION

Kaiti precinct is made up of four suburbs located to the east of the city centre: Kaiti, Inner Kaiti, Outer Kaiti and Tamarau. The precinct is contained by coastal foothills and Titirangi maunga to the west and east, and Waimata River to the north.

Rutene, Wainui and de Lautour roads provide the main organising axes for local roads. The surrounding hills and river also strongly influence the orientation of local roads and cul de sacs are found throughout the area.

The predominant land use is residential interspersed with small suburban commercial zones, public reserves and schools.

Underlying soils are mainly composed of silt and clay loams. These soils support a wide range of tree species. Many streets have been planted quite diversely and many specimens are in excellent health. Inner Kaiti has particularly benefited from structured tree planting with many streets being full planted out. 40% of the precinct's trees are within this suburb.

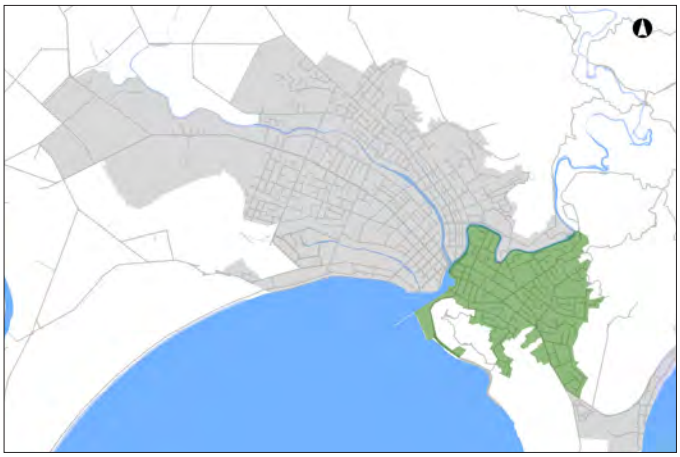
785 street trees comprising 56 species have been identified throughout this precinct. 41 species have 10 or less specimens. The most common species planted are Liquidambar (Liquidambar styraciflua), Flowering cherry (Prunus blireana) and Melias (Melia azedarach).

KEY BENEFITS

- ü Several streets have well structured tree planting along their entire length.
- ü Good street sizes for creating high amenity road corridors.

KEY CONSIDERATIONS

- ü Many trees under power lines have been repeatedly cut back.
- ü Several inappropriate tree species: birch, spindle, oleander, rhus.
- ü Streets often contain a variety of species which can limit their contribution to streetscape amenity and legibility.



OPPORTUNITIES

Consolidate, simplify, build

- ü Gradual replacement of inappropriate specimens.
- ü Strategic reduction in species numbers.
- ü Build street tree stock across the whole precinct with particular focus on Kaiti, Outer Kaiti and Tamarau.

RECOMMENDED SPECIES

Botanical name	Common name	10yr height	10yr spread	Berm width			
				1.2m-1.7m	1.7m-3m	>3m	Powerlines
Albizzia julibrissen 'Red Silk'	Silk tree	5m	4m		leaf		
Alectryon excelsus	Titoki	7m	6m		leaf		
Cercis canadensis 'Texas White'	Texas Whitebud	4m	3m	leaf			leaf
Cornus kousa	Chinese Dogwood	4m	4m	leaf			leaf
Fraxinus griffithii	Evergreen Ash	3m	2m	leaf			
Fraxinus pennsylvanica 'Cimmzam	Cimmaron Ash Tree	8m	5m		leaf		
Idesia polycarpa	Wonder Tree	7m	6m			leaf	
Jacaranda mimosifolia	Jacaranda	7m	5m		leaf		
Liquidambar styraciflua 'Worplesdon'	American Sweetgum	4m	3m		leaf		
Melia azedarch	Indian Bean Tree	7m	6m		leaf		
Platanusacerifolia'Pyramidalis'	Upright London Plane	10m	6m		leaf		
Prunus serrulata 'Shirotae'	Mt Fuji Cherry	5m	5m		leaf		leaf
Prunussub.'AutumnalisRosea	Flowering Cherry	5m	4m		leaf		leaf
Prunus 'Aokautere Gold'	Prunus 'Aokautere Gold'	4m	3m		leaf		leaf
Pyrus calleryana	Ornamental Pear	5m	5m		leaf		
Sorbus aria 'Lutescens'	Silver Whitebeam	4m	3m		leaf		

URBAN PRECINCTS
SPONGE BAY - WAINUI

DESCRIPTION

This precinct comprises the three distinct neighbourhoods of Sponge Bay, Wainui and Okitu. Together they extend from the coastal flats south of Titirangi and along the narrow coastal margin of Wainui Beach. Wainui and Moana Roads provide the main transport axis across these neighbourhoods. Land uses are predominantly residential.

The underlying soils of Sponge Bay are mainly composed of silt loams while Wainui and Okitu are largely comprised of sandy loams.

Wainui beach is a popular destination for local residents and visitors. It is connected to the city by a dedicated cycleway and retains a high level of amenity from both the natural beauty of the coastal landscape.

160 trees have been identified throughout this precinct. The most common species planted are Pohutukawa (Metrosideros excelsa), and Washingtonia palms, reflecting their ability to grow successfully in challenging coastal conditions.

KEY BENEFITS

ü High amenity landscape due to coastal setting

ü Small residential roads offer an ideal scale and setting for informal pedestrian use and activity.

KEY CONSIDERATIONS

ü Many trees under power lines have been repeatedly cut back.

ü Several inappropriate tree species: birch, spindle, oleander, rhus.

ü Streets often contain a variety of species which can limit their contribution to streetscape amenity and legibility.

OPPORTUNITIES

Consolidate, simplify, build

ü Gradual replacement of smaller or inappropriate specimens.

ü Build street tree stock across the whole precinct with particular focus on trees that are coastal hardy and trees that can provide shade

RECOMMENDED SPECIES

Botanical name	Common name	10yr height	10yr spread	Berm width			
				1.2m-1.7m	1.7m-3m	>3m	Powerlines
Calistemon 'Western Glory'	Bottlebrush	2.5m	2m	leaf			leaf
Fraxinus pennsylvanica 'Cimmzam'	Cimmaron Ash Tree	8m	5m		leaf		
Lagerstroemiaindica'Kimono'	Crepe Myrtle	3m	3m				
Melia azedarch	Indian Bean Tree	7m	6m	leaf			leaf
Meryta sinclairii	Puka	4m	3m		leaf		
Metrosideros 'Mistral'	Pohutukawa (Northern Rata Cross)	5m	4m		leaf		
Quercus robur 'Fastigiata'	Columnar English Oak	6m	2m		leaf		
Ulmus parvifolia	Chinese Elm	6m	5m	leaf			
Sorbus aria 'Lutescens'	Silver Whitebeam	4m	3m		leaf		

RURAL TOWNSHIPS
MANUTUKE

DESCRIPTION

Manutuke is a small settlement with a population of 522 approximately 8km west of Gisborne city. Residential development and community services are largely found along Waingake and Whakato roads with their junction creating an informal focal point for the settlement.

Manutuke retains an open, rural character which is strongly influenced by generous section sizes, wide carriageways and the surrounding productive landscape. The nearby Te Arai River is a prominent and highly valued natural feature to the Manutuke community.

Soils are composed mainly of silt loams which are able to support a wide range of tree species.

Only eight trees have been recorded for Manutuke and these have a limited impact on the visual amenity of the township.

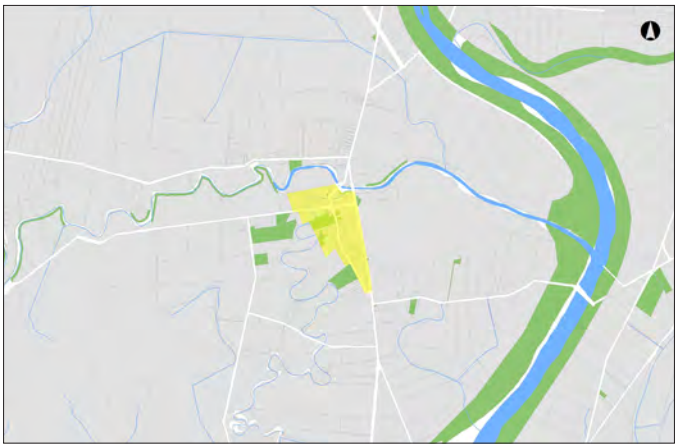
KEY BENEFITS

ü Good soils for planting.

ü Strong connection to surrounding rural landscape.

KEY CONSIDERATIONS

ü Overhead services and berm width will pose some limitations on species selection and placement.



OPPORTUNITIES

ü Smaller trees where limited space allows.

ü Moderately sized trees where berm widens on Whakato Road.

ü Focus street tree planting to Waingake and Whakato roads

RECOMMENDED SPECIES

ü Alectryon excelsus

ü Meryta sinclairii

ü Pyrus calleryana

ü Sophora microphylla var. fulvida

ü Sophora tetraptera

RURAL TOWNSHIPS
TE KARAKA

DESCRIPTION

Te Karaka township is located 24km inland from Gisborne city. Situated just off State Highway 2 and adjacent to the Waipaoa River, the township has a population of 480.

The settlement is composed of residential development clustered around a core rural commercial hub. Neighbourhood soils are mainly composed of clay and silt loams. These soils retain moderate to high soil moisture and are typically deep and well drained.

Te Karaka maintains a strong rural character from surrounding cropping and pastoral land. Main and Cliff Roads provide important accessways and arrival experiences into the township from Matawai Road.

There are 50 street trees spread across 18 species throughout the township. Local roads are typically narrow with generous berms, allowing for a wide selection of species. Several large trees exist within the road reserve and make a valuable contribution to the overall appeal of the township.

KEY BENEFITS

- ü Wide berms allow for larger tree species.
- ü Existing trees provide excellent base from which to build on.
- ü Versatile soils allow for a wide range of tree species to be grown.
- ü Minimal modification to soils along smaller roads.

KEY CONSIDERATIONS

- ü Some underground and overhead services, especially along Main and Cliff Roads.
- ü Shallow culverts along some roads pose some constraints to placement and selection.

OPPORTUNITIES

- ü More consistency in street tree selection.
- ü New planting to gaps in existing street trees.

RECOMMENDED SPECIES

- ü Acer palmatum
- ü Knightia excelsa
- ü Liquidambar styraciflua
- ü Melia azedarch
- ü Podocarpus totara
- ü Prunus serrulata 'Shirotae'
- ü Prunus 'Aokautere Gold
- ü Pyrus calleryana
- ü Quercus robur 'Fastigiata'
- ü Styrax japonica
- ü Zelkova serrata

RURAL TOWNSHIPS
PATUTAHI

DESCRIPTION

Patutahi is an inland township located on the western margin of the Poverty Bay Flats approximately 8km northwest of Gisborne city. Patutahi has a population of 345. Local roads are typically narrow with berms up to 10m wide. Shallow culverts are a common drainage feature. There are few underground and overhead services.

Neighbourhood soils are mainly composed of deep clay and silt loams with moderate to high soil moisture profiles.

The settlement maintains a strong rural character, dominated by high producing exotic grassland, short rotation cropland, vineyards and other perennial crops. The distinct grid-like pattern in the surrounding cropland is reinforced

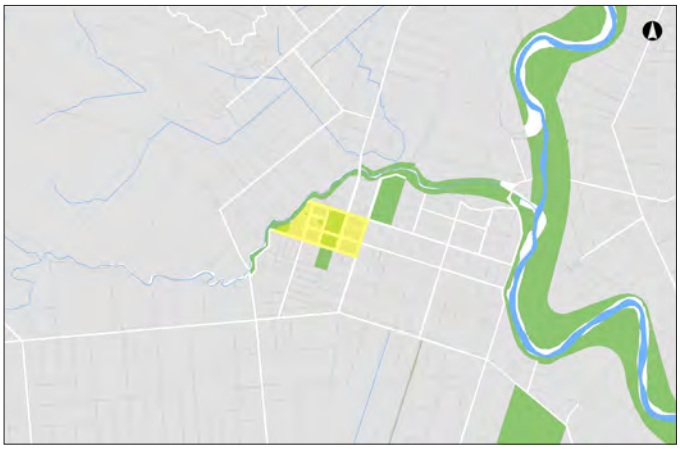
Only 20 trees are spread across the township and these have a limited impact on the visual amenity of the township.

KEY BENEFITS

- ü Few services to constrain tree selection or location.
- ü Wide berms offer plenty of space for a range of species.
- ü Long road corridors offer excellent potential to create avenue plantings.

KEY CONSIDERATIONS

- ü Species will need to tolerate higher soil moisture conditions in order to adapt to varying drainage conditions.
- ü Plant away from culverts.



OPPORTUNITIES

- ü New tree planting to increase amenity and reinforce rural character.
- ü Formal avenue planting to reinforce grid pattern of township roads and surrounding landscape.

RECOMMENDED SPECIES

- ü Acer palmatum
- ü Acer rubrum x freemanii 'Jeffersred'
- ü Cornus florida 'Cherokee Chief'
- ü Fraxinus excelsior 'Purple Spire'
- ü Fraxinus velutina
- ü Jacaranda mimosaefolia
- ü Jacaranda mimosifolia
- ü Nyssa sylvatica
- ü Styrax japonica

RURAL TOWNSHIPS
MATAWAI

DESCRIPTION

Matawai is situated within rolling hill country on the upper reaches of the Motu River 70km northwest of Gisborne city. Sitting on State Highway 2, the township is a popular stopping place for travellers moving into and out of the Bay of Plenty. Matawai is also the gateway to the Motu Falls and the Motu Trails.

The township is compact, with a small residential zone surrounding a rural commercial hub. The main road corridor is Matawai Road (SH2), which has a wide carriageway and narrow grass berms. Local roads are smaller with wider berms. Shallow culverts are notable drainage features.

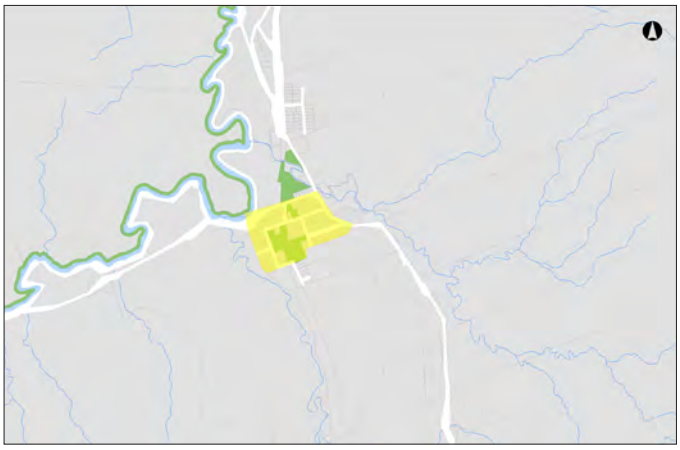
No street trees have been recorded within the road reserves.

KEY BENEFITS

- ü Wide carriageway to Matawai Road allows for plenty of clearance for tree canopies.
- ü Wide turf berm to side roads allows for a wider range of tree species.
- ü Higher rainfall to inland hill country is likely to lessen the severity of drought.

KEY CONSIDERATIONS

- ü Matawai Road poses several constraints to tree planting including underground and overhead services, narrow turf berms and potentially modified soils. Street tree planting will likely require a greater degree of investment along this corridor.
- ü Culverts to berm on local roads.
- ü Tree species will need to adapt to colder winter conditions.



OPPORTUNITIES

- ü Consider opportunities for street tree planting along Matawai Road to reinforce township as a destination.
- ü New street tree planting to local roads.

RECOMMENDED SPECIES

- ü Knightia excelsa
- ü Nyssa sinensis
- ü Pyrus calleryana 'Candelabra'
- ü Quercus robur 'Fastigiata'
- ü Ulmus procera 'Louis van Houtte'

RURAL TOWNSHIPS
UAWA/TOLAGA BAY

DESCRIPTION

Uawa/Tolaga Bay is a coastal township of 768 people, located 55km north of Gisborne city. The lower reach of the Uawa River and the Tolaga Bay beach front provide natural boundaries to the township. These two natural features have a strong influence on the character of the township. Soils are mainly composed of sand or sandy loams.

Cook Street is the main road corridor which runs through the township's commercial centre. The carriageway is wide with angle parking and generous pedestrian paving to both sides. Local roads are typically narrow with very wide turf berms. With few overhead and underground services present, these berms are well suited to a wide range of tree sizes and types.

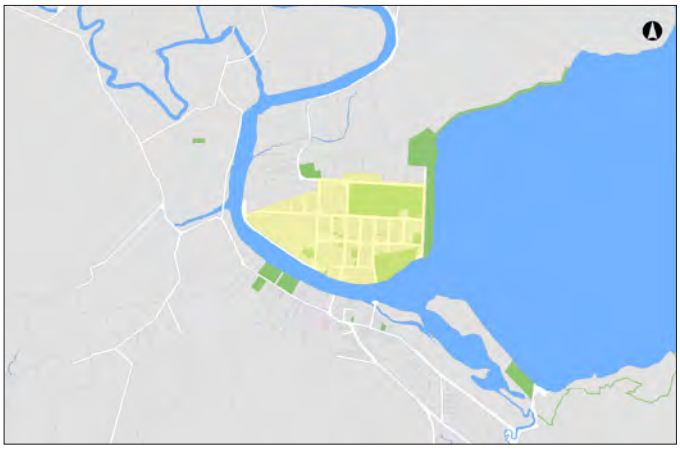
148 street trees comprising 39 species have been identified throughout this township. Only two species have more than 10 or more specimens. These are Pohutukawa (Metrosideros excelsa) and Oleander (Nerium oleander). These species are particularly well adapted to the dry sandy conditions in the township. Other drought hardy species such as Liquidambar, Melia and conifers have also grown well in these conditions.

KEY BENEFITS

- ü Coastal landscape character adds value to township.
- ü Wide berms provide the unique setting to grow a more diverse selection of trees including larger specimens.
- ü Excellent examples of large healthy street trees across the township.
- ü Few overhead and underground services present.

KEY CONSIDERATIONS

- ü Salt laden wind and sand based soils require coastal and drought hardy species.
- ü Trees are distributed across the township and provide limited structure and coverage to each road corridor. Limited shade provision along local roads.



OPPORTUNITIES

- ü More structured planting.
- ü More locally growing native species.
- ü Drought hardy and salt tolerant species.

RECOMMENDED SPECIES

- ü Alectryon excelsus
- ü Banksia integrifolia
- ü Fraxinus pennsylvanica 'Cimmzam'
- ü Idesia polycarpa
- ü Lagerstroemia indica 'Kimono'
- ü Liquidambar styraciflua 'Worplesdon'
- ü Melia azedarch
- ü Meryta sinclairii
- ü Metrosideros excelsior 'Maori Princess'
- ü Metrosideros excelsior 'Vibrance'
- ü Nestegis cunninghamii

RURAL TOWNSHIPS
TOKOMARU BAY

DESCRIPTION

Tokomaru Bay is a coastal township with a population of 390, located 90km north of Gisborne city. While the township is spread along the coastal margin of the bay, much of it is found close to commercial zones situated on either side of the Mangahauini River.

Being so close to the beachfront, the township retains a strong coastal character. Soils are composed of fine alluvial gravels from the Mangahauini floodplain. Sand is also likely to be present in these soils.

State highway 35 cuts through the commercial zone and provides an opportunity for travellers to stop at the township. Tokomaru Bay wharf and Te Puka Tavern also provide visitor destination points to the north of the bay.

No street trees have been recorded within the road reserves.

KEY BENEFITS

- ü Coastal landscape character adds value to township.
- ü Wide turf berm to side roads allows for a wider range of tree species.
- ü Few overhead and underground services present.

KEY CONSIDERATIONS

- ü Salt laden wind and sand based soils require coastal and drought hardy species.

OPPORTUNITIES

- ü More locally growing native species.
- ü Drought hardy and salt tolerant species.

RECOMMENDED SPECIES

- ü Banksia integrifolia
- ü Callistemon 'Western Glory'
- ü Meryta sinclairii
- ü Metrosideros excelsior 'Maori Princess'
- ü Metrosideros excelsior 'Vibrance'
- ü Podocarpus totara

RURAL TOWNSHIPS
TE PUIA SPRINGS

DESCRIPTION

Te Puia Springs is a small inland settlement 101km north of Gisborne city. State Highway 35 runs through the settlement and is its main road corridor.

Most development is concentrated along State Highway 35. A small rural commercial zone includes a tavern and general store. Other notable features along this key road corridor are the Te Puia Springs hospital, nearby lake and surrounding reserve land.

The settlement retains a comfortable sense of enclosure from the surrounding hill country and forestry, amenity planting along the road reserve and the containment of views created by the curve of the road.

No street trees have been recorded within the road reserves.

KEY BENEFITS

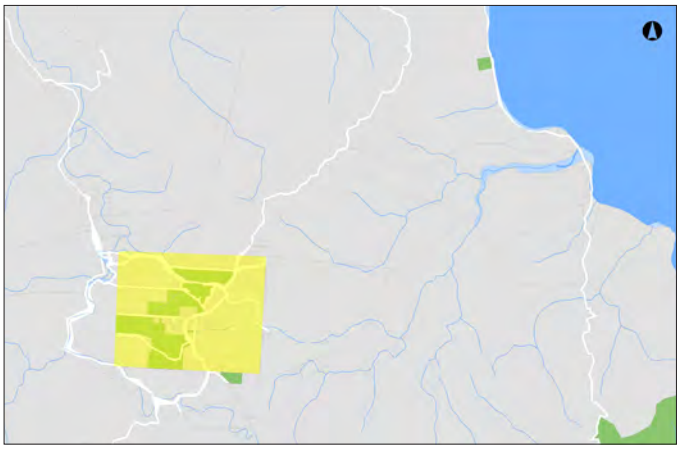
ü Mature Maple trees planted outside Te Puia Springs Tavern provide structure and visual appeal to the main road corridor.

ü Surrounding hill country and forestry add visual interest to the settlement.

KEY CONSIDERATIONS

ü Existing trees within the road reserve.

ü Large section of SH 35 without turf berms and existing roadside vegetation limit locations for effective street tree planting.



OPPORTUNITIES

ü Possible future replacement of trees outside tavern.

ü Possible future replacement of trees to planted margin beside the general store.

ü Possible street tree planting to McKenzie Street.

RECOMMENDED SPECIES

ü Acer palmatum

ü Alectryon excelsus

ü Sophora tetraptera

RURAL TOWNSHIPS
RUATORIA

DESCRIPTION

Ruatoria is an inland township of 750 people located on the south bank of the Waiapu River 129km from Gisborne city. The township is situated 2km off State Highway 35 and is accessed by Waiomatatini Road.

The township footprint is compact with core commercial and industrial zones surrounded by low density residential development. The Waiapu River and nearby hill country provide natural boundaries and also contribute to the township's rural character.

Soils are mainly composed of sand and silt based loams. Surrounding landuses suggest they are reasonably versatile and would support a range of tree species.

Waiomatatini Road is the main road of Ruatoria. The road broadens as it enters the commercial zone. The commercial area has on street parking and wide footpaths on both sides.

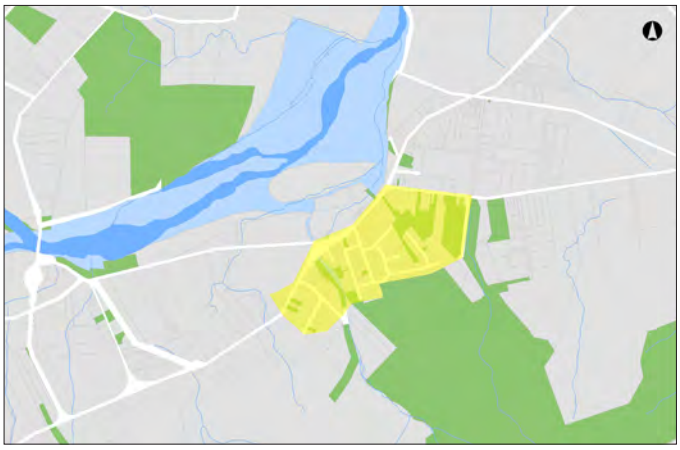
Elms are planted along one side of Waiomatatini Road. Few other trees identified in the township road reserves.

KEY BENEFITS

- ü Elms in township add scale, shade and visual interest to commercial area.
- ü Few services allow for more planting options.

KEY CONSIDERATIONS

- ü Limited berm width along some residential streets.
- ü Tree planting along Waiomatatini Road will need to be placed in the carriageway.



OPPORTUNITIES

- ü More tree planting to Waiomatatini Road.
- ü More locally growing native species.
- ü Drought hardy and salt tolerant species.

RECOMMENDED SPECIES

- ü Knightia excelsa
- ü Liquidambar styraciflua 'Aurora'
- ü Metrosideros excelsior 'Vibrance'
- ü Nestegis cunninghamii
- ü Sophora microphylla var. fulvida
- ü Sophora tetraptera
- ü Ulmus procera 'Louis van Houtte'

RURAL TOWNSHIPS
EAST CAPE

DESCRIPTION

Tikitiki and Te Araroa are the district's northernmost rural townships. Both are small settlements with a rural commercial hub surrounded by low density residential development.

Tikitiki is located inland on the northern side of the Waiapu River floodplain. Sandy loams are the dominant soils. Its main road is Te Araroa Road (State Highway 35).

Te Araroa is a coastal township located on the southern extent of the Karakatuwhero River floodplain. Soils composed of floodplain alluvium and allow for high producing grassland.

No street trees have been recorded within the road reserves.

KEY BENEFITS

ü Te Araroa retains a striking coastal landscape character.

ü Underground services minimal within townships.

ü Tree planting will benefit from being situated on alluvial soils.

KEY CONSIDERATIONS

ü Salt laden wind and sand based soils require hardy species for Te Araroa.

ü Both locations likely to experience dry summer conditions.

OPPORTUNITIES

ü Establish locally adapted native species.

ü Drought hardy and salt tolerant species.

RECOMMENDED SPECIES

ü Knightia excelsa

ü Metrosideros excelsior 'Maori Princess'

ü Metrosideros Mistral

ü Nestegis cunninghamii

ü Sophora tetraptera

ü Vitex lucens

ACTIONS

The table below outlines the priority actions to implement the Street Trees and Gardens Plan.

Key actions	When it will happen	No. trees	Estimated cost
Tree removal programme: High priority trees	2018-2019	123	$61k
Tree removal programme: Medium priority trees	2019-2020	150	$75k
New tree planting programme - Gisborne City	2018-2019	532	$239k
	2019-2020	536	$241k
	2020-2021	334	$150k
	2021-2022	196	$88k
New tree planting programme - Rural townships	2018-2019	N/A	$25k
	2019-2020	N/A	$25k
	2020-2021	N/A	$25k
	2021-2022	N/A	$25k
	2022-2023	N/A	$25k
Maintenance of Street Tree database	On-going	N/A	Internal
Review the effectiveness and appropriateness of tree and garden plantings	Yearly	N/A	Internal
Myrtle rust contingency fund	N/A	N/A	TBC
Management of trees within road corridors located outside the boundaries of Gisborne city and the region's rural township (Tairawhiti Roads)	Yearly	N/A	$500k
A regular pruning and maintenance programme for street trees	Ongoing	N/A	Internal

TREE SELECTION CRITERIA

Trees can live for many decades so it is important that they are selected to be appropriate to the conditions and constraints of the planting location.

The selection of species aims to ensure that the trees we plant make a positive contribution to environmental, amenity, aesthetic and heritage values of the area and any negative aspects are minimised.

There is no perfect street tree, so the selection process will need to find the right balance between the benefits and potential costs of a tree.

The street tree selection criteria are divided into three categories:

- ü Environmental tolerances;
- ü Functional requirements and;
- ü Aesthetic and design requirements.

Consideration of the criteria outlined in this section should ensure the selection of the species with the most desirable and appropriate characteristics, no matter what their origin or type.

ENVIRONMENTAL TOLERANCES

CLIMATE

Gisborne's dry sunny climate is suited to a wide range of tree species but will need to be tolerant of dry summer conditions, especially near the coast. Coastal neighbourhoods will also benefit from tree species that tolerate salt laden winds.

Within the city's commercial areas, wind tunnel effects, reflected heat and, to a lesser degree, overshadowing caused by buildings will require species that are particularly hardy and resilient to these conditions.

SOIL CONDITIONS

The underlying soils provide nutrients and water as well as physical support for the tree. Soil conditions will influence the kinds of trees that can grow in a particular location.

Gisborne's rolling hill country is mainly composed of shallow soils made up of uplifted marine sediments, and layers of fine volcanic sand and dust. These soils vary in fertility and drainage and tree selection will need to adapt to these variations.

The alluvial soils found on the Poverty Bay Flats and in Tologa Bay are some of the most fertile and productive in the country. They will support a wider range of species and more options for selection.

Within Gisborne city, the soil structure is often highly modified with compacted soils, poor aeration and altered drainage patterns. Nutrients are limited and tree roots are restricted by footpaths, fences, kerbs, and underground utilities. Trees selected will need to tolerate this modified environment, not require too much water, and handle poor soils. Soil conditions can and should be improved at the time of planting to create the best chance for a tree's survival.

DROUGHT TOLERANCE

Due to the built up nature of the built environment, water is often not able to penetrate the soil. Therefore, street trees that require a lot of watering should not be selected.

Street trees need to be capable of surviving an average drought period in reasonable condition without irrigation or reliance on town water supplies.

TOLERANCE OF PESTS AND DISEASES

The selected tree species should be resistant to pests and disease. Maintaining a diversity of tree species across our city and townships is also important in reducing the potential impact of any devastating diseases on specific tree species.

WILDLIFE BENEFITS

Where appropriate, consideration should be given to species that provide benefits to native wildlife such as protection, shelter or food source.

FUNCTIONAL REQUIREMENTS

PERFORMANCE RECORD

The performance of existing tree species is important when selecting street trees. If the existing species on a street are healthy, growing well and structurally sound, then these species should be continued along that street. Conversely, if the existing trees are performing poorly, then new species should be selected.

GROWTH RATE

Moderate to fast growing trees should be considered first as this ensures the tree delivers a high impact on the street quickly and maximises the environmental benefits sooner rather than later. While it is understood that trees may be fast growers in their natural environment, they tend to be slower in an urban setting.

LOW MAINTENANCE

Selected street trees should have an appropriate level of maintenance for the street environment and for their location. This includes the amount of debris from fruit, nuts, seeds and flowers. Trees should be able to establish without major pruning. Those with large or heavy seed pods, have an unpleasant fragrance, or fleshy fruit or flowers that may lead to slip hazards should be avoided.

ALLERGENIC PARTS

Many trees have allergenic parts that can be a great annoyance to residents and cause hay fever, rashes and asthma. Allergenic parts range from seeds, pollen, flowers, nuts and fruit. Trees considered to be highly allergenic should be avoided.

CLEAR TRUNK

Where vehicle or pedestrian clearance and visibility are required, trees should be able to develop a clear trunk of at least 2.5m. Trees will either need to meet these requirements or have the ability to be limbed up to provide that clearance.

NOT AN INVASIVE WEED SPECIES

Trees and plants that are known weed species will not be selected. This includes, but is not limited to, those species identified in Appendix 2.

SOLAR ACCESS

Consideration will need to be given to solar access during the winter, especially in residential streets or in areas where people sit. Trees should not have a wide spreading habit that causes large amounts of shade over prolonged periods. Most importantly, trees also need to be able to cool the street during Gisborne's hot summers.

INVASIVE ROOT SYSTEMS

Some tree species are regarded as having invasive root systems and are more likely to damage pipes, lift paving and cause trip hazards. Some species also tend to have roots that sucker underground and re-surface. These species should be avoided. The use of structural soils and root deflectors should be considered where trees are planted close to nearby pipes and pathways, or where whole street upgrades are being undertaken.

SERVICES

Services such as overhead power lines and underground pipes are a critical factor in deciding street tree location and selection. Trees with aggressive root systems need to be avoided and so do those that are not easily pruned around overhead wires.

STRUCTURAL FAILURE AND LIMITED LIMB DROP

Limb loss occurs on an occasional basis for most trees, but those species that are renowned for having brittle branches and loose limbs or prone to structural failure should be avoided.

DESIGN CONSIDERATIONS

HISTORICAL/ CULTURAL ASSOCIATIONS WITH THE PAST

Gisborne possesses an exceptionally rich cultural heritage which has helped to define the character of our region. It maintains important links to Maori and European navigation which Council aims to celebrate through various urban development projects. Gisborne has also been long recognised as an important area for pastoral and horticultural production. These landscapes surround our urban areas and play a huge part in shaping our identity as a region.

These associations should be considered when selecting new and replacement trees for planting.

SPREAD

Trees need to be in scale with the street. Where possible, larger species should be selected as they will have a greater effect on street amenity and the environment than many smaller ones do.

The infrastructure in the street will constrain and limit the size of the tree. The ultimate mature size of the canopy therefore needs to be taken into consideration at the selection process so that the tree has enough space to grow to its full potential without the need for canopy reductions.

COLOUR/ FOLIAGE

Species that exhibit seasonal difference, provide colour, flowers and interesting foliage that contrasts with Gisborne's urban surroundings should be considered where appropriate.

FUNCTIONAL HIERARCHY

The surrounding patterns of movement and functional hierarchy of streets needs to be considered and species that are related to the activities of the surroundings chosen.

DECIDUOUS VS EVERGREEN

Evergreen trees provide year round screening, greenery and shelter from winds and shade. Deciduous trees provide interesting seasonal differences, ensure sunlight in winter, allow buildings to be viewed and key view shafts maintained.

In residential streets deciduous trees are useful to maximise summer shading and winter light especially for the properties located on the south side of the road. This is also true for those areas where pedestrian numbers are high and where people are likely to be sitting.

FORM OF TREE CANOPY

The form and size of a street tree should respond to its built setting. Street trees need to have an upright trunk and a branching habit that extends upward from the trunk. A street that is densely built up, has tall buildings and narrow footpaths will need a more columnar species to bring a human scale to the street and be of a similar form to the surrounding buildings. This also ensures that building facades are not hidden.

The opposite is true for wider streets that have a lower density of buildings and are more setback from the road. This gives the opportunity for wider spreading forms that have a large impact on the street and possibly bring some coherence into the streetscape.

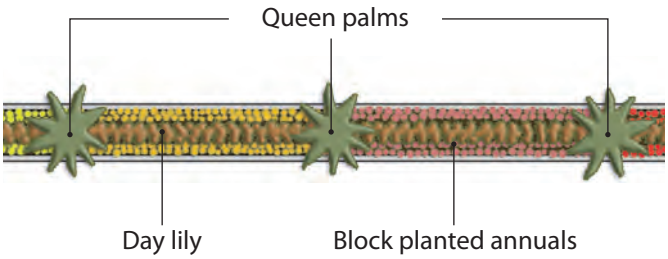
CONTINUITY

It is important that a continuous planting theme runs along the street in order to create a consistent and legible street character. It is important that garden plantings reflect this also. Council should typically select only one or two species at most to achieve a consistent street tree structure and visual effect.

LEVELS OF SERVICE

GOLD STANDARD

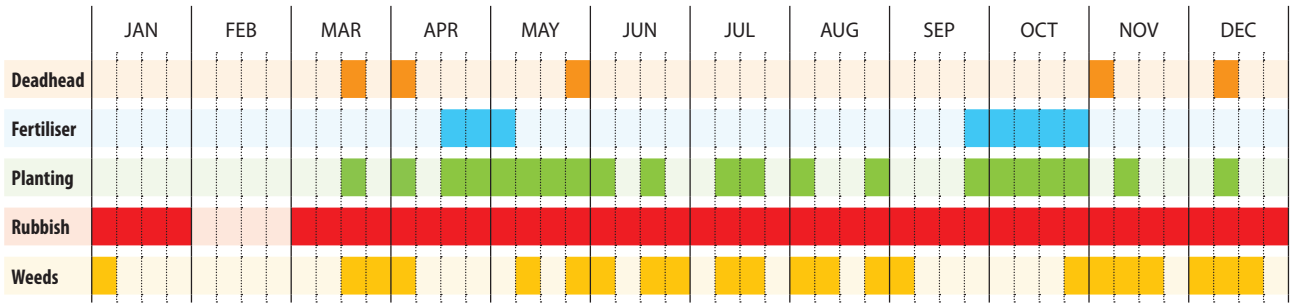
GLADSTONE ROAD **CAMPION TO ROEBUCK MEDIAN**



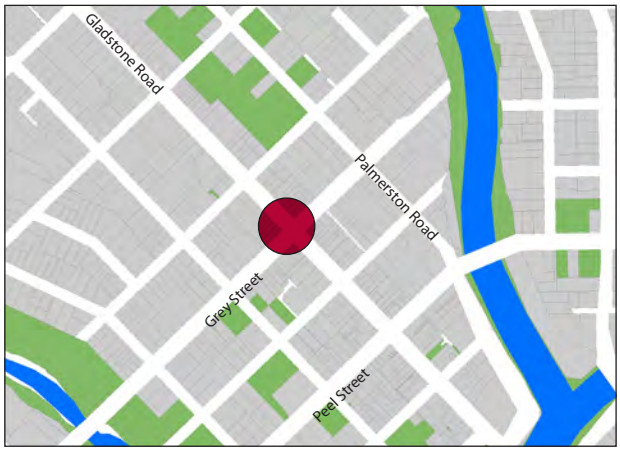
PLANTING OPTIONS

Perennial species	Common name	Notes
Arctotis spp.	African daisy	• Trim after flowering for repeat flowering and vigor. • Protect from frosts
Winter annual species	**Common name**	**Notes**
Viola wittrockiana	Pansy	• Excellent long lasting colour • Low maintenance • No deadheading required
Summer annual species	**Common name**	**Notes**
Gaillardia aristata	Gaillardia	• Drought tolerant • Attractive seed heads but deadhead to prolong flowering
Salvia farinacea	Salvia	• Drought tolerant • Deadhead to prolong flowering

WORK SCHEDULE



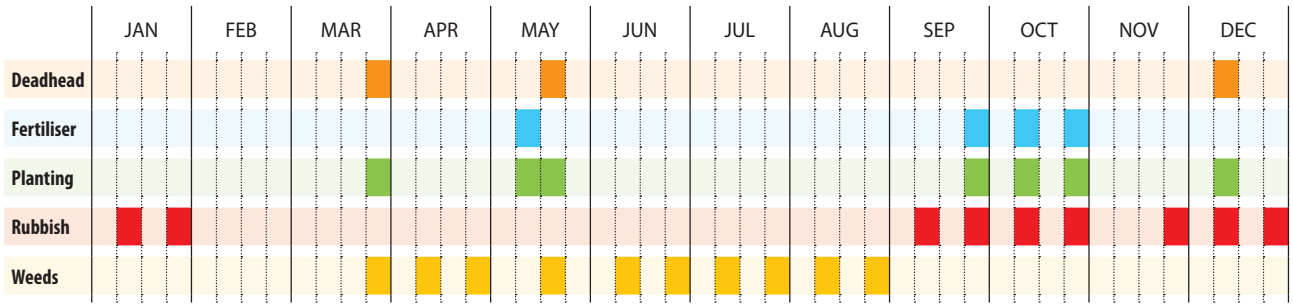
GLADSTONE ROAD **TOWN CLOCK GARDEN**



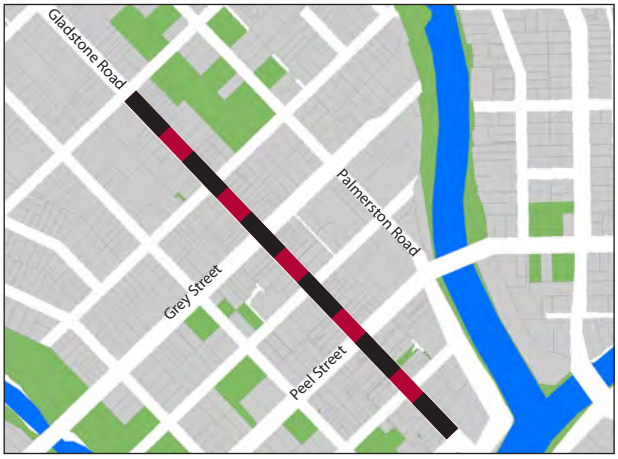
PLANTING OPTIONS

Perennial species	Common name	Notes
Agave spp.	Agave	• Requires excellent drainage
Aloe spp.	Aloe	• Requires excellent drainage
Carex testaceae	Carex	• Hardy to drought and salt winds • Needs an open situation in full sun to maintain its colour
Ophiopogon 'Nigrescens'	Black Mondo Grass	• Full sun • Prefers a moist well drained soil
Osteospermum spp.	Daisy	• Will tolerate dry spells • Avoid over-head watering
Strelitzia reginae	Bird of Paradise	• Grows best in bright light and well-drained soil
Protea spp.	Protea	• Prefers acid soil with low nutrient value • Do not fertilise.
Yucca spp.	Yucca	• Requires full sun, excellent drainage
Winter annual species	**Common name**	**Notes**
Brassica oleracea	Ornamental Kale	• Grows to attractive specimen plants • Susceptible to powdery mildew and cabbage moth
Summer annual species	**Common name**	**Notes**
Cosmos bipinnatus	Cosmos	• Impressive show in beds
Grows tall - prepare for early replacement	Salvia	• Drought tolerant • Deadhead to prolong flowering
Pennisetum glaucum 'Purple Majesty'	Millet 'Purple Majesty'	• Fast growing • Full sun only
Portulaca grandiflora	Portulaca	• Tolerates heat and drought

WORK SCHEDULE



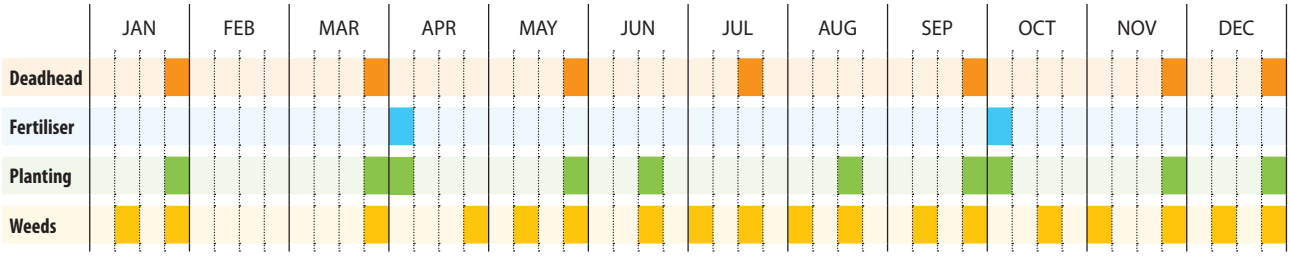
GLADSTONE ROAD **TOWN CENTRE MEDIAN**



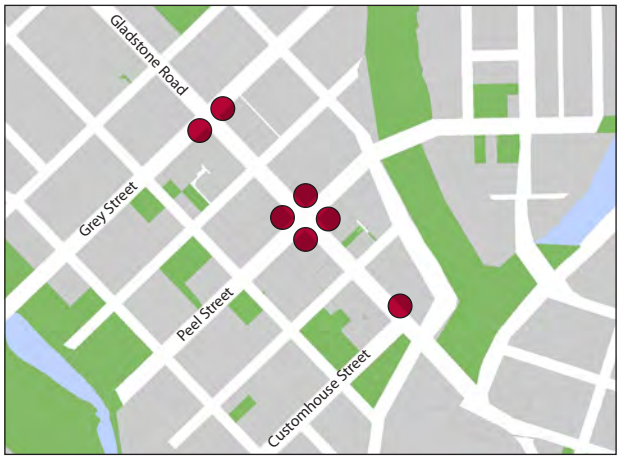
PLANTING OPTIONS

Perennial species	Common name	Notes
Carex virgata	Carex	• Hardy • Full sun or shade

WORK SCHEDULE



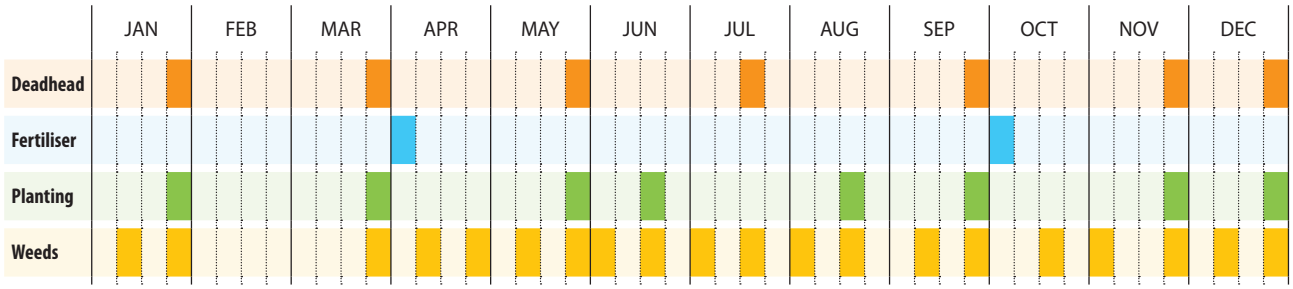
GLADSTONE ROAD **KERBSIDE GARDENS**



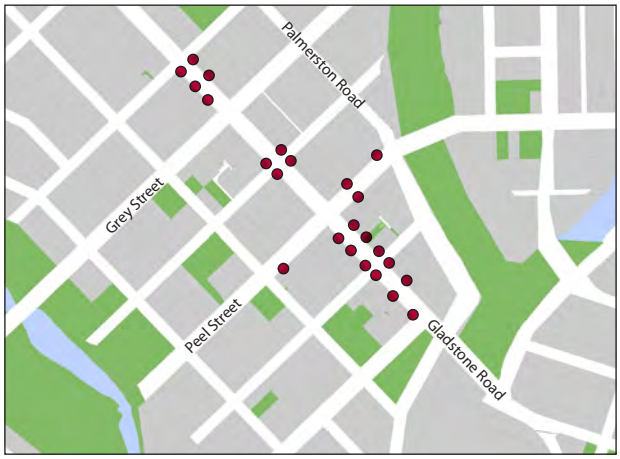
PLANTING OPTIONS

Perennial species	Common name	Notes
Liriope muscari 'Just Right'	Liriope 'Just Right'	• Slow release fertiliser in spring. • Trim older leaves as required
Winter annual species	**Common name**	**Notes**
Primula spp.	Primula/Polyanthus	• Slow growing - order early
Viola wittrockiana	Pansy	• Excellent long lasting colour • Low maintenance - no deadheading required
Summer annual species	**Common name**	**Notes**
Pelargonium hortum	Geranium	• Hold form while stressed; drought tolerant
Petunia x hybrida	Petunia	• Long lasting, low maintenance colour. • Does not require deadheading.

WORK SCHEDULE



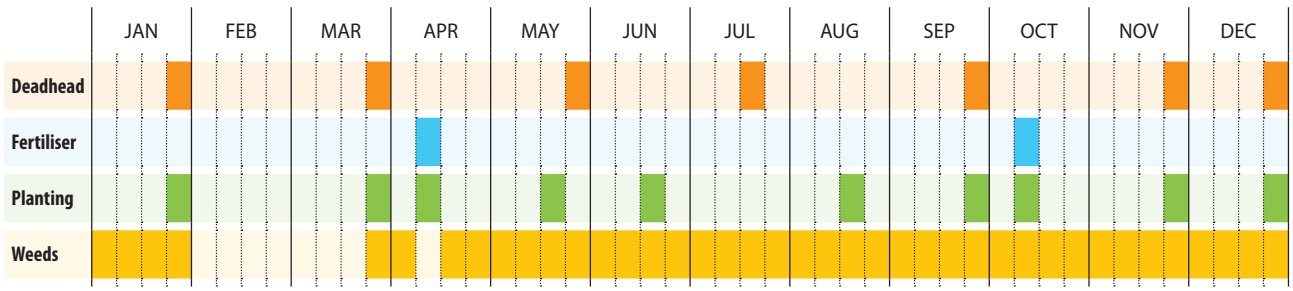
GLADSTONE ROAD **URBAN PLANTERS**



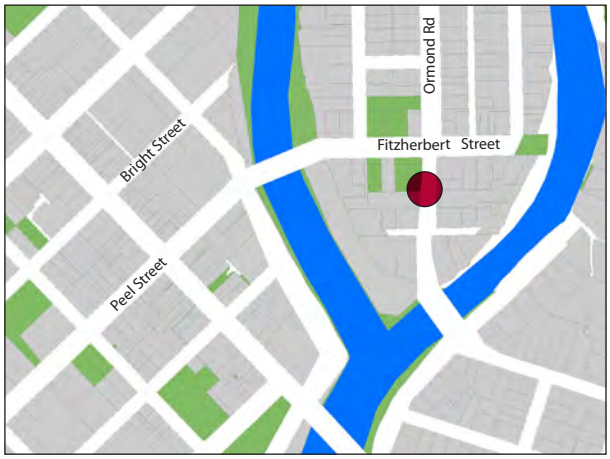
PLANTING OPTIONS

Perennial species	Common name	Notes
Dichondra 'Silver Falls'	Dichondra	• Full sun to part shade. Heat and drought tolerant
Pittosporum ' Midget'/'Golfball'	Pittosporum	• Well drained soils. Water regularly during hot summer months
Stachys byzantina	Lambs ear	• Tolerates dry conditions. Remove spent flower stems
Winter annual species	**Common name**	**Notes**
Antirrhinum majus	Snapdragon	• Full sun. Cut back finished blooms to encourage regrowth
Papaver nudicaule	Poppy	• Temperamental when transplanting. Impressive show when healthy. May flop over
Primula spp.	Primula/Polyanthus	
Viola wittrockiana	Pansy	
Winter bulb species	**Common name**	**Notes**
Narcissus	Daffodil	• Full sun, well drained. Plant Feb-Mar
Hyacinthus	Hyacinth	• Full sun, well drained. Plant Feb-Apr
Tulipa spp.	Tulip	• Part shade to full sun, well drained; Plant Mar - early Jun
Summer annual species	**Common name**	**Notes**
Dahlia variabilis	Dahlia	• Full sun. Deadheading required
Pelargonium hortum	Geranium	• Holds form while stressed. Drought tolerant. Long lasting show of colour
Petunia x hybrida	Petunia	• Long lasting, low maintenance colour. Does not require deadheading. Has grown well in CBD pots
Salvia farinacea	Salvia	• Drought tolerant. Deadhead to prolong flowering
Solenostemon scutellarioides	Coleus 'Kong Lime Sprite'	• Part to full shade. Heat tolerant

WORK SCHEDULE



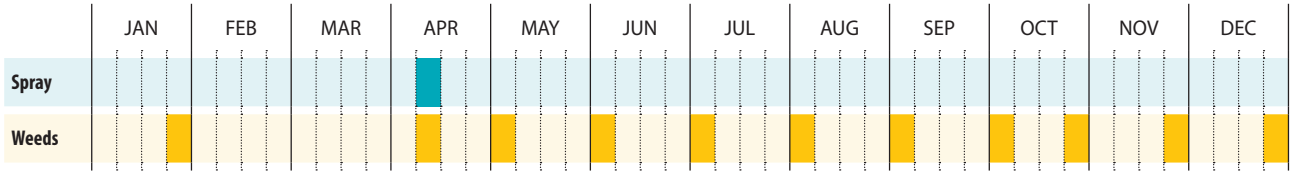
CIVIL DEFENCE BUILDING **SIDE GARDEN**



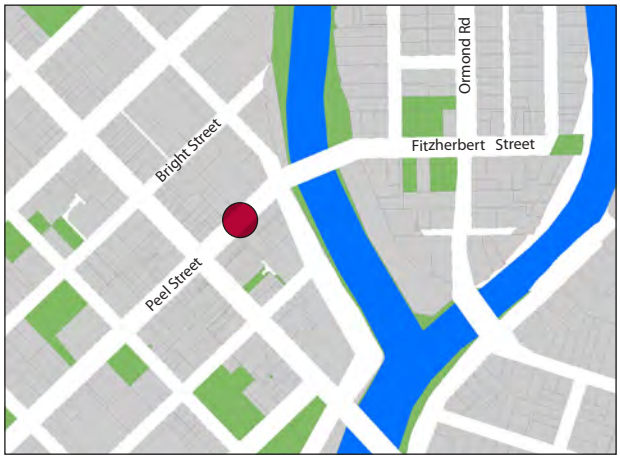
PLANTING OPTIONS

Perennial species	Common name	Notes
Athropodium cirratum	Rengarenga lily	• NZ native • Protect from slug and snail damage
Cordyline australis	Cabbage tree	• NZ native • Hardy
Hebe speciosa	Hebe	• NZ native shrub • Wind and coastal hardy
Libertia grandiflora	New Zealand Iris	• NZ native • Sun to semi-shade • Hardy
Macropiper excelsum	Kawakawa	• NZ native shrub • Rich, free draining soil • Part to full shade
Phormium tenax ' Bronze'	Flax	• NZ native • Hardy
Phormium tenax	Flax	

WORK SCHEDULE



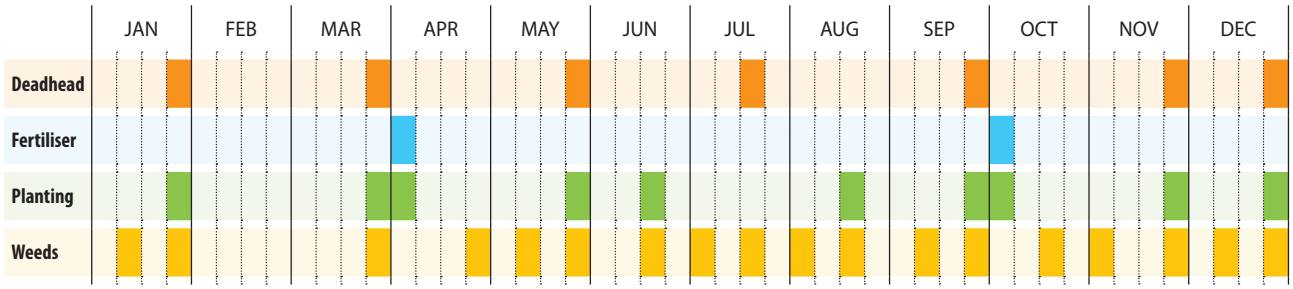
PEEL STREET **MEDIAN PLANTING**



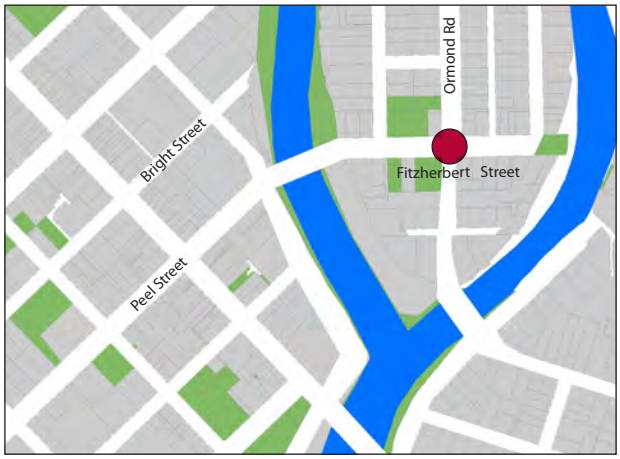
PLANTING OPTIONS

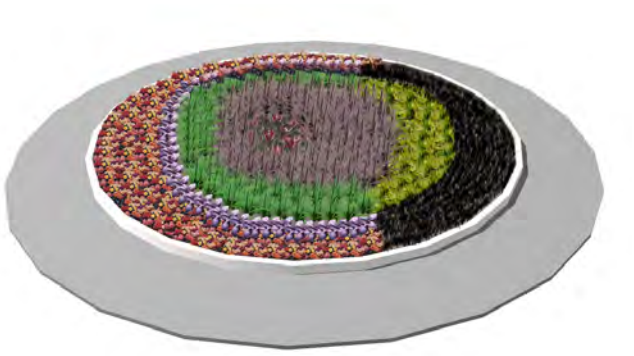
Perennial species	Common name	Notes
Carex virgata	Carex	• NZ native grass • Hardy • Full sun or shade

WORK SCHEDULE



FITZHERBERT STREET **ROUNDABOUT & STREETSIDE GARDEN**

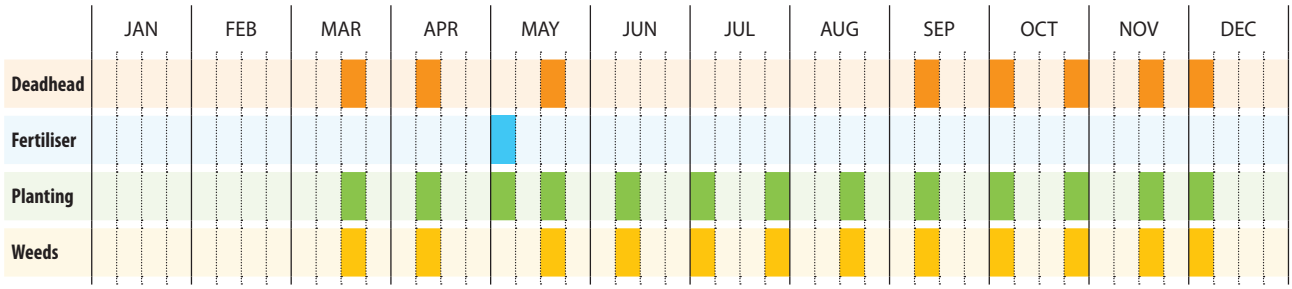




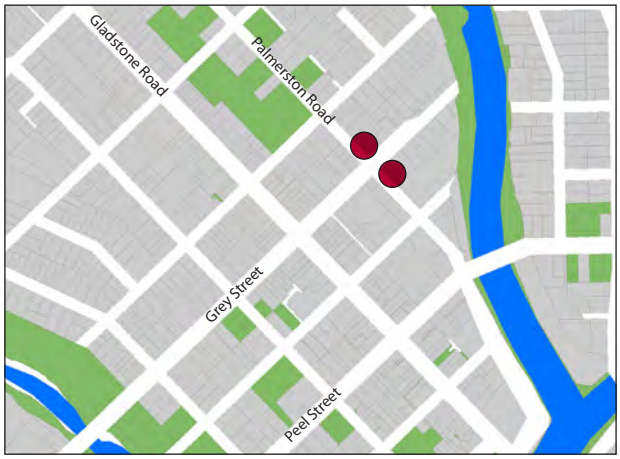
PLANTING OPTIONS

Perennial species	Common name	Notes
Arctotis spp.	Arctotis	• Trim after flowering for repeat flowering and vigor • Protect from frosts
Artemisia 'Powis Castle'	Wormwood	• Hardy, fast growing
Euphorbia spp.	Spurge	• Full sun, well drained • Drought tolerant
Ophiopogon 'Nigrescens'	Black Mondo Grass	
Winter annual species	**Common name**	**Notes**
Osteospermum spp.	Daisy	• Full sun; dry hardy • Trim spent flowers to encourage regrowth
Papaver nudicaule	Poppy	• Temperamental when transplanting • Impressive show when healthy. May flop over
Senecio cruentus	Cineraria	• Prefers some shade, well drained soils
Summer annual species	**Common name**	**Notes**
Begonia spp.	Begonia	• Successful in beds. Plant late Winter/Early Spring. Part shade
Cosmos bipinnatus	Cosmos	• Impressive show in beds. Grows tall then flops over. Prepare for early replacement
Pelargonium hortum	Geranium	• Holds form while stressed. Drought tolerant. Long lasting show of colour
Zinnia x angustifolia	Zinnia	• Fertile, well-drained soil in full sun. • Deadhead to continue flowering
Zinnia elegens	Zinnia	• Fertile, well-drained soil in full sun • Deadhead to continue flowering

WORK SCHEDULE



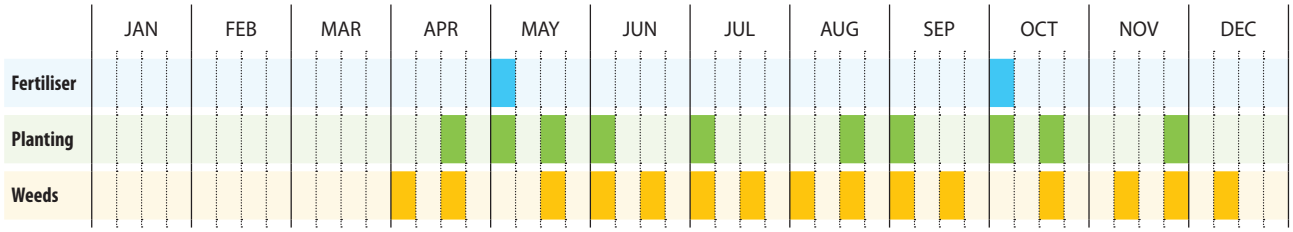
PALMERSTON ROAD/ GREY STREET **INTERSECTION**



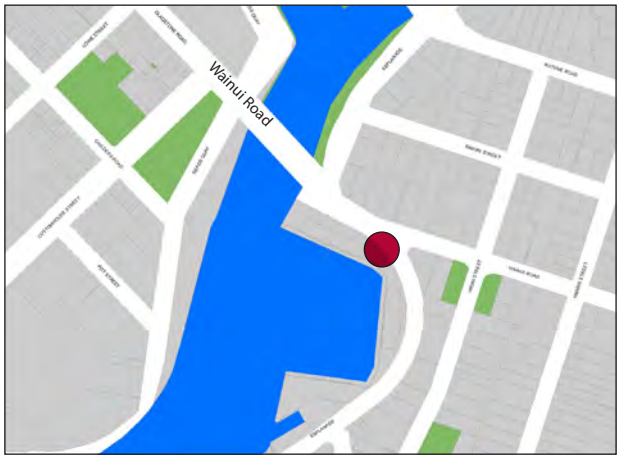
PLANTING OPTIONS

Perennial species	Common name	Notes
Begonia spp.	Begonia	• Successful in beds • Plant late Winter/Early Spring • Part shade
Libertia peregrinans	New Zealand Iris	• NZ native • Sun to semi-shade • Hardy
Liriope muscari 'Just Right'	Liriope 'Just Right'	• Slow release fertiliser in spring • Trim older leaves as required
Ophiopogon 'Nigrescens'	Black Mondo Grass	• Full sun to part shade • Well drained

WORK SCHEDULE



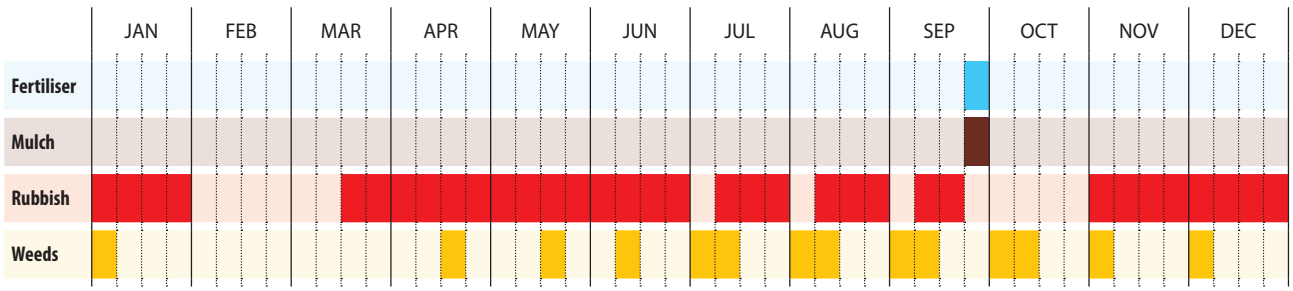
ESPLANADE **PORT ENTRANCE GARDEN**



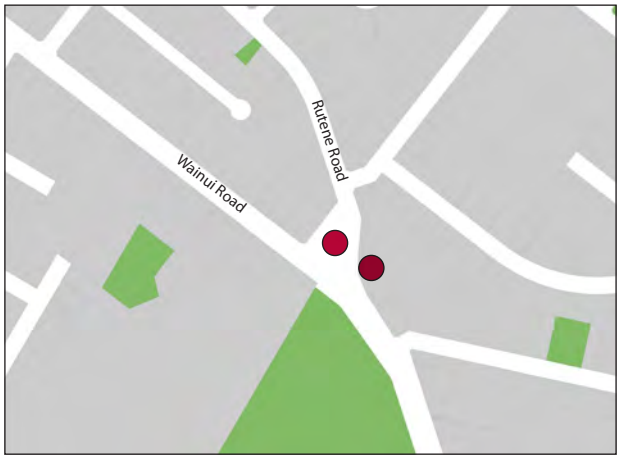
PLANTING OPTIONS

Perennial species	Common name	Notes
Acacia cognata 'Limelight'	Acacia	• Hardy • Compact shrub
Carex testaceae	Carex	• NZ native grass
Corokia x virgata 'Sunsplash'	Corokia	• NZ native shrub • Hardy
Leucadendron laureolum	'Inca Gold' conebush	• Full sun • Well drained
Phormium spp	Flax	• Dwarf variety

WORK SCHEDULE



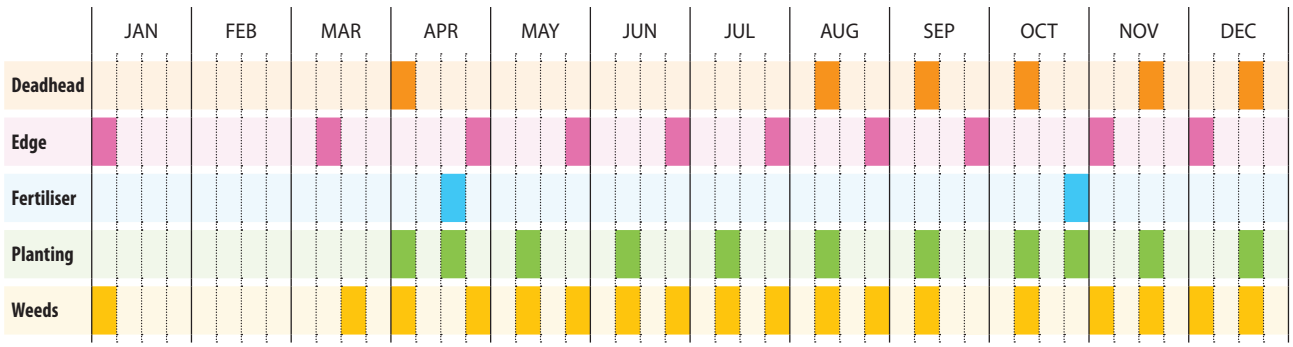
RUTENE/WAINUI **INTERSECTION & WELCOME SIGN GARDENS**



PLANTING OPTIONS

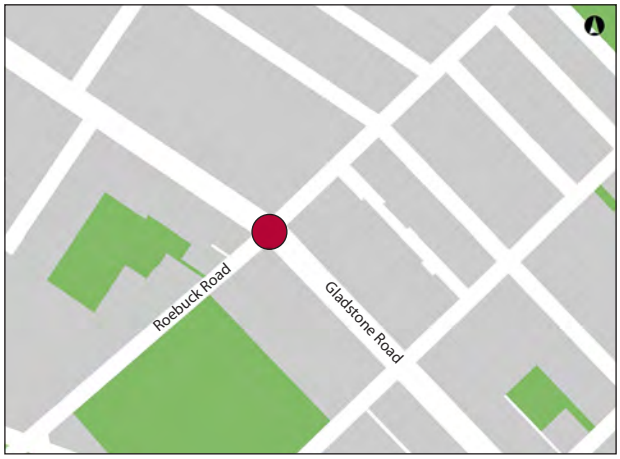
Perennial species	Common name	Notes
Begonia spp.	Begonia	• Successful in beds • Plant late Winter/Early Spring • Part shade
Libertia peregrinans	New Zealand Iris	• NZ native • Sun to semi-shade • Hardy
Liriope muscari 'Just Right'	Liriope 'Just Right'	• Slow release fertiliser in spring • Trim older leaves as required
Ophiopogon 'Nigrescens'	Black Mondo Grass	• Full sun to part shade • Well drained

WORK SCHEDULE



SILVER STANDARD

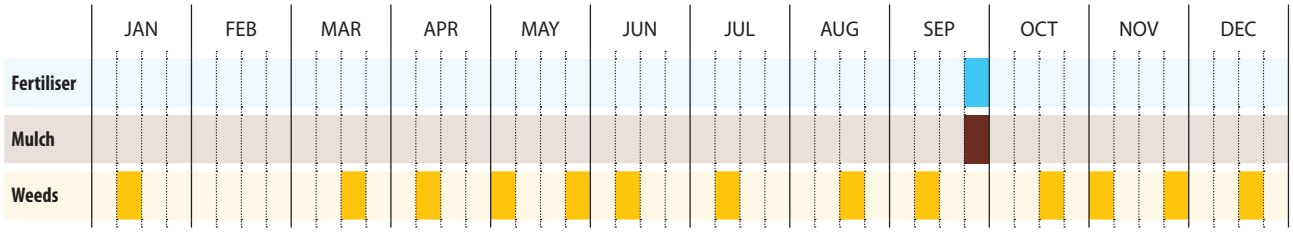
GLADSTONE/ROEBUCK **ROUNDABOUT**



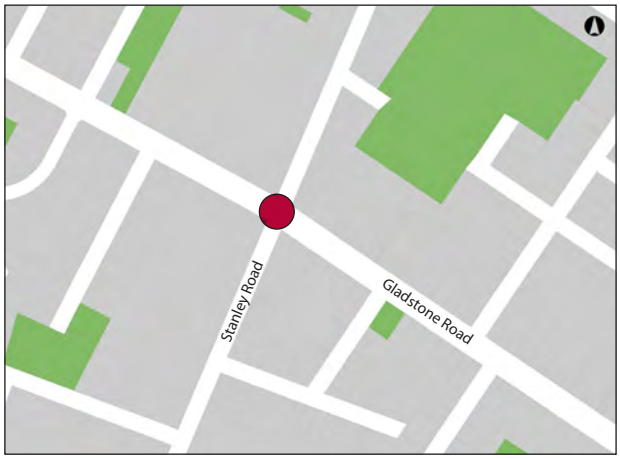
PLANTING OPTIONS

Perennial species	Common name	Notes
Campanula 'Resholdt's Variety'	Campanula	• Extremely adaptable • Drought tolerant
Chionochloa flavicans	Miniature toetoe	• NZ native grass • Hardy
Dietes grandiflora	African Iris	• Does well in hot and dry conditions
Libertia 'Taupo Blaze'	New Zealand Iris	• NZ native shrub • Hardy
Muehlenbeckia complexa	Pohuehue	• NZ native shrub • Hardy
Pseudopanax ferox	Lancewood	• NZ native • Hardy
Winter annual species	**Common name**	**Notes**
Viola wittrockiana	Pansy	• Excellent long lasting colour
Summer annual species	**Common name**	**Notes**
Pelargonium hortum	Geranium	• Holds form while stressed • Drought tolerant
Salvia farinacea	Salvia	• Drought tolerant • Deadhead to prolong flowering

WORK SCHEDULE



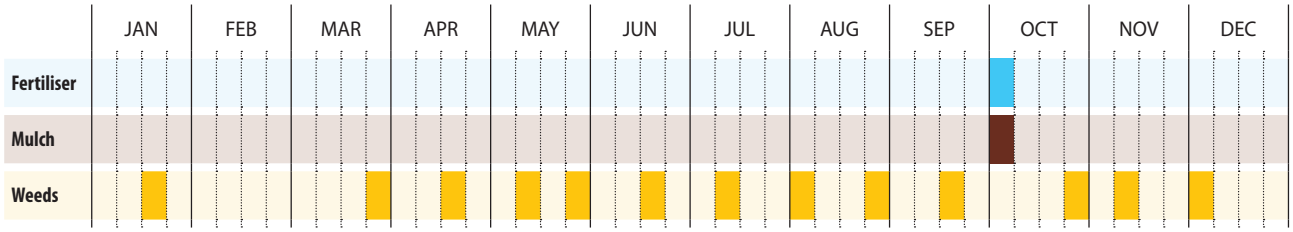
GLADSTONE/STANLEY **ROUNDABOUT**



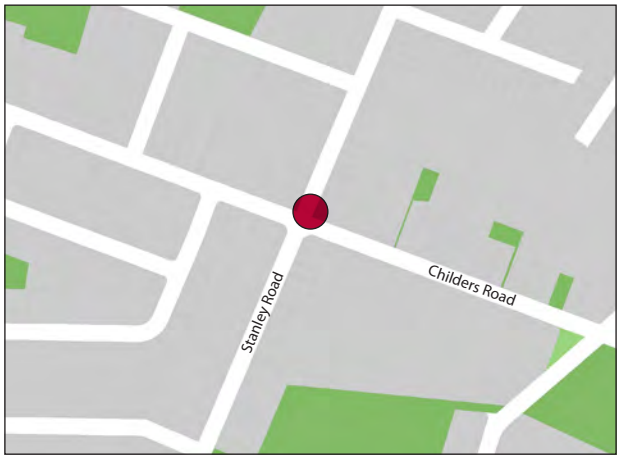
PLANTING OPTIONS

Perennial species	Common name	Notes
Campanula 'Resholdt's Variety'	Campanula	• Extremely adaptable • Drought tolerant
Chionochloa flavicans	Miniature toetoe	• NZ native grass • Hardy
Dietes grandiflora	African Iris	• Does well in hot and dry conditions
Libertia 'Taupo Blaze'	New Zealand Iris	• NZ native shrub • Hardy
Muehlenbeckia complexa	Pohuehue	• NZ native shrub • Hardy
Pseudopanax ferox	Lancewood	• NZ native • Hardy
Winter annual species	**Common name**	**Notes**
Viola wittrockiana	Pansy	• Excellent long lasting colour
Summer annual species	**Common name**	**Notes**
Pelargonium hortum	Geranium	• Holds form while stressed • Drought tolerant
Salvia farinacea	Salvia	• Drought tolerant • Deadhead to prolong flowering

WORK SCHEDULE



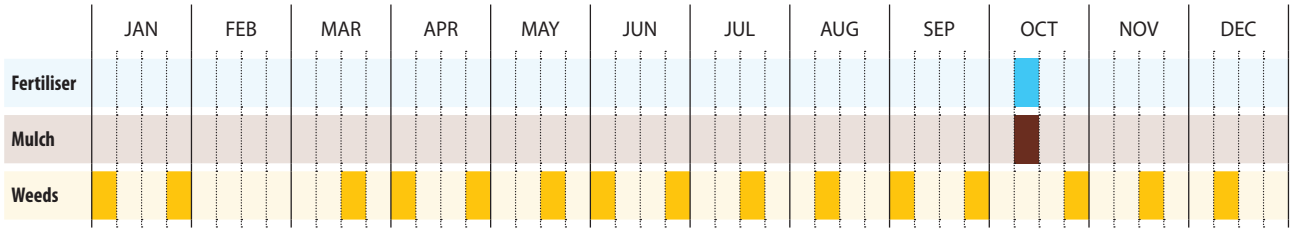
STANLEY/CHILDERS **ROUNDABOUT**



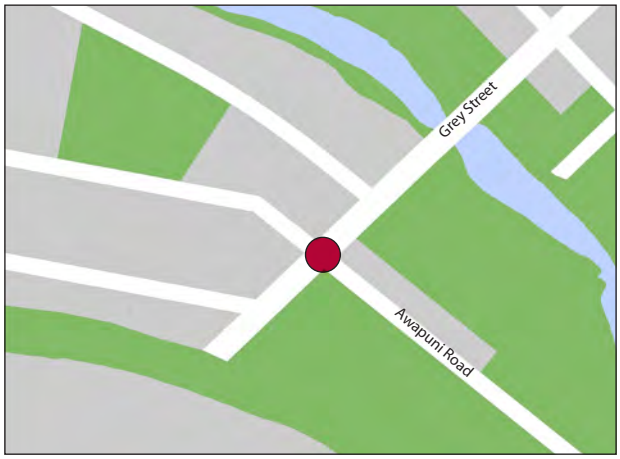
PLANTING OPTIONS

Perennial species	Common name	Notes
Campanula 'Resholdt's Variety'	Campanula	• Extremely adaptable • Drought tolerant
Chionochloa flavicans	Miniature toetoe	• NZ native grass • Hardy
Dietes grandiflora	African Iris	• Does well in hot and dry conditions
Libertia 'Taupo Blaze'	New Zealand Iris	• NZ native shrub • Hardy
Muehlenbeckia complexa	Pohuehue	• NZ native shrub • Hardy
Pseudopanax ferox	Lancewood	• NZ native • Hardy
Winter annual species	**Common name**	**Notes**
Viola wittrockiana	Pansy	• Excellent long lasting colour
Summer annual species	**Common name**	**Notes**
Pelargonium hortum	Geranium	• Holds form while stressed • Drought tolerant
Salvia farinacea	Salvia	• Drought tolerant • Deadhead to prolong flowering

WORK SCHEDULE



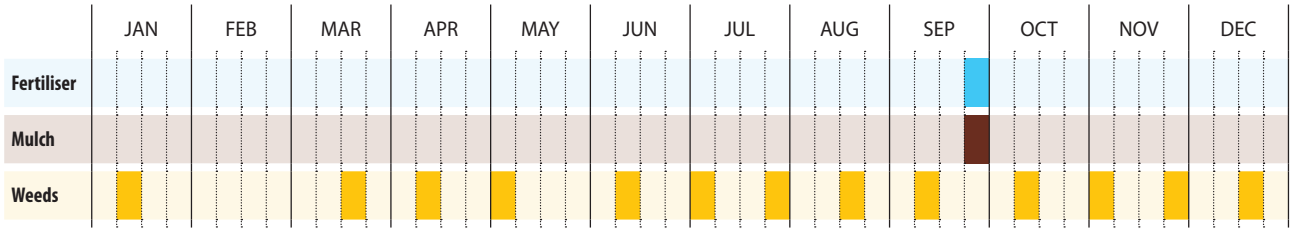
GREY/AWAPUNI **ROUNDABOUT**



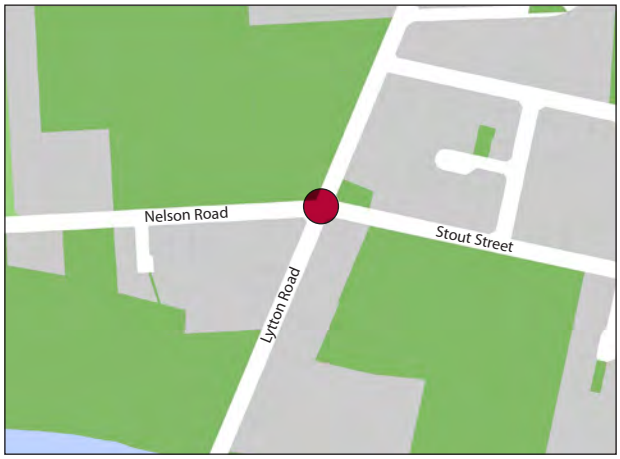
PLANTING OPTIONS

Perennial species	Common name	Notes
Campanula 'Resholdt's Variety'	Campanula	• Extremely adaptable • Drought tolerant
Chionochloa flavicans	Miniature toetoe	• NZ native grass • Hardy
Dietes grandiflora	African Iris	• Does well in hot and dry conditions
Libertia 'Taupo Blaze'	New Zealand Iris	• NZ native shrub • Hardy
Muehlenbeckia complexa	Pohuehue	• NZ native shrub • Hardy
Pseudopanax ferox	Lancewood	• NZ native • Hardy
Winter annual species	**Common name**	**Notes**
Viola wittrockiana	Pansy	• Excellent long lasting colour
Summer annual species	**Common name**	**Notes**
Pelargonium hortum	Geranium	• Holds form while stressed • Drought tolerant
Salvia farinacea	Salvia	• Drought tolerant • Deadhead to prolong flowering

WORK SCHEDULE



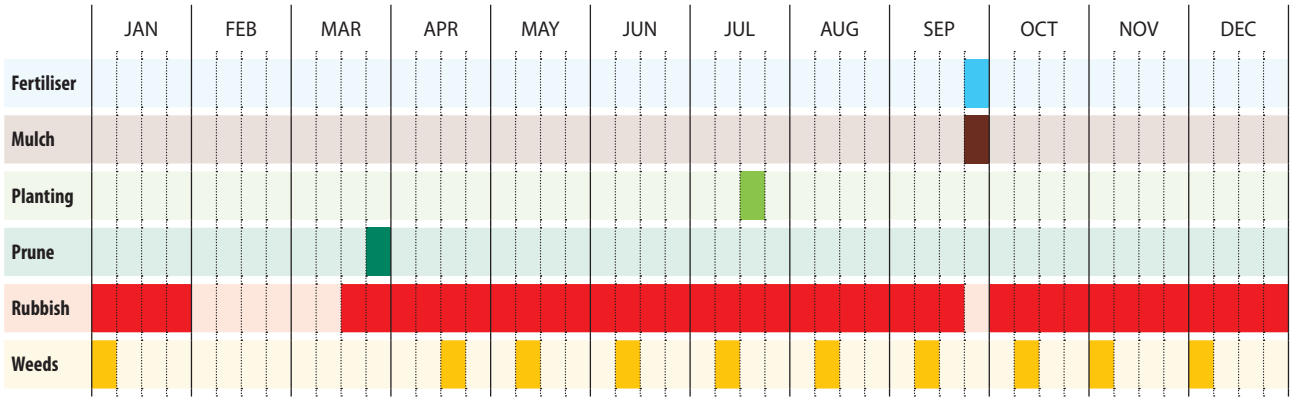
LYTTON/STOUT **ROUNDABOUT**



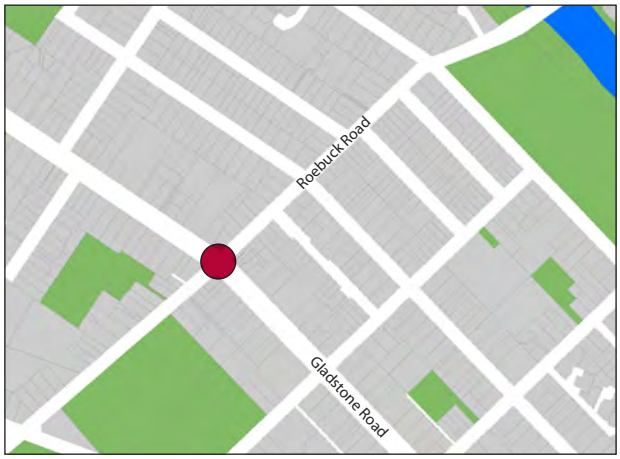
PLANTING OPTIONS

Perennial species	Common name	Notes
Campanula 'Resholdt's Variety'	Campanula	• Extremely adaptable • Drought tolerant
Chionochloa flavicans	Miniature toetoe	• NZ native grass • Hardy
Dietes grandiflora	African Iris	• Does well in hot and dry conditions
Libertia 'Taupo Blaze'	New Zealand Iris	• NZ native shrub • Hardy
Muehlenbeckia complexa	Pohuehue	• NZ native shrub • Hardy
Pseudopanax ferox	Lancewood	• NZ native • Hardy
Winter annual species	**Common name**	**Notes**
Viola wittrockiana	Pansy	• Excellent long lasting colour
Summer annual species	**Common name**	**Notes**
Pelargonium hortum	Geranium	• Holds form while stressed • Drought tolerant
Salvia farinacea	Salvia	• Drought tolerant • Deadhead to prolong flowering

WORK SCHEDULE



WI PERE/ORMOND **ROUNDABOUT**



PLANTING OPTIONS

Perennial species	Common name	Notes
Campanula 'Resholdt's Variety'	Campanula	• Extremely adaptable • Drought tolerant
Chionochloa flavicans	Miniature toetoe	• NZ native grass • Hardy
Dietes grandiflora	African Iris	• Does well in hot and dry conditions
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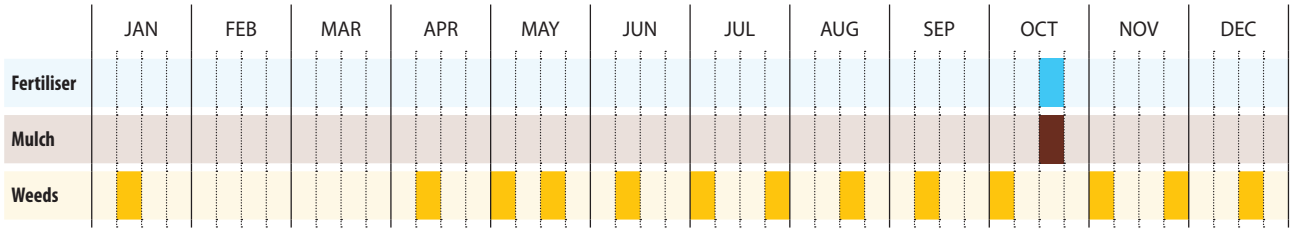
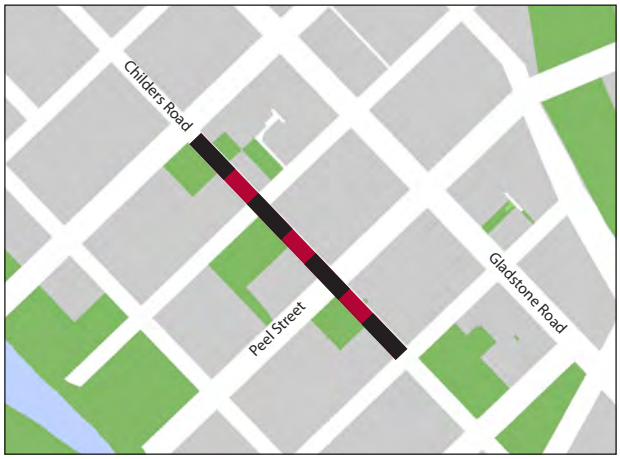
Muehlenbeckia complexa	Pohuehue	• NZ native shrub • Hardy
Pseudopanax ferox	Lancewood	• NZ native • Hardy
Winter annual species	**Common name**	**Notes**
Viola wittrockiana	Pansy	• Excellent long lasting colour
Summer annual species	**Common name**	**Notes**
Pelargonium hortum	Geranium	• Holds form while stressed • Drought tolerant
Salvia farinacea	Salvia	• Drought tolerant • Deadhead to prolong flowering

WORK SCHEDULE



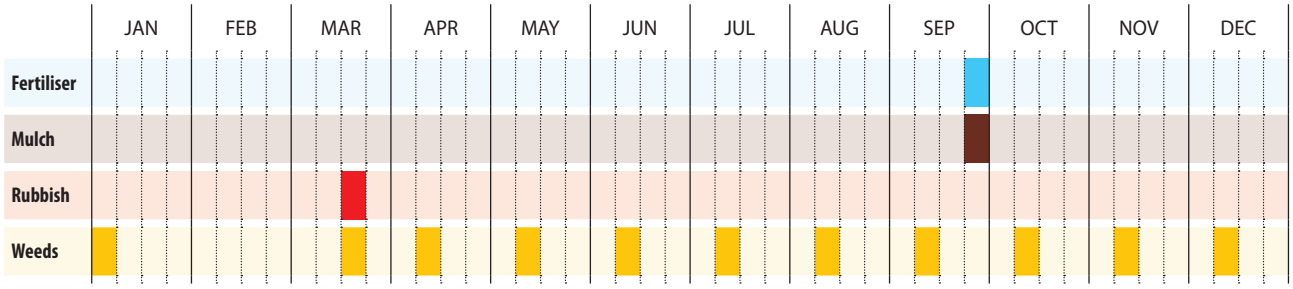
CHILDERS ROAD **TREE PITS**



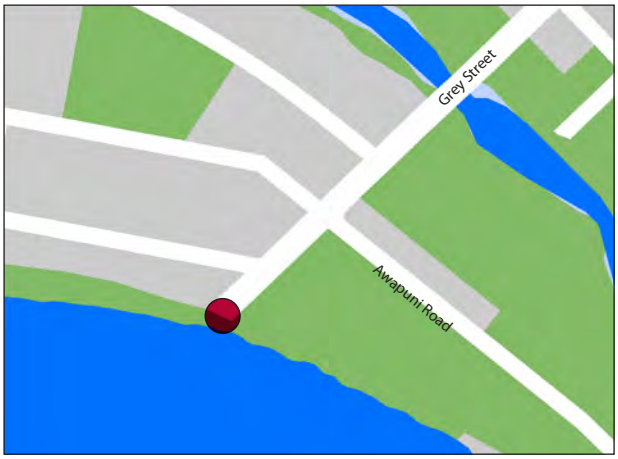
PLANTING OPTIONS

Perennial species	Common name	Notes
Apodasmia similis	Oioi	• NZ native rush • Very hardy

WORK SCHEDULE



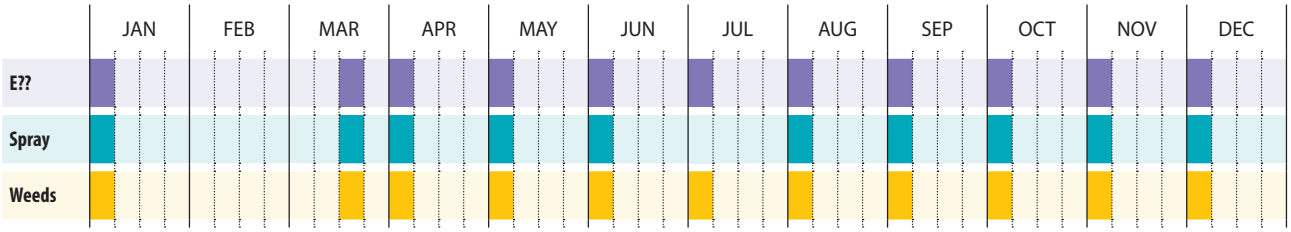
ONEROA/GREY STREET **END**



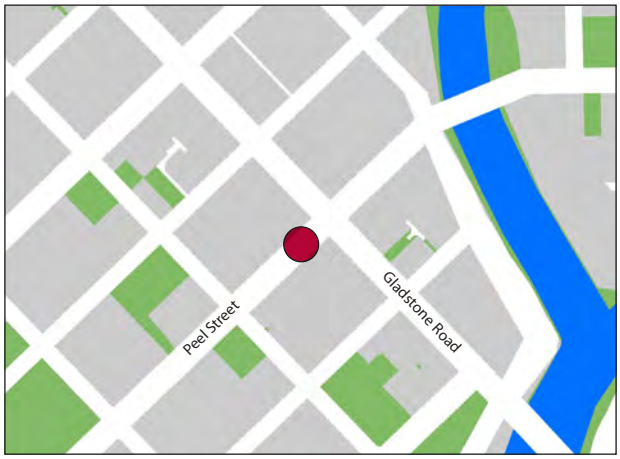
PLANTING OPTIONS

Perennial species	Common name	Notes
Apodasmia similis	Oioi	• NZ native rush • Very hardy

WORK SCHEDULE



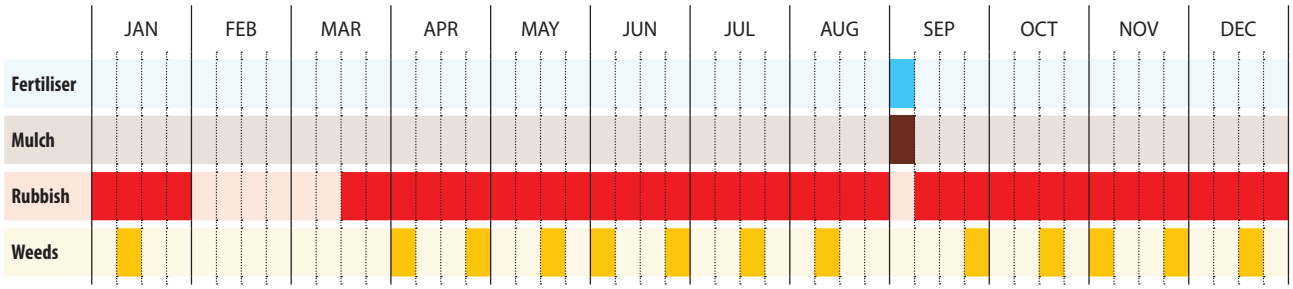
PEEL STREET **PUBLIC AMENITIES GARDEN**



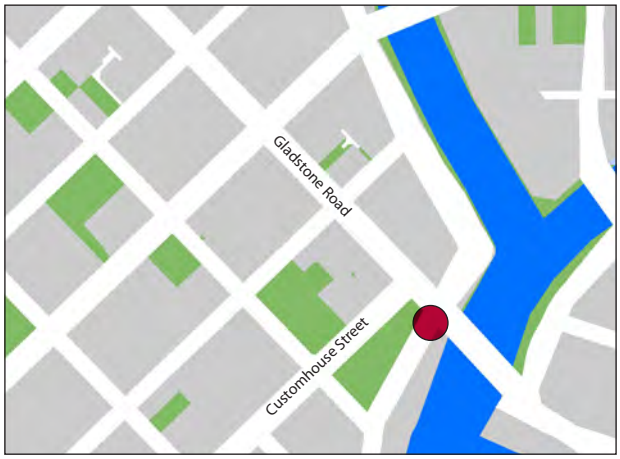
PLANTING OPTIONS

Perennial species	Common name	Notes
Cordyline australis purpurea	Cabbage tree	• NZ native • Purple leaved variety
Trachelospermum jasminoides	Star Jasmine	• Part shade to full sun • Trim when required

WORK SCHEDULE



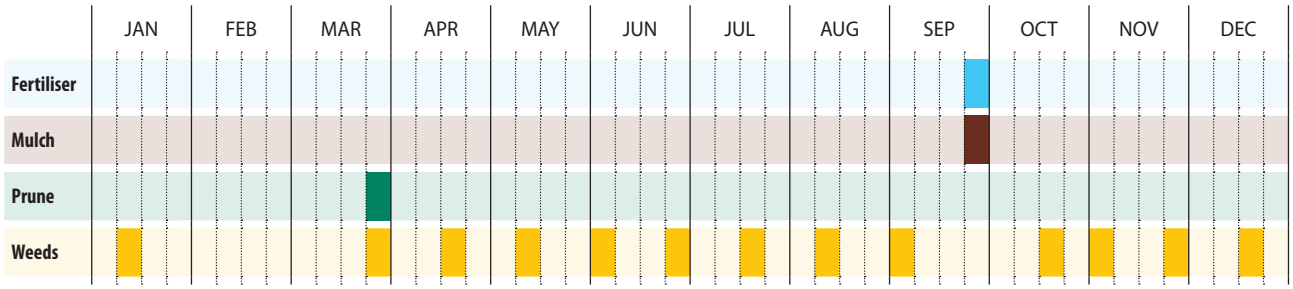
READS QUAY/GLADSTONE ROAD **GARDEN**



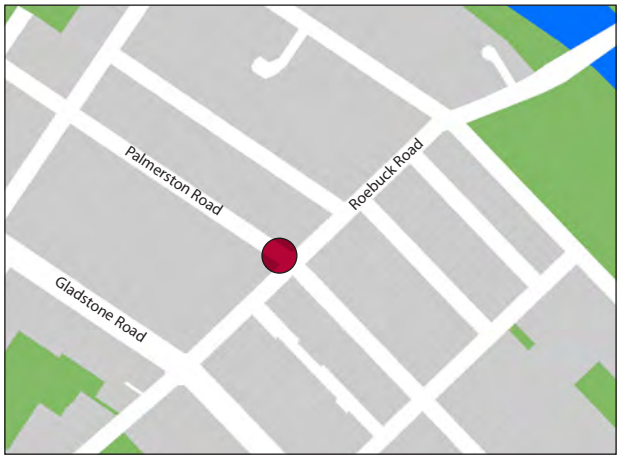
PLANTING OPTIONS

Perennial species	Common name	Notes
Carex virgata	Carex	• NZ native grass • Hardy • Full sun or shade

WORK SCHEDULE



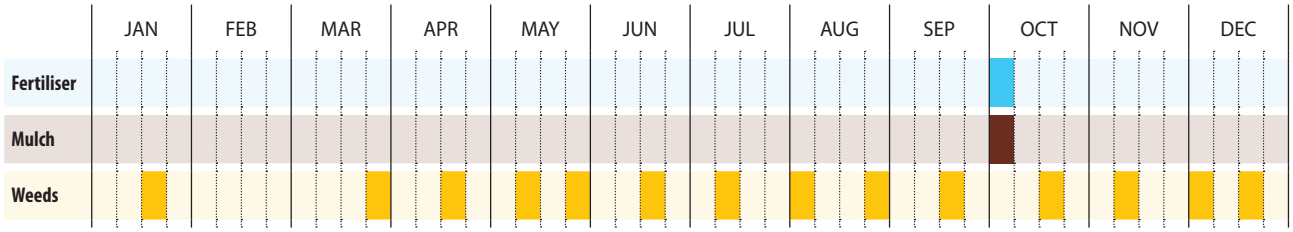
PALMERSTON/ROEBUCK **GARDEN**



PLANTING OPTIONS

Perennial species	Common name	Notes
Corokia 'Geenty's Ghost'	Corokia	• NZ native shrub • Full sun to part shade
Libertia 'Taupo Blaze'	New Zealand Iris	• NZ native • Sun to semi-shade • Hardy

WORK SCHEDULE

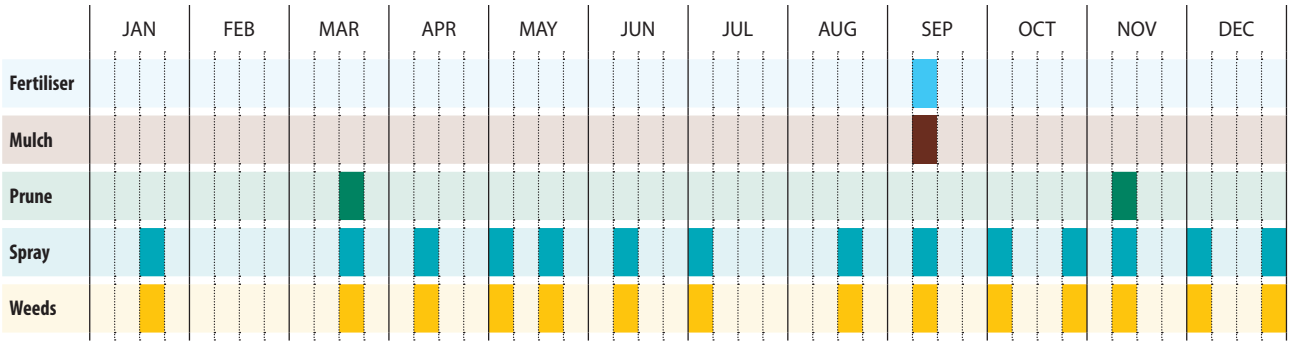


MURIAL JONES WALKWAY **GARDEN**

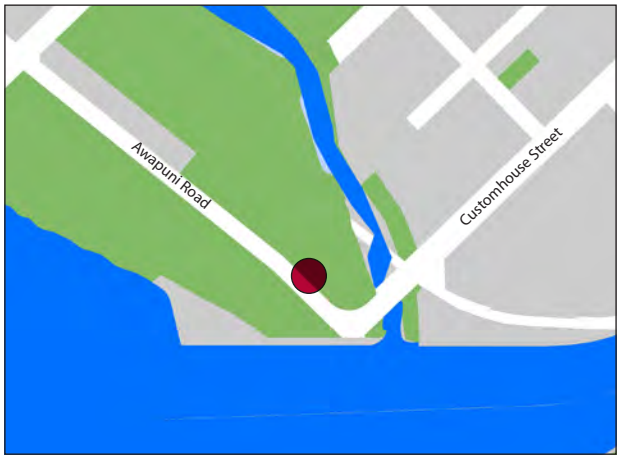
PLANTING OPTIONS

Perennial species	Common name	Notes
Astelia chathamica	Astelia	• NZ native • Sun to semi shade • Good drainage • Hardy
Corokia 'Geenty's Ghost'	Corokia	• NZ native shrub • Full sun to part shade
Libertia peregrinans	New Zealand Iris	• NZ native; • Sun to semi-shade • Hardy
Ophiopogon japonicus	Mondo Grass	• Full sun to part shade • Well drained

WORK SCHEDULE



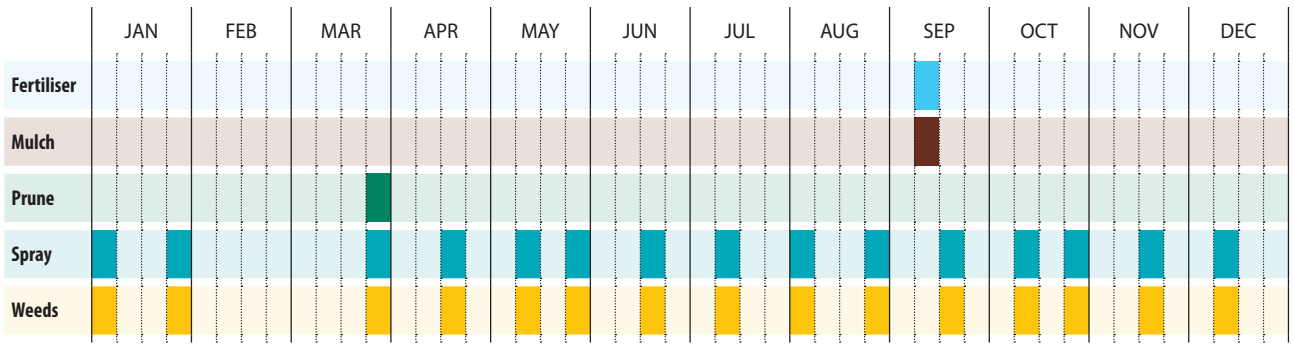
VINTAGE RAILWAY **SIDE GARDEN**



PLANTING OPTIONS

Perennial species	Common name	Notes
Carex virgata	Carex	• NZ native grass • Hardy • Full sun or shade
Hebe 'Tairawhiti'	Hebe	• NZ native shrub • Hardy
Phormium cookianum	Flax	• NZ native • Hardy
Pseudopanax ferox	Lancewood	• NZ native
Sophora 'Dragons Gold'	Kowhai	• NZ native • Dwarf form of Kowhai tree

WORK SCHEDULE

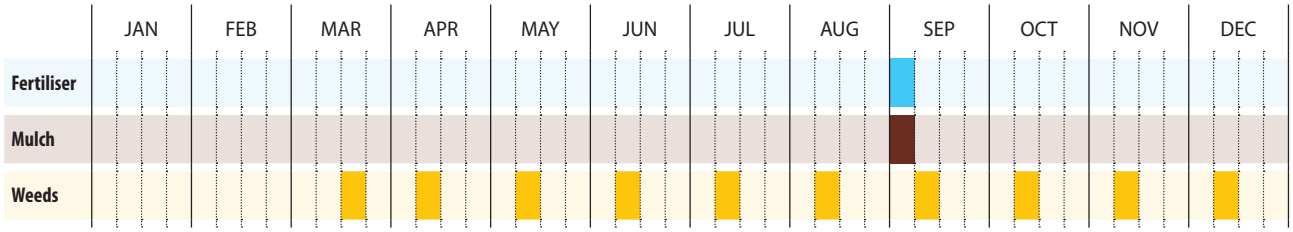


CENTENNIAL MARINE DRIVE **TREE PITS**

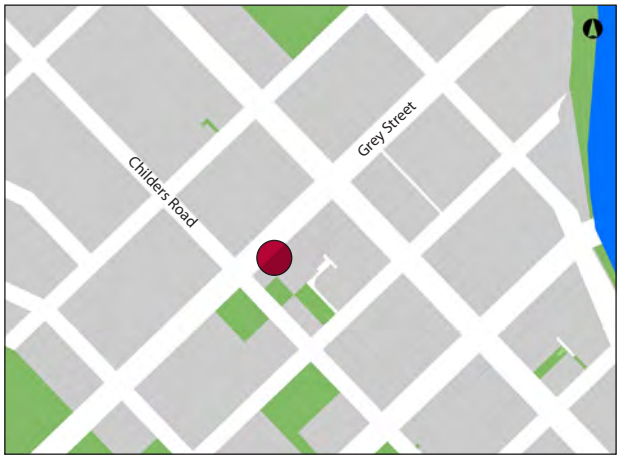
PLANTING OPTIONS

Perennial species	Common name	Notes
Apodasmia similis	Oioi	• NZ native rush • Very hardy

WORK SCHEDULE



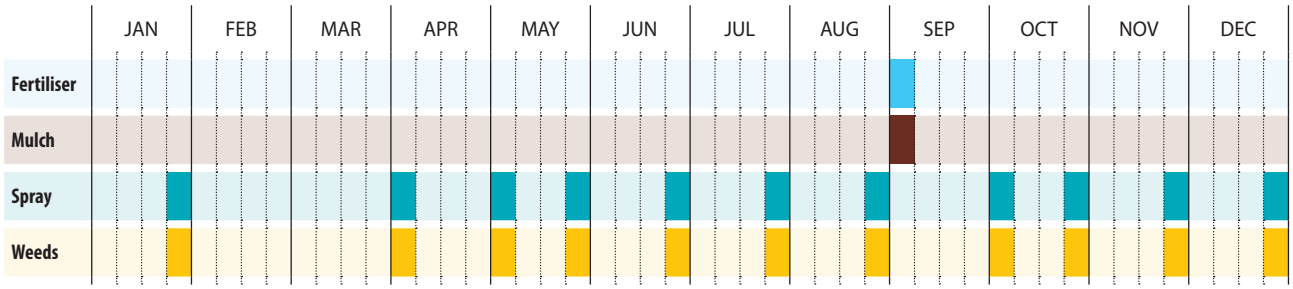
GREY STREET **CARPARK**



PLANTING OPTIONS

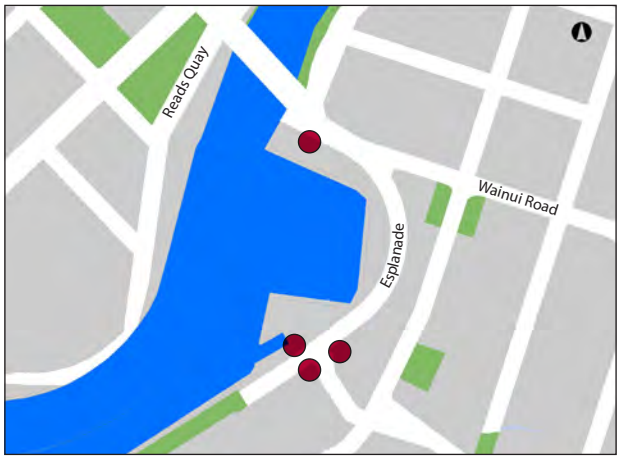
Perennial species	Common name	Notes
Acaena purpurea	Bidibidi	• NZ native groundcover
Chionochloa flavicans	Miniature toetoe	• NZ native gras • Hardy • Open aspect, full sun • Freely-draining soil

WORK SCHEDULE



BRONZE STANDARD

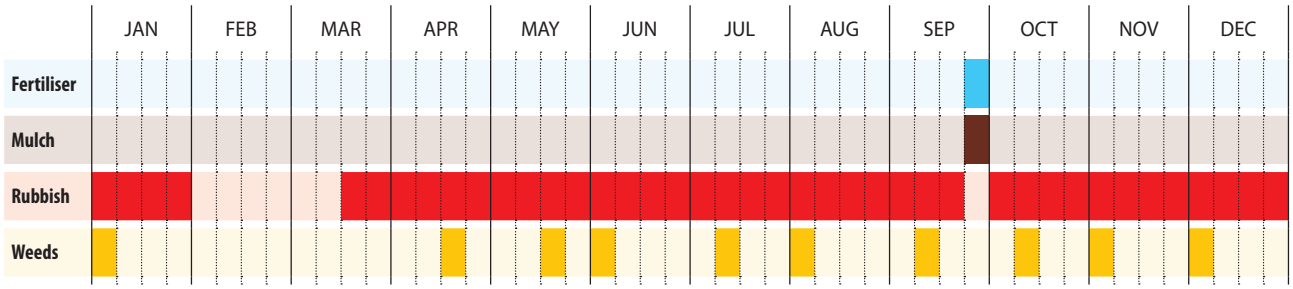
INNER HARBOUR **GARDENS**



PLANTING OPTIONS

Perennial species	Common name	Notes
Coprosma acerosa	Sand coprosma	• Forms a tight tangled mound of brown foliage • Drought hardy
Muehlenbeckia complexa	Pohuehue	• NZ native shrub • Hardy
Pimelea prostrata	New Zealand Daphne	• NZ native groundcover
Phormium cookianum	Flax	• NZ native • Hardy
Pseudopanax lessonii	Houpara	• NZ native shrub • Hardy coastal species

WORK SCHEDULE

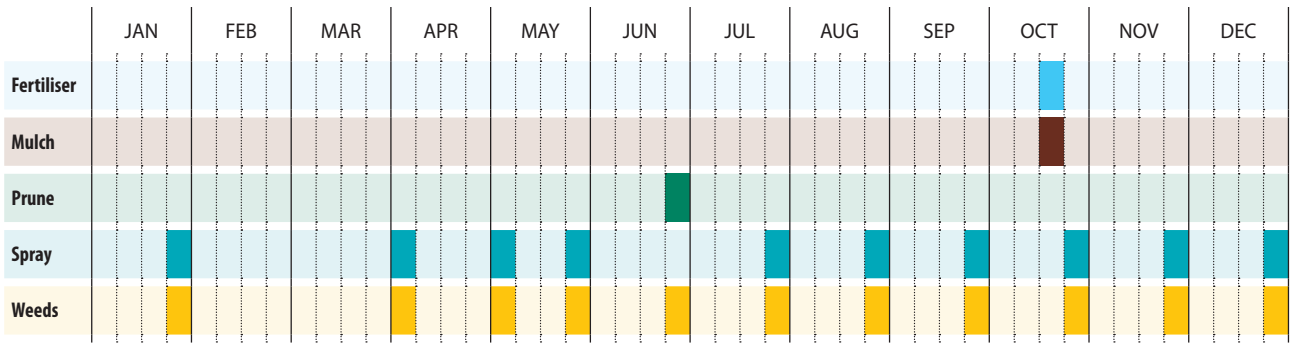


RURU AVENUE/POHUTUKAWA GROVE **GARDENS**

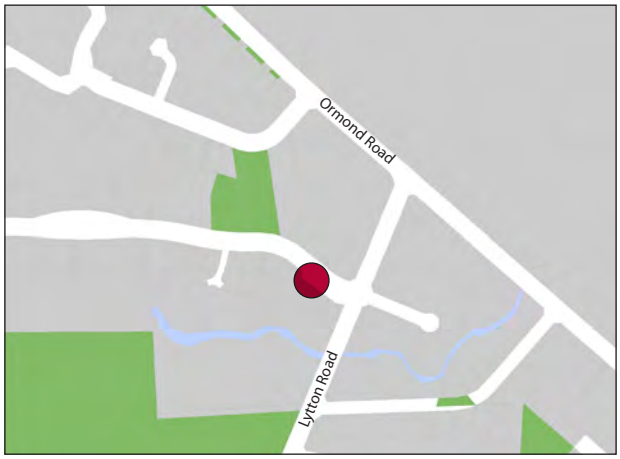
PLANTING OPTIONS

Perennial species	Common name	Notes
Hebe spp.	Hebe	• NZ native shrub
Metrosideros excelsa Scarlet Pimpernel	Pohutukawa	• NZ native tree • Smaller form to 4m • Hardy
Lomandra 'Tanika'	Lomandra	• Very hardy • Part shade to full sun

WORK SCHEDULE



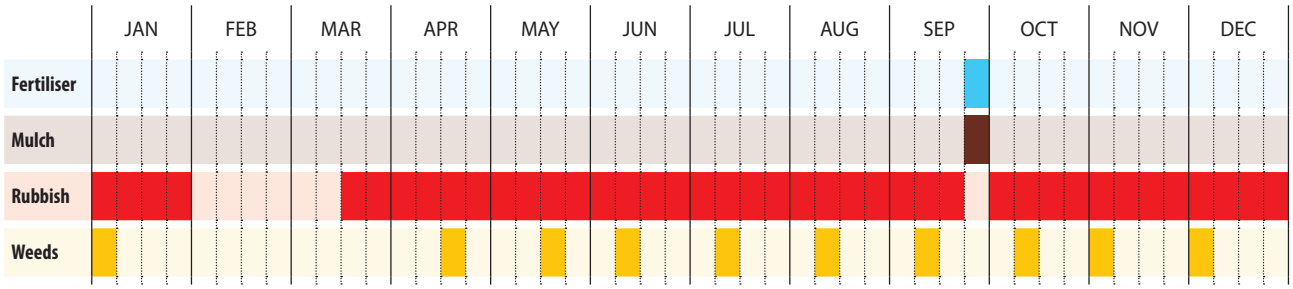
LYTTON WEST **TOILETS GARDENS**



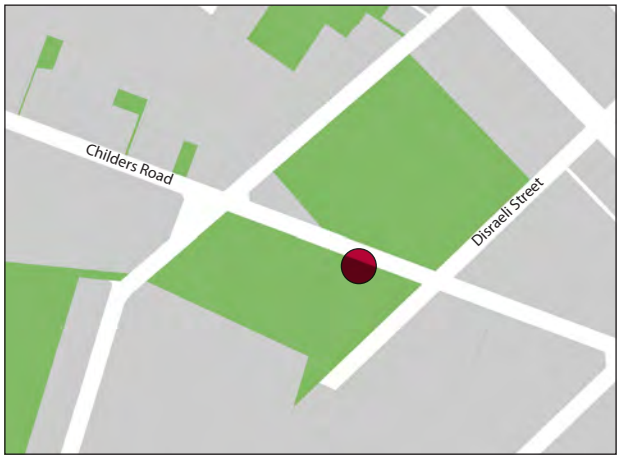
PLANTING OPTIONS

Perennial species	Common name	Notes
Chionochloa flavicans	Miniature toetoe	• NZ native grass • Hardy • Open aspect, full sun • Freely-draining soil
Lithospermum 'Grace Ward'	Lithospermum	• Hardy ground cover • Deep green foliage and prolific blue flowers
Nandina Gulfstream	Nandina	• Hardy evergreen • Multi coloured foliage turning to rich red in cooler months

WORK SCHEDULE



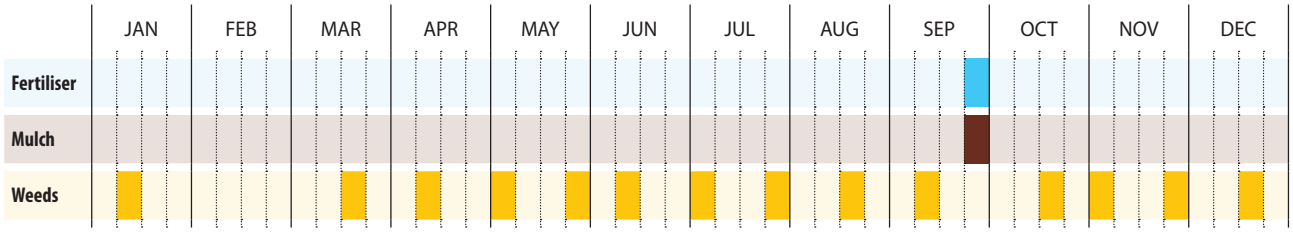
VICTORIA DOMAIN **SQUASH CLUB GARDENS**



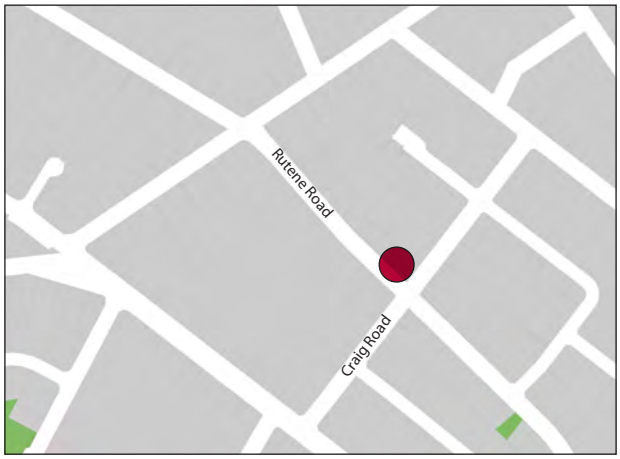
PLANTING OPTIONS

Perennial species	Common name	Notes
Dietes grandiflora	African Iris	• Does well in hot and dry conditions • Sun or part shade

WORK SCHEDULE



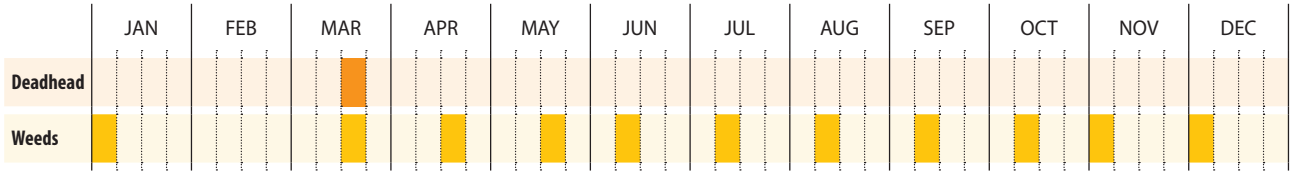
RUTENE/CRAIG ROAD **GARDENS**



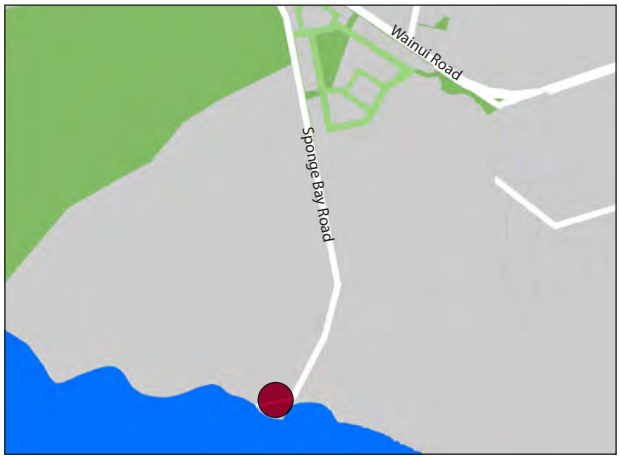
PLANTING OPTIONS

Perennial species	Common name	Notes
Arthropodium cirratum Matapouri Bay	Rengarenga	• NZ native • Protect from slug and snail damage

WORK SCHEDULE



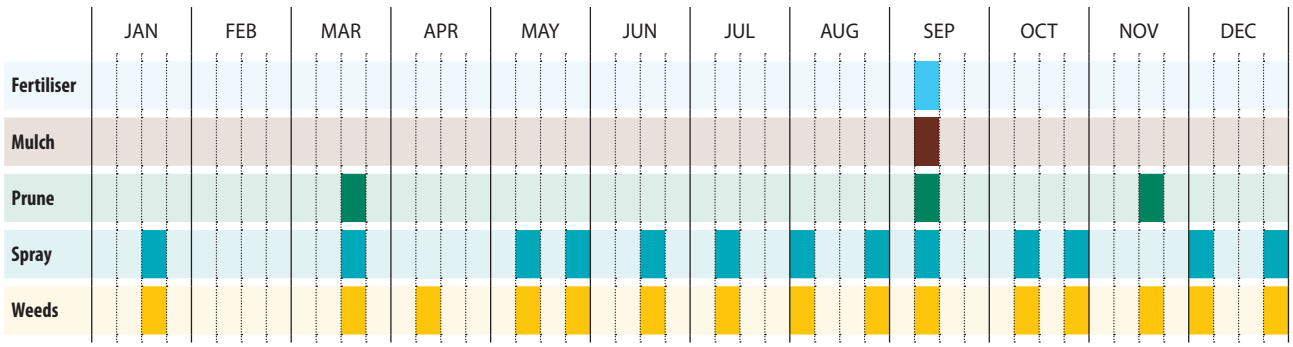
SPONGE BAY ROAD **END**



PLANTING OPTIONS

Perennial species	Common name	Notes
Apodasmia similis	Oioi	• NZ native rush • Very hardy

WORK SCHEDULE

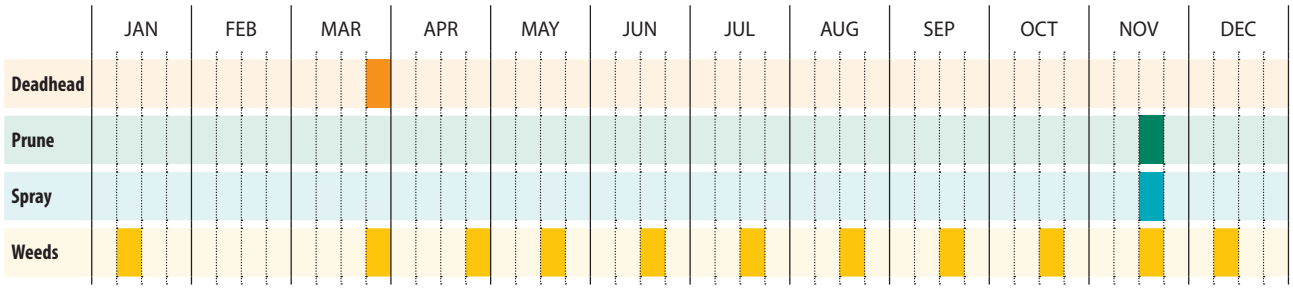


OCEAN PARK ROAD **MEDIAN GARDENS**

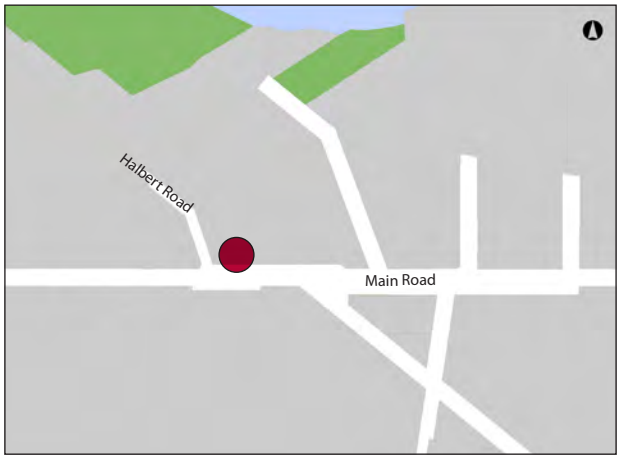
PLANTING OPTIONS

Perennial species	Common name	Notes
Corea alba	White Correa	• Very hardy shrub
Libertia 'Taupo Blaze'	New Zealand Iris	• NZ native • Sun to semi-shade • Hardy
Muehlenbeckia complexa	Pohuehue	• NZ native shrub • Hardy

WORK SCHEDULE



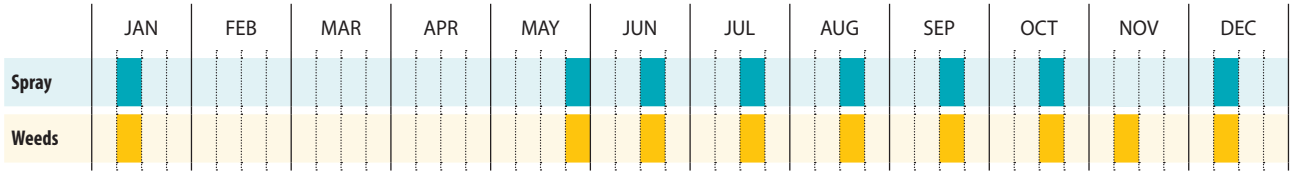
MAKARAKA **LAYBY**



PLANTING OPTIONS

Perennial species	Common name	Notes
Dianella 'Little Jess'	Dianella	• Very drought tolerant • Hardy flax lily
Hebe speciosa	Hebe	• NZ native shrub • Wind and coastal hardy
Sophora 'Dragons Gold'	Kowhai	• NZ native • Dwarf form of Kowhai tree

WORK SCHEDULE

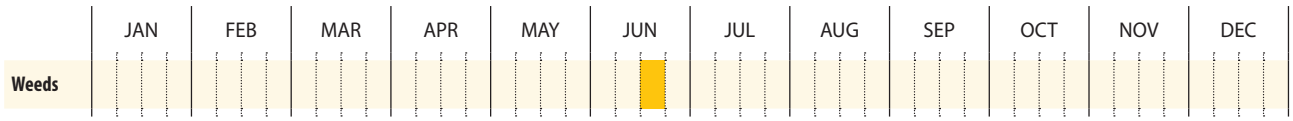


AWAPUNI **ROADSIDE GARDENS**

PLANTING OPTIONS

Perennial species	Common name	Notes
Arthropodium cirratum Matapouri Bay	Rengarenga	• NZ native • Protect from slug and snail damage
Corokia 'Geenty's Ghost'	Corokia	• NZ native shrub • Full sun to part shade
Muehlenbeckia complexa	Pohuehue	• NZ native shrub • Hardy
Phormium 'Evening Glow'	Flax	• NZ native flax cultiva • Bright red leaves and bronze margins

WORK SCHEDULE



APPENDIX 1 - TECHNICAL GUIDELINES

The various guidelines set out below have been derived from construction standard specifications, arborist best practice, service providers and landscape architects. These guidelines are only 'ideal' and are not to be taken as specifications. This is due to the nature of having trees in dense urban environments, with site - by - site specific requirements. The central city is full of underground services and these are located differently on every street, therefore the following guidelines are only a guide.

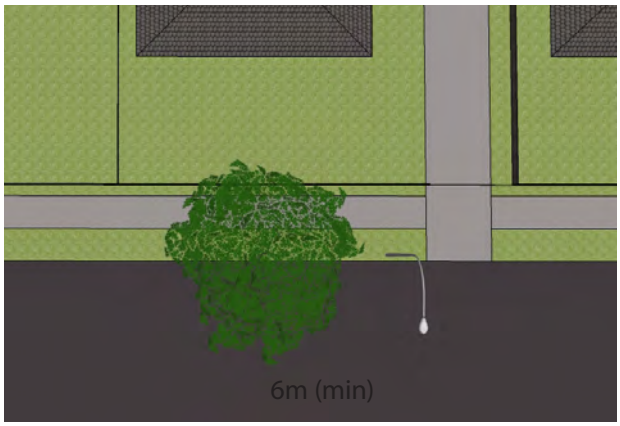
SAFE PLANTING DISTANCES

There are a variety of elements in the streetscape that will affect the location of trees in streets. Some of these are outlined in the table below:

STREETSCAPE ELEMENT	TREE LOCATION
Street intersection	10m from kerb
Light standards, power poles and sign posts	6m from the centre of pole
Stormwater drain	2m from the edge of the grate
Bus stop	3m from the edge of the zone
Traffic lights	10m from pole
Pedestrian crossings	6m from the painted lines

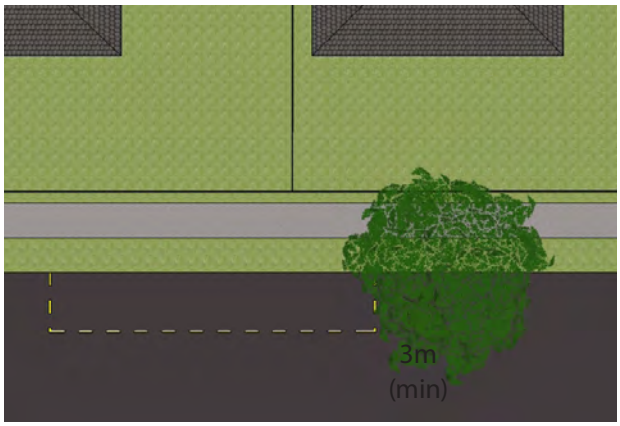
Where possible trees are to be located in straight formal lines/ rows along streets. Clustering trees will only be acceptable within reserves or in special locations as an accent. Trees will not be located in the road carriageway. The only exception to this is along the principle and secondary corridors.

LOCATION OF TREES IN STREETS



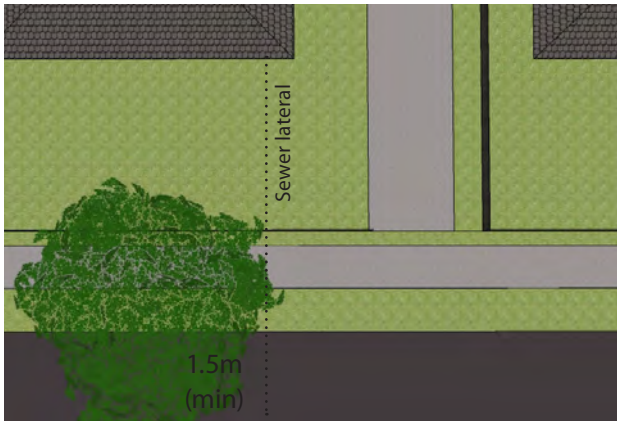
Light Standards and Power Poles

Driveways

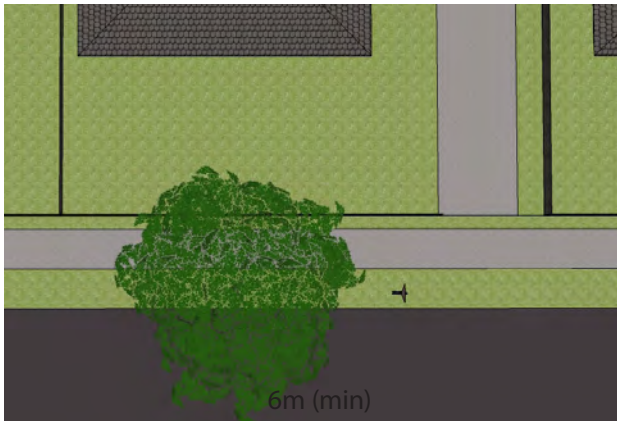


Bus Stops

Pedestrian Crossings



Sewer Laterals



Signs Posts

SERVICES

The main services affecting the placement of street trees are underground services, overhead wires and lighting. These will most likely determine the final location of trees. Before designing for a street the location of services will need to be gained from the various service providers.

The table below outlines some general rules of thumb:

SERVICES	DISTANCE
Fibre optic cables	3m
Sewer lateral	1.5m
High voltage cables	3m
Gas	3m
All other Telecom and Orion cables	1m

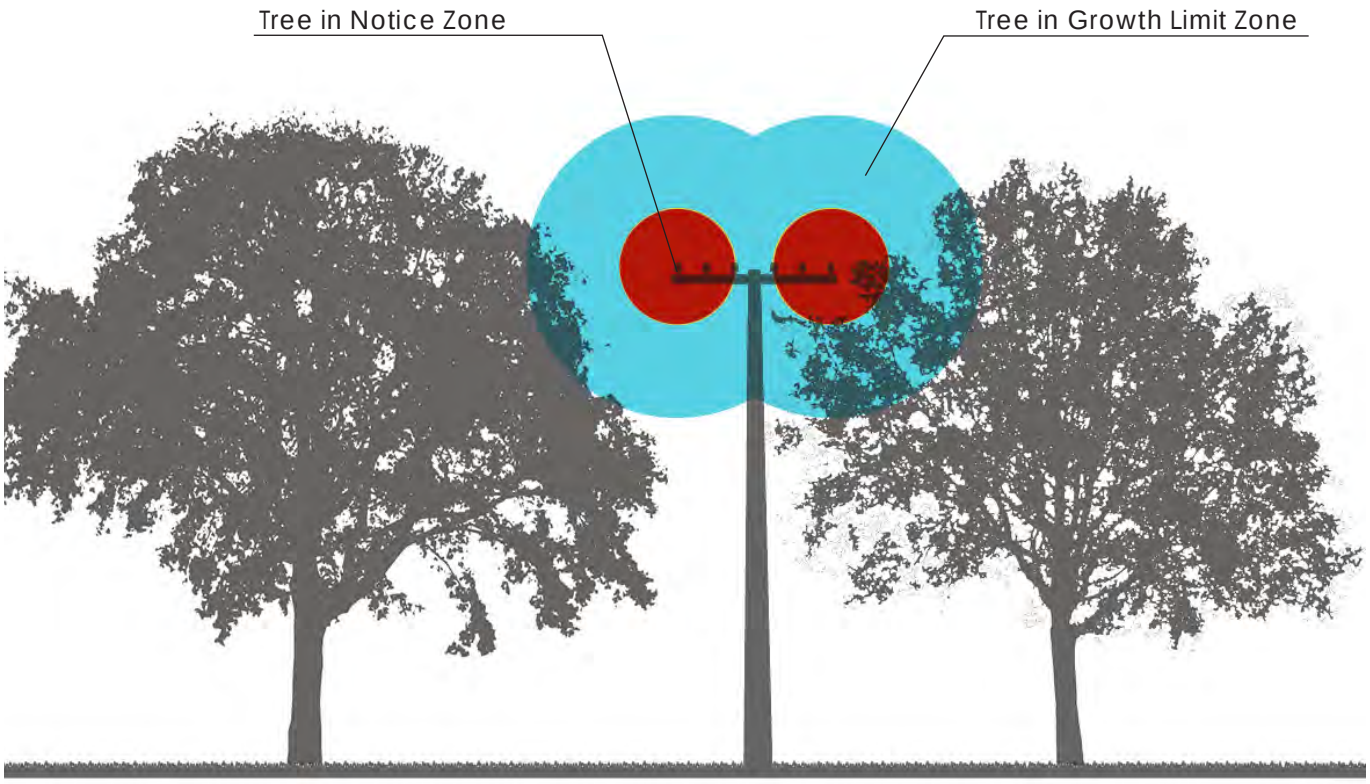
Where there are overhead wires, trees should be located as close to the kerb as possible, or a tree build-out created. Trees located underneath overhead wires will be a smaller species able to grow underneath.

TREES NEAR POWER LINES

Council has a legal obligation to comply with the Electricity (Hazards from Trees) Regulations 2003. When planning and undertaking new plantings in and around electricity lines, Council will ensure that the vegetation at mature height will comply with relevant growth limit zones as specified in those regulations (including recognition of both vertical and horizontal separation distances for electrical line spans over 150 meters) and therefore avoid the need for trimming. For existing vegetation Council will manage trees and vegetation to give effect to the regulations.

Growth Limit Zones (GLZ) are the minimum distances any tree, or part of a tree, must be kept away from an overhead power line or underground cable. Council should keep trees well outside these distances to allow for tree growth and adverse weather conditions. The GLZ varies depending on the voltage and span length of the lines - see the tables below.

The Notice Zone is a distance one metre from the tree to the GLZ for overhead lines. Should a tree reach this outer limit, the network operator may advise the owner that the tree is about to reach the GLZ.



GLZ WHERE OVERHEAD WIRE SPAN IS 150M OR LESS			
Voltage of Lines Growth Limit Zone	**Growth Limit Zone**	**Notice Limit Zone**	**Note:**
230-400 V	0.5m	1.5m	• These distances are from the power line, not the power pole. • These distances are a minimum and apply in all conditions including high wind or snow. • In most instances the power lines that go to a house or building are low voltage power lines. Power lines that go down a street may be low or high voltage.
6.6kV	1.6m	2.6m	
11kV	1.6m	2.6m	
33kV	2.5m	3.5m	
50-66kV	3.0m	4.0m	
66kV or greater	4.0m	5.0m	

GLZ WHERE OVERHEAD WIRE SPAN EXCEEDS 150M			
Wire Span	**Horizontal GLZ(1)**	**Vertical GLZ**	**Note:**
150-300m	8.0m	4.0m	• Add an extra metre to identify the notice zone distance • D1 = distance for the first 15% of each span at either end of span • D2 = distance from the centre 70% of each Span
301-500m	15.0m	4.0m	
501-700m	30.0m	4.0m	
701 or greater	50.0m	4.0m	

Measured from centre of span.

SPACING OF STREET TREES

Generally trees should be spaced sufficiently apart to allow healthy development of mature canopies. Where possible, tree planting should aim for an even spacing of tree trunks. In most urban conditions it is difficult to achieve even spacing of tree trunks. Spacing will invariably be decided due to services and different size of trees. However a rule of thumb is:

TREE SIZE	SPACING
Small	5-10m intervals
Medium	10-15m intervals
Large	15-20m intervals

FOOTPATH WIDTH

If trees are to be planted in the footpath, there needs to be adequate space for the tree to thrive. Current practice is:

- ü Minimum footpath width of 3.0m for small street tree species
- ü Minimum footpath width of 4.5m for large street tree species
- ü Minimum berm width of 1.2m for small trees

Trees will generally not be planted in footpaths that are less than 3.0m wide. For those footpaths that are less than 3.0m, trees will be planted in build outs.

TREES LOCATED IN MEDIANS

Where carriageway width and services allow, trees may be planted to medians. Median strips need to be a minium of 1.5 m wide to allow adequate room for growth.

Placement in relation to street lighting

Street lighting should be co ordinated with tree placement and pruning so that canopies do not sit directly below street lighting. For whole street renewals where new lighting is being placed, street lights should be located halfway between trees. Where trees are being added to an existing streetscape, the tree pit should respond to the location of existing lighting.

LOCATION ADJACENT TO PARKS AND OPEN SPACES

Street trees shall not be planted adjacent to any existing parks and reserve spaces. Trees may however be planted on the opposite side of the road from existing parks and reserve spaces.

DISTANCE FROM BUILDING

Trees should generally be a minimum 2.5 - 3m from the building wall to allow sufficient light into the building and space for pedestrians.

LOCATION FROM ENTRANCES

Where possible, trees are not to be located in front of doorways or entrances.

LOCATION TO PARKING

Trees should be appropriately located to allow pedestrians to access their vehicles without conflict.

SPECIES CONTINUITY

The same species are to be planted along the whole of a block. A change cannot occur mid-block. A change in species type can only occur after an intersection.

VERANDAS

3-4m clear trunk for trees planted next to awnings.

TREE DIMENSIONS

Grade

All trees planted are to be at a minimum grade of Pb 95 or 45L.

Trunk

A clear trunk of 2.5m should be provided if a tree is to be located within traffic sightlines

Caliper

The minimum size differs between species, however as a general rule of thumb bigger is better as it is less likely to be vandalised and will have more energy to grow.

Age

Ideally trees should be planted at about 5-6 years old.

UNDERSTOREY PLANTINGS

Group all shrubs/groundcovers together in mulched plant beds that are designed to minimise maintenance requirements.

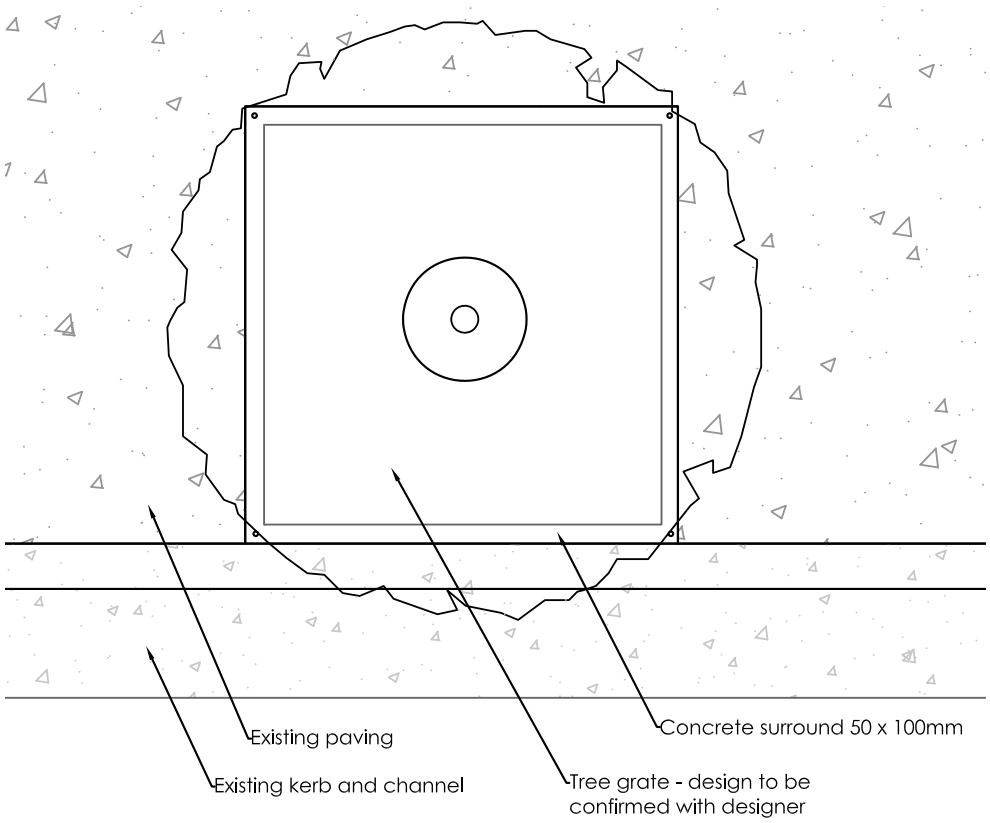
All shrubs/groundcover located beside a road, within traffic sight lines, shall be a maximum height of 0.6m high.

Plants shall be planted with mature sizes in mind, and they should not interfere with the use of the footpath and become a trip hazard. Plants with drooping stems or leaves should be planted where they will not become a trip hazard. Plants should therefore be given adequate space to grow and be planted a distance away from the footpath.

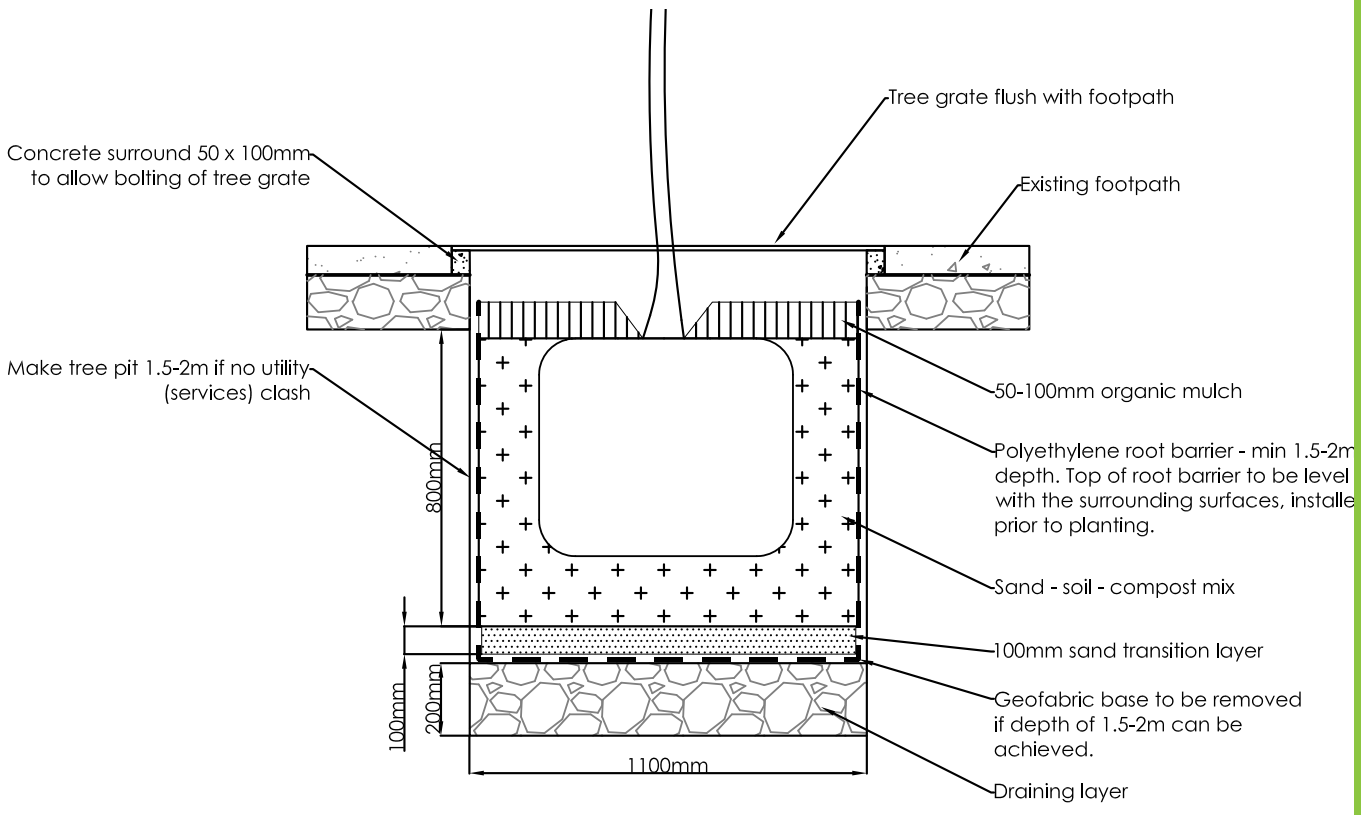
Life span: Plant species should have a design life of 5 to


SHARE

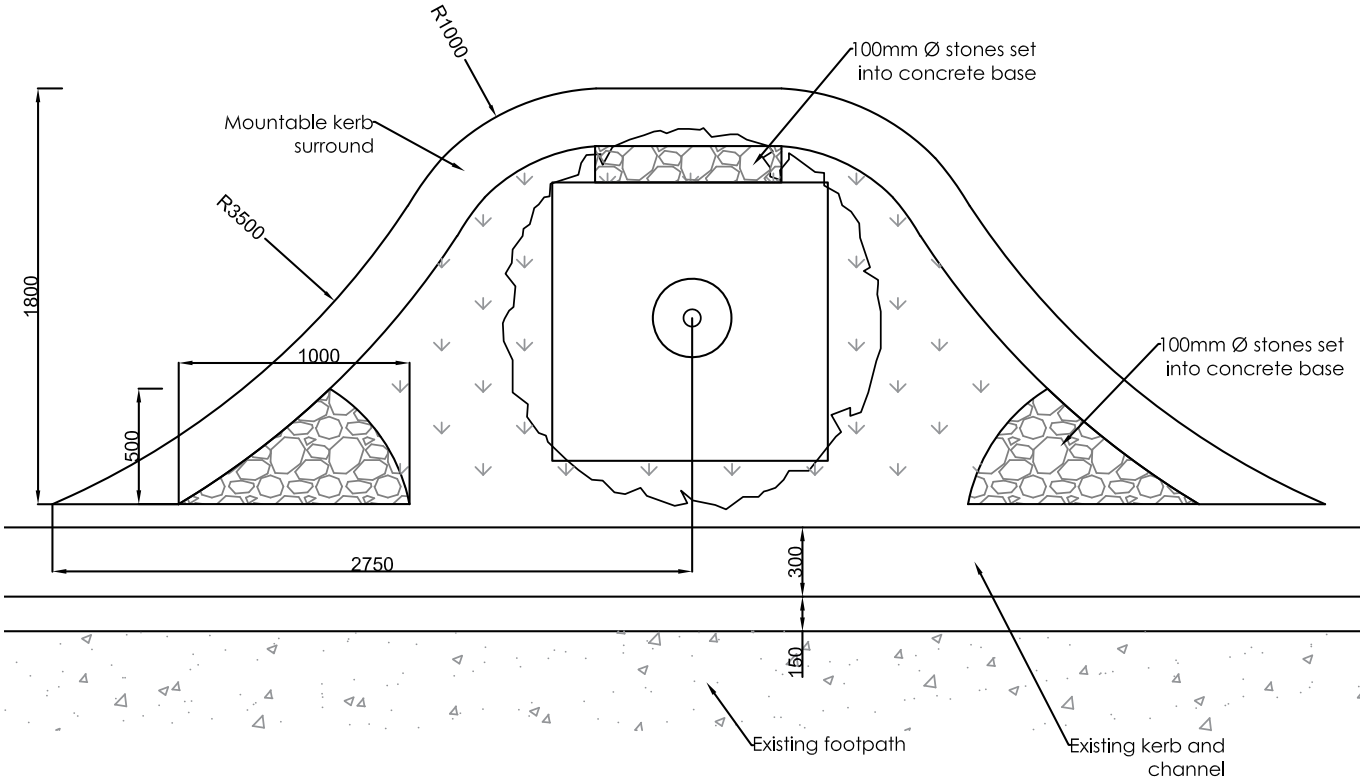
TREE PITS IN FOOTPATH - PLAN VIEW 1:20



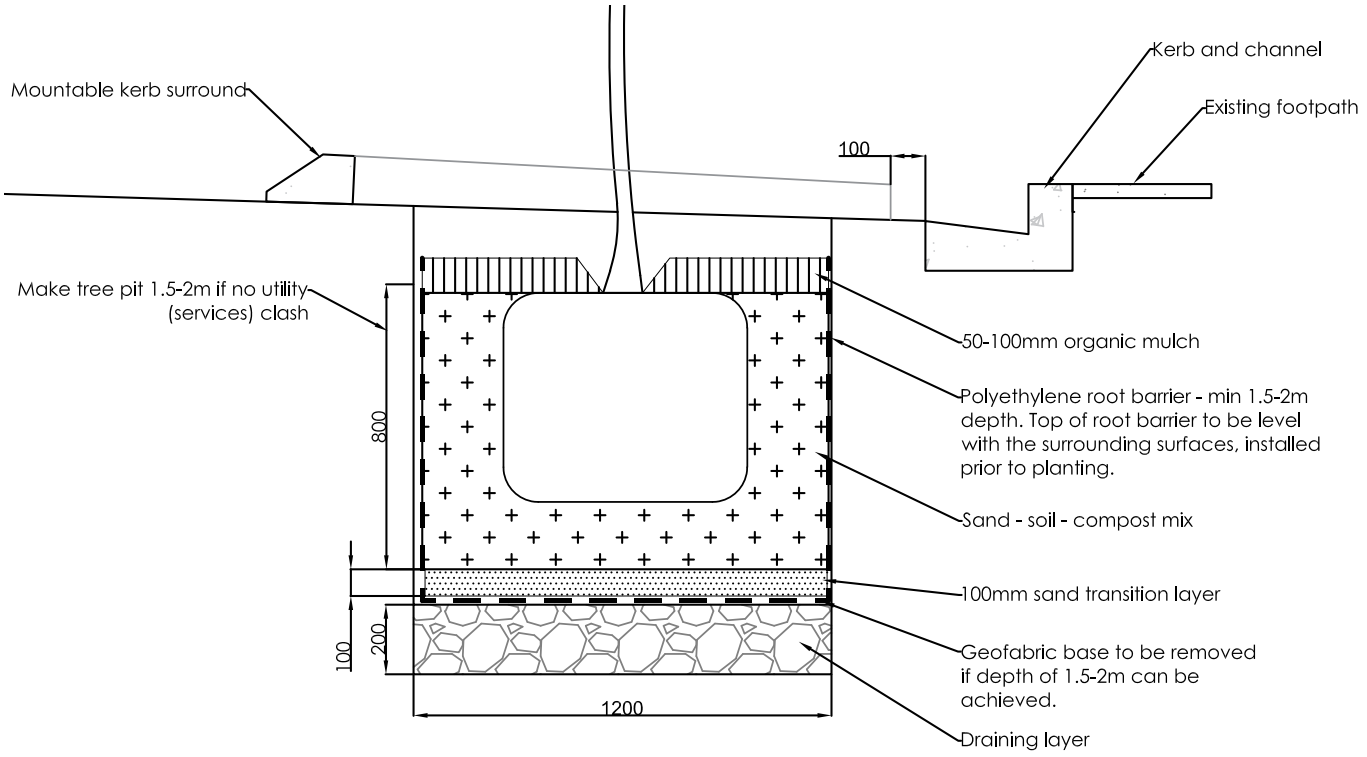
TREE PITS IN FOOTPATH - SECTION VIEW 1:20



TREE PITS IN KERB - PLAN VIEW 1:30



TREE PITS IN KERB - SECTION VIEW 1:20



APPENDIX 2 - SCHEDULE OF RECOMMENDED TREES

General information				Environmental			Functional	Design		
Species	Common Name	10yr Height	10yr Spread	Soil Conditions	Environmental Tolerances	Benefits to Wildlife	Growth Rate	Habit	Deciduous/ Evergreen	Foliage/Colour
Acer palmatum	Japanese Maple	5m	4m	Moist, well drained	Mod drought, frost	No	Mod	Rounded, oval	Deciduous	Finely serrated green leaves changing to shades of yellow, orange and crimson.
Acer rubrum '"Bowhall"'	Red Maple	12m	5m	Moist, well drained	Tolerates most soils	No	Fast	Upright, broadly columnar	Deciduous	Large green leaves with silvery undersides turning orange and red in autumn.
Acer rubrum x freemanii '"Jeffersred"'	Freeman Maple	12m	5m	Moist, well drained	Tolerates most soils	No	Fast	Vase shaped	Deciduous	Large green leaves with silvery undersides turning orange and red in autumn.
Aesculus hippocastanum	Horse Chestnut	5m	4m	Moist, well drained	Tolerates most soils	No	Mod	Spreading	Deciduous	Large deep green fan shaped leaves with white flowers in spring.
Albizzia julibrissen 'Red Silk'	Silk tree	5m	4m	Moist, well drained	Tolerates most soils	Nectar for birds and bees	Mod	Umbrella	Deciduous	Red silky fragrant summer flowers, with ferny leaves, on wide spreading branches.
Alectryon excelsus	Titoki	7m	6m	Normal - avoid wet areas	High drought	Attracts birds	Slow	Round headed	Evergreen	Glossy green leaves. Shiny black seeds emerge from scarlet fruit during summer.
Arecastrum romanzoffianum	Queen palm	10m	3m	Acidic, well drained	Mod drought	No	Fast	Rounded, open crown	Evergreen	Dark green upright and spreading fronds.
Banksia integrifolia	Coastal Banksia	8m	4m	Tolerates most soils	Coastal, drought	Flowers attract birds	Fast	Upright, erect	Evergreen	Yellow 'bottlebrush' flowers, serrated, leathery green leaves
Butia capitata	Jelly palm	5m	3m	Tolerates most soils	Very hardy	No	Slow	Rounded, open crown	Evergreen	Grey-blue feathery leaves arching to 2m or more.
Callistemon '"Western Glory'	Bottlebrush	2.5m	2m	Tolerates most soils	Coastal, drought	Flowers attract birds	Fast	Upright, erect	Evergreen	New pink shoots mature to leathery green leaves. Large heads of deep red flowers.
Carpinus betulus 'Fastigiata'	Upright Hornbeam	8m	4m	Moist, well drained	High drought, wind, frost, heat, pollution	No	Mod	Pyramidal, conical	Deciduous	Toothed, glossy and bright green leaves turn yellow - orange in autumn.
Cercis canadensis 'Texas White'	Texas Whitebud	4m	3m	Humus rich free draining	Mod drought,frost	No	Mod	Round headed	Deciduous	Large heart shaped leaves mature to bright yellow. White pea shaped flowers on bare branches in spring.
Cornus florida 'Cherokee Chief'	Flowering Dogwood	4m	3.5m	Moist, well drained	Frost	No	Mod	Upright	Deciduous	Deepest red flowering cornus. New growth is bronze red turning bright scarlet when mature.
Cornus kousa	Chinese Dogwood	4m	4m	Moist, well drained	-	Fruit attracts birds	Mod	Upright, spreading	Deciduous	Dark green leaves turning yellow and scarlet in autumn.
Dodonaea viscosa	Akeake	2m	2m	Moist, well drained	Salt winds, dry conditions	No	Mod	Rounded	Evergreen	Pale green, long, thin and willow-like leaves.

General information				Environmental			Functional	Design		
Species	Common Name	10yr Height	10yr Spread	Soil Conditions	Environmental Tolerances	Benefits to Wildlife	Growth Rate	Habit	Deciduous/ Evergreen	Foliage/Colour
Fagus sylvatica 'Dawyck Green'	Upright Green Beech	8m 2m		Moist, well drained, dry	Wind	Fruit attracts birds	Mod	Upright, columnar	Deciduous	Deep green leaves in spring, turning cinnamon brown in autumn.
Fraxinus excelsior 'Purple Spire'	Purple Ash	8m	4m	Moist, well drained	Strong winds	No	Fast	Upright, pyramidal	Deciduous	Leaves turn purple then glowing orange in autumn.
Fraxinus griffithii	Evergreen Ash	3m	2m	Moist, well drained	Heat	No	Fast	Round headed	Deciduous	Dark green leaves turning gold to purple in autumn.
Fraxinus pennsylvanica 'Cimmzam'"	Cimmaron Ash Tree	8m	5m	Moist, well drained	High drought, wind	No	Mod	Narrow broadening with age.	Deciduous	Dark green leaves which are lighter underneath, turning deep burgundy and brick red in autumn.
Fraxinus velutina	Velvet Ash	15m	10m	Moist, well drained	Pollution, poor drainage, drought	No	Fast	Rounded crown	Deciduous	Thin, glossy green leaves that are grey/silvery below. Golden autumn leaves.
Ginkgo biloba (male)	Maidenhair tree	7m	4m	Moist, deep, fertile	Moderate heat, pollution	No	Slow	Pyramidal	Deciduous	Unique fan-shaped, mid-green leaves turning butter yellow in autumn.
Ginkgo biloba 'Jade Butterflies'	Maidenhair tree	3m	2m	Moist, deep, fertile	Moderate heat, pollution	No	Mod	Semi-dwarf, pyramidal	Deciduous	Unique fan-shaped, mid-green leaves turning butter yellow in autumn.
Idesia polycarpa	Wonder Tree	7m	6m	Moist, well drained	Mod drought	No	Fast	Round headed	Deciduous	Tiered horizontal branch structure. Heart shaped leaves. Female trees bear bunches of bright red berries through winter.
Jacaranda mimosifolia	Jacaranda	7m	5m	Moist, well drained	Moderate heat	No	Fast	Spreading	Deciduous	Soft ferny leaves. Large mauve blue trumpet like flowers early summer.
Knightia excelsa	Rewarewa	7m	4m	Tolerates most soils	Poor soils, frost, wind	Flowers attract birds.	Mod	Upright columnar	Deciduous	Large long leathery leaves are heavily serrated. Spidery red flowers.
Lagerstroemia indica '"Kimono'	Crepe Myrtle	3m	3m	Tolerates most soils	Heat, drought	No	Mod	Upright, vase shaped	Deciduous	Lime green leaves in spring turn green through summer. Pure white flowers from mid-summer.
Liquidambar styraciflua '"Aurora'"	American Sweetgum	4m	3m	Moist, well drained	-	No	Slow	Compact, pyramidal	Deciduous	Large maple green leaves turn red, yellow, orange and purple in autumn.
Liquidambar styraciflua 'Little Richard'	Dwarf Sweetgum	3m	2m	Moist, well drained	Frost, mod drought	No	Mod	Narrow, upright	Deciduous	Smaller finer leaves turn brilliant crimson in autumn.
Liquidambar styraciflua 'Worplesdon'	American Sweetgum	6m	5m	Tolerates most soils	Frost, mod drought	No	Fast	Upright, pyramidal	Deciduous	Green maple like leaves turn to pale orange and apricot in autumn.
Liriodendron tulipifera 'Fastigiata'	Arnold Columnar Tulip	5m	1.5m	Moist, well drained	Poor soil, frost, pollution	No	Fast	Upright, columnar	Deciduous	Spring foliage green turning to a brilliant gold in autumn.
Melia azedarch	Indian Bean Tree	7m	6m	Tolerates most soils	High drought,	Wind, frost,	Mod coastal	No mod open form, spreading	Branches.	Deciduous pinnate green leaves turn yellow in autumn. Small, fragrant lilac flowers.
Meryta sinclairii	Puka	4m	3m	Sandy, moist free draining	Coastal	-	Fast	Rounded small tree	Evergreen	Paddle shaped, glossy green leaves
Metrosideros "Mistral	Pohutukawa (Northern Rata Cross)	5m	4m	Sandy, moist free draining	Coastal, wind, poor soil, high drought	Food source for birds	Mod	Small, dense growing tree	Evergreen	Dark green leaves. Scarlet red flowers through december.
Metrosideros excelsior '"Vibrance	Pohutukawa	5m	4m	Sandy, moist free draining	Poorsoil,highdrought,wind	Foodsourceforbirds	Mod	Upright,dense,compact form	Evergreen	Leatheryleavesarelightgrey-greenabove,withdensewhitehairsbelow.Showyclusters of vibrant orange-red flowers in early summer.
Metrosideros excelsior'Maori Princess'	Pohutukawa	7m	5m	Sandy, moist free draining	Coastal,wind,poorsoil,high drought	Foodsourceforbirds	Mod	Upright, narrow growth habit	Evergreen	Dark green leaves. Scarlet red flowers through december.

General information				Environmental			Functional	Design		
Species	Common Name	10yr Height	10yr Spread	Soil Conditions	Environmental Tolerances	Benefits to Wildlife	Growth Rate	Habit	Deciduous/ Evergreen	Foliage/Colour
Metrosiderosexcelsior'ScarletPimpernel'™	Pohutukawa	5m	4m	Sandy, moist free draining	Poorsoil,highdrought,wind	Foodsourceforbirds	Mod	Small, multi-stemmed grower.	Evergreen	Glossydeepgreenleaves.Flowersintermittentlythroughtheyearwithscarletred brushes.
Nestegis cunninghamii	Black Maire	10m	6m	-	Drought	Foodsourceforbirds	Fast	Thicktrunkwitharounded head	Evergreen	Darkgreenleavesarenarrowandleathery.Insignificantflowersfollowedbybunchesof red berries.
Nyssa sinensis	Chinese Tupelo	5m	4m	Any soil	Wet feet, frost, poor soil, drought, wind coastal	No	Mod	Pyramidal, conical	Deciduous	Smooth leaves which turn vibrant scarlet pink and orange in autumn.
Platanus acerifolia 'Pyramidalis'	Upright London Plane	10m	6m	-	Hardy	No	Fast	Rounded oval	Deciduous	Large green, palmate leaves.
Platanus orientalis 'Fitzherbert'	Cut Leaf Plane	7m	7m	-	Wind, heavy clay	No	Fast	Upright, pyramidal	Deciduous	Deeply cut, green fingered leaves.
Podocarpus totara	Totara	6m	4m	Any soil	Highdrought,coastal,wind,frost, disease	Attract birds	Slow	Pyramidal, conical	Evergreen	New needle like leaves are a fresh green before maturing to a olive green to bronze.
Prunus 'Aokautere Gold'	Flowering Cherry	4m	3m	Moist, well drained	Hardy	No	Fast	Uprighttreewithspreadinghabit	Deciduous	Variegated foliage - yellow, gold, green and bronze. Soft pink flowers in spring.
Prunus serrulata 'Shirotae'	Mt Fuji Cherry	5m	5m	Dry, well drained	Tolerates most soils	No	Fast	Spreading	Deciduous	Snowwhiteflowersinspring.Leaveslightgreen,turningdarkerinthesummer.Lightyellowautumncolour.
Prunus sub. "Autumnalis Rosea	Flowering Cherry	5m	4m	Moist, well drained	Hardy	No	Fast	Open, vase shaped	Deciduous	Dark green leaves turn yellow - red in autumn. Pink fragrant flowers.
Pyrus calleryana	Ornamental Pear	5m	5m	Moist, well drained	Clay soils, drought, pollution	No	Fast	Pyramidal to columnar	Deciduous	Clusters of white flowers in spring. Oval, glossy dark green leaves turning brilliant red in autumn.
Pyrus calleryana 'Bradford'	Ornamental Pear	10m	6m	Moist, well drained	Drought, pollution, alkalinity	No	Fast	Pyramidal	Deciduous	A profusion of early spring blossoms. Glossy green leaves turn red - orange in autumn
Pyrus calleryana 'Candelabra'	Ornamental Pear	10m	4m	Moist, well drained	Drought, wind, poor soils	No	Fast	Columnar	Deciduous	Lustrous dark green leaves turn vibrant shades of red and orange through autumn.
Quercus robur 'Fastigiata'	Columnar English Oak	6m	2m	Any soil	Mod drought	No	Mod	Columnar	Deciduous	Dark green leaves.
Sophora microphylla var. fulvida	Kowhai	3m	3m	Fertile, well drained, moist	Mod drought, mod coastal	Flowers attract birds	Mod	Compact spreading	Semideciduous	Fine furry fern-like foliage.
Sophora tetraptera	North Island Kowhai	4m	4m	Moist, well drained	Hardy	Flowers attract birds	Mod	Slender, small tree	Semideciduous	Golden yellow flowers in spring.
Sorbus aria 'Lutescens'	Silver Whitebeam	4m	3m	Moist, well drained	Mod drought, alkalinity	Berries	Slow	Compact pyramidal	Deciduous	Grey green leaves through summer, turning yellow in autumn.
Styrax japonica	Japanese Snowdrop tree	4m	3m	Moist, well drained	Frost, acidity	No	Mod	Spreading fan-like branching structure	Deciduous	Clusters of white mildly fragrant bell shaped flowers in late spring. Golden autumn colour.
Ulmus parvifolia	Chinese Elm	6m	5m	Moist, well drained	Moderatecoastalwindsanddrought	No	Fast	Rounded head	Deciduous	Small dark green leaves turn orange and yellow in autumn.
Ulmus procera 'Louis van Houtte'	Golden Elm	6m	5m	Moist, well drained	Poor soil, frost, wind	No	Fast	Vase shaped, spreading canopy	Deciduous	Double,limegreenblossomsinspringbeforeleaf.Golden-yellowfoliagethroughoutspringandsummer.
Vitex lucens	Puriri	8m	4m	Freedrainingorganicrichsoil	Wind,swampyground,modcoastal	Providesfoodfornativebirds	Mod	Talltreewithbroadspreadingcanopy	Evergreen	Rich green leaves have wavy edges. Pinkish red flowers are produced through most of the year.
Washingtonia robusta	Mexican fan palm	8m	3m	Free draining	High drought	No	Fast	Rounded, open crown	Evergreen	Large, green fan shaped leaves.
Zelkova serrata	Japanese Zelkova	8m	4m	Any soil	Drought, wind	No	Fast	Vase-shaped	Deciduous	Small dark green serrated leaves, bronze pink new leaves in spring.

APPENDIX 3 - UNSUITABLE TREE SCHEDULE

SPECIES	COMMONG NAME	ISSUES
Acacia sp.	Wattles	Structural failure, weedy
Acer pseudoplatanus	Sycamore	Prolific seeding, weedy
Acmena smithii	Lillypilly	Prolific seeding, weedy
Ailanthus altissima	Tree of Heaven	Weedy, invasive root system
Betula pendula	Silver Birch	Leaf and seed fall, allergenic
Camellia spp	Camellia	Visibility,maintenancerequirements
Cedrela sinensis	Toon	Weedy, prolific root suckering
Chamaecyparis sp.	Lawsons Cypress	Restricts visibility, maintenance requirements
Cornus capitata	Strawberry Dogwood	Prolific seeding, weedy
Cupressus sp.	Cypress	Restricts visibility, maintenance requirements
Euonymus japonicus	Japanese Spindle Tree	Prolific seeding, weedy
Gingko biloba (female)	Maidenhair	Mess and odor from fallen fruit
Gleditsia tricanthos	Honey Locust	High maintenance, structural failure
Juglans regia	Walnut	Weedy, mess from fallen nuts
Ligustrum sp.	Privet	Prolific seeding, weedy
Livistona Chinensis	Chinese Fan Palm	Prolific seeding, weedy
Malus sp.	Crab Apples	Mess from fallen fruit, maintenance requirements
Maytenus boaria	Mayten	Weedy, prolific root suckering
Nerium oleander	Oleander	Poisonous, maintenance requirements
Phoenix canariensis	Canary Island Palm	Spiny fronds, prolific seeding, weedy
Pinus sp.	Pines	Structural failure, mess from fallen cones
Populus sp.	Poplars	Structural failure
Robinia pseudoacacia	False Acacia	Thorns, prolific root suckering
Salix sp.	Willow/Tortured Willow	Weedy, structural failure
Toxicodendron succedaneum	Rhus Tree	Toxic sap
Trachycarpus fortunei	Chinese Windmill Palm	Prolific seeding, weedy
Ulmus glabra	Wych Elm	Disease

APPENDIX 4 - PRUNING AND REMOVAL OF PUBLIC TREES PROCEDURE

INTRODUCTION

Gisborne District Council ("Council") looks after over 4,730 street trees and areas of vegetation planted on road reserve within the city and rural townships. There are countless other trees and areas of vegetation in public parks in our district.

Trees and vegetation provide a number of benefits in public spaces including:

- ü contributing to the health and wellbeing of the community;
- ü cooling the streets and the city;
- ü helping prevent water pollution and soil erosion;
- ü providing shade;
- ü providing a habitat for native birds; and
- ü creating attractive spaces.

These benefits are important in an increasingly urbanised world.

However, trees and vegetation are a living resource and their care requires ongoing decisions regarding maintenance, replacement, renewal, and removal to minimise problems with properties, services and infrastructure as the trees and vegetation grow. Council staff who work in these fields include the Rivers and Land Drainage, Commercial Operations and Parks and Community Property teams and are skilled professionals that apply best practice health and safety in all aspects of managing our natural assets. This includes engaging the right specialist services when required.

PROCEDURE SCOPE

This Pruning and Removal of Public Trees Procedure ("the Procedure") applies to all trees and landscape vegetation that are owned and/or managed by Council. For the purposes of this Procedure, these trees and landscape vegetation are referred to as public trees. A public tree includes any tree or landscaped vegetation which has any part of its trunk growing from Council administered land that is accessible to the public. This excludes, for example, the Waipaoa Flood Protection area, which is Council land, but is closed to the Public.

Trees that were intentionally planted for harvest are excluded from the Procedure. The Procedure covers instances where the request to remove public trees is initiated by Council or by any other individual or group within the community.

PURPOSE

The purpose of this Procedure is to:

- ü clarify the circumstances in which public trees may be pruned (outside of best practice maintenance) or removed;
- ü designate a process for making decisions on the removal of public trees and non-standard maintenance; and
- ü identify when public consultation on pruning or removal of public trees will be undertaken.

RELATIONSHIP TO OTHER COUNCIL DOCUMENTS

Reserve Management Plans

Where a reserve management plan has specific policy for the management of public trees on a particular reserve, the management plan will take precedence over this Procedure. All new management plans will be developed in consideration of this Procedure and its intent.

District Plan

Any regulatory provision of the District Plan regarding the maintenance and management of public trees takes precedence over this Procedure. Relevant District Plan provisions will be developed in consideration of this Procedure and its intent.

Iwi Management Plans

Hapu and Iwi Management Plans with references to specific public trees will be taken into consideration in decisions on pruning and removal.

PRUNING PROVISIONS

All decisions on pruning of public trees are taken by the Parks and Community Property Manager or a nominated delegate. All pruning of public trees will be undertaken by Council's appointed arborist and consistent with best practice. Harvesting of plant species for cultural purposes (e.g. harakeke, pingao and toetoe for weaving) is an exception to this requirement as it is recognised as a customary activity for Maori.

To ensure that Council's public trees are managed sustainably, the following requirements regarding pruning shall be complied with:

Standard Maintenance Pruning

Public trees are pruned as part of the Council's ongoing maintenance programme to maintain the health, amenity and ecological values of the public trees. There are other reasons where pruning is necessary, for example, if public

trees are causing health and safety risks by:

- ü obstructing footpaths or roads;
- ü obscuring street lighting;
- ü obstructing vehicle access to public areas;
- ü obscuring traffic signage and visibility at intersections; and/or
- ü growing within clearance requirements around power cables.

Discretionary Pruning

Council will consider other reasons for pruning, e.g. the lack of views, shade and leaf litter provided that the health and value of the public tree is not compromised and the amenity and ecological value the public tree provides is not compromised. Any pruning is to be carried out by a suitably qualified arborist at the direction of the Parks and Community Property Manager or their nominated delegate. The cost of pruning for these reasons will be the responsibility of the person making the request.

REMOVAL PROVISIONS

To ensure that Council's public trees are managed sustainably, public trees will only be removed with the approval of the Parks and Community Property Manager or nominated delegate.

The following requirements regarding removal shall be complied with:

Removal Not Considered

Council will not remove public trees where those specific public trees are clearly identified for retention in a Reserve Management Plan, the District Plan, Regional Pest Management Strategy or other Council planning document that has undergone community consultation.

Standard Removal

Public trees will be removed immediately at Council cost where they are:

- ü identified for removal or replacement in a Reserve Management Plan, the District Plan, Regional Pest Management Strategy or other Council planning document that has undergone community consultation;
- ü presenting an immediate and significant danger to people or property, or are shown to be potentially a severe health or safety risk to neighbouring residents as identified by the International Society of Arboriculture Basic Tree Risk Assessment Form (Appendix 1);
- ü in a diseased, dying, senescent or vandalised condition which cannot be improved by treatment (unless it is deemed they must remain in the landscape for habitat provision or other purposes); and/or
- ü causing uncontrollable structural damage to any street or utility service and remedial work to prevent further damage is impractical and/or greater than the value of the tree as assessed by a suitably qualified Council arborist using best practice tree evaluation methods.

Discretionary Removal

Outside 6.1 and 6.2, requests for removal of public trees may be considered if:

- ü the requested works constitute good arboricultural practice;
- ü if it can be proven that the tree is having a detrimental effect on infrastructure, property, human health and safety;
- ü all viable alternative options have been explored and have failed to remedy the concerns; and/or
- ü any other relevant circumstance.

Decisions on removal of public trees will be based on:

- ü the value of the public tree as determined by a suitably qualified Council arborist using best practice tree evaluation methods;
- ü the level of support for removal from residents living in the immediate vicinity of the public tree; and
- ü the proximity of the public tree from the property of the requesting party and the length of time the party has had the property.

The cost of assessment and/or removal will be the responsibility of the person making the request.

COMMUNITY CONSULTATION

No consultation

There will be no community consultation on public tree removal where:

- ü the public tree is removed under 6.2 above;
- ü the public tree would not be deemed by a suitably qualified Council arborist to have significant value under best practice tree evaluation methods; and
- ü the public tree removal would have no more than a minor impact on the landscape of the area in the medium to long term.

Consultation

Where a public tree proposed for removal is identified as having significant value, as determined by a suitably qualified Council arborist using best practice tree evaluation methods, Council will consult the general public about options for dealing with the public tree. The extent of notification and consultation will be proportionate to the value of the public tree as determined by the Parks and Community Property Manager or their nominated delegate.

Where there is some evidence that a public tree proposed for removal may have significant value to

BASIC TREE RISK ASSESSMENT FORM

Client _____ Date _____ Time _____
Address/Tree location _____ Tree no. _____ Sheet _____ of _____
Tree species _____ dbh _____ Height _____ Crown spread dia. _____
Assessor(s) _____ Time frame _____ Tools used _____

Target Assessment

Target number	Target description	Target zone: Target within drip line	Target zone: Target within 1 x Ht.	Target zone: Target within 1.5 x Ht.	Occupancy rate (1–rare, 2 – occasional, 3 – frequent, 4 – constant)	Practical to move target?	Restriction practical?
1							
2							
3							
4							

Site Factors

History of failures _____ **Topography** Flat ☐ Slope ☐ _____% **Aspect** _____
Site changes None ☐ Grade change ☐ Site clearing ☐ Changed soil hydrology ☐ Root cuts ☐ Describe _____
Soil conditions Limited volume ☐ Saturated ☐ Shallow ☐ Compacted ☐ Pavement over roots ☐ _____% Describe _____
Prevailing wind direction _____ **Common weather** Strong winds ☐ Ice ☐ Snow ☐ Heavy rain ☐ Describe _____

Tree Health and Species Profile

Vigor Low ☐ Normal ☐ High ☐ **Foliage** None (seasonal) ☐ None (dead) ☐ Normal _____% Chlorotic _____% Necrotic _____%
Pests _____ **Abiotic** _____
Species failure profile Branches ☐ Trunk ☐ Roots ☐ Describe _____

Load Factors

Wind exposure Protected ☐ Partial ☐ Full ☐ Wind funneling ☐ _____ **Relative crown size** Small ☐ Medium ☐ Large ☐
Crown density Sparse ☐ Normal ☐ Dense ☐ **Interior branches** Few ☐ Normal ☐ Dense ☐ **Vines/Mistletoe/Moss** ☐ _____
Recent or planned change in load factors _____

Tree Defects and Conditions Affecting the Likelihood of Failure

— Crown and Branches —

Unbalanced crown ☐ LCR _____%
Dead twigs/branches ☐ ____% overall Max. dia. _____
Broken/Hangers Number _____ Max. dia. _____
Over-extended branches ☐
Pruning history
Crown cleaned ☐ Thinned ☐ Raised ☐
Reduced ☐ Topped ☐ Lion-tailed ☐
Flush cuts ☐ Other _____

Cracks ☐ _____ Lightning damage ☐
Codominant ☐ _____ Included bark ☐
Weak attachments ☐ _____ Cavity/Nest hole ____% circ.
Previous branch failures ☐ _____ Similar branches present ☐
Dead/Missing bark ☐ Cankers/Galls/Burls ☐ Sapwood damage/decay ☐
Conks ☐ Heartwood decay ☐ _____
Response growth _____

Main concern(s) _____

Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ☐ _____
Likelihood of failure Improbable ☐ Possible ☐ Probable ☐ Imminent ☐ _____

— Trunk —

Dead/Missing bark ☐ Abnormal bark texture/color ☐
Codominant stems ☐ Included bark ☐ Cracks ☐
Sapwood damage/decay ☐ Cankers/Galls/Burls ☐ Sap ooze ☐
Lightning damage ☐ Heartwood decay ☐ Conks/Mushrooms ☐
Cavity/Nest hole _____% circ. Depth _____ Poor taper ☐
Lean _____° Corrected? _____

Response growth _____
Main concern(s) _____

Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ☐
Likelihood of failure
Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

— Roots and Root Collar —

Collar buried/Not visible ☐ Depth _____ Stem girdling ☐
Dead ☐ Decay ☐ Conks/Mushrooms ☐
Ooze ☐ Cavity ☐ _____% circ.
Cracks ☐ Cut/Damaged roots ☐ Distance from trunk _____
Root plate lifting ☐ Soil weakness ☐

Response growth _____
Main concern(s) _____

Load on defect N/A ☐ Minor ☐ Moderate ☐ Significant ☐
Likelihood of failure
Improbable ☐ Possible ☐ Probable ☐ Imminent ☐

Risk Categorization

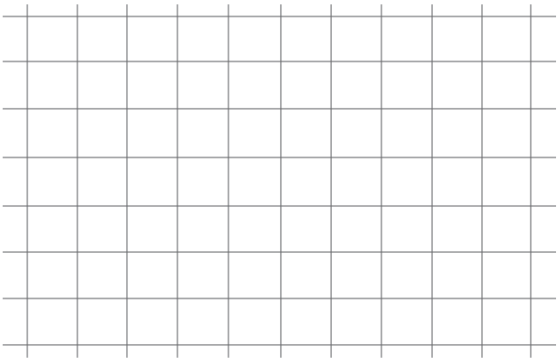
Condition number	Tree part	Conditions of concern	Part size	Fall distance	Target number	Target protection	Likelihood: Failure: Improbable	Failure: Possible	Failure: Probable	Failure: Imminent	Impact: Very low	Impact: Low	Impact: Medium	Impact: High	Failure & Impact (from Matrix 1): Unlikely	Somewhat	Likely	Very likely	Consequences: Negligible	Minor	Significant	Severe	Risk rating of part (from Matrix 2)
1							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
2							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
3							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
4							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	
							○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	

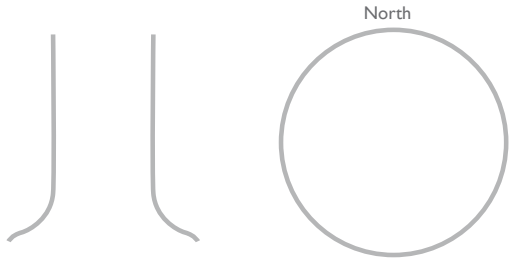
Matrix 1. Likelihood matrix.

Likelihood of Failure	Likelihood of Impacting Target			
	Very low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2. Risk rating matrix.

Likelihood of Failure & Impact	Consequences of Failure			
	Negligible	Minor	Significant	Severe
Very likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low





Notes, explanations, descriptions _____

_____

_____

_____

_____

Mitigation options _____ **Residual risk** _____

_____ **Residual risk** _____

_____ **Residual risk** _____

_____ **Residual risk** _____

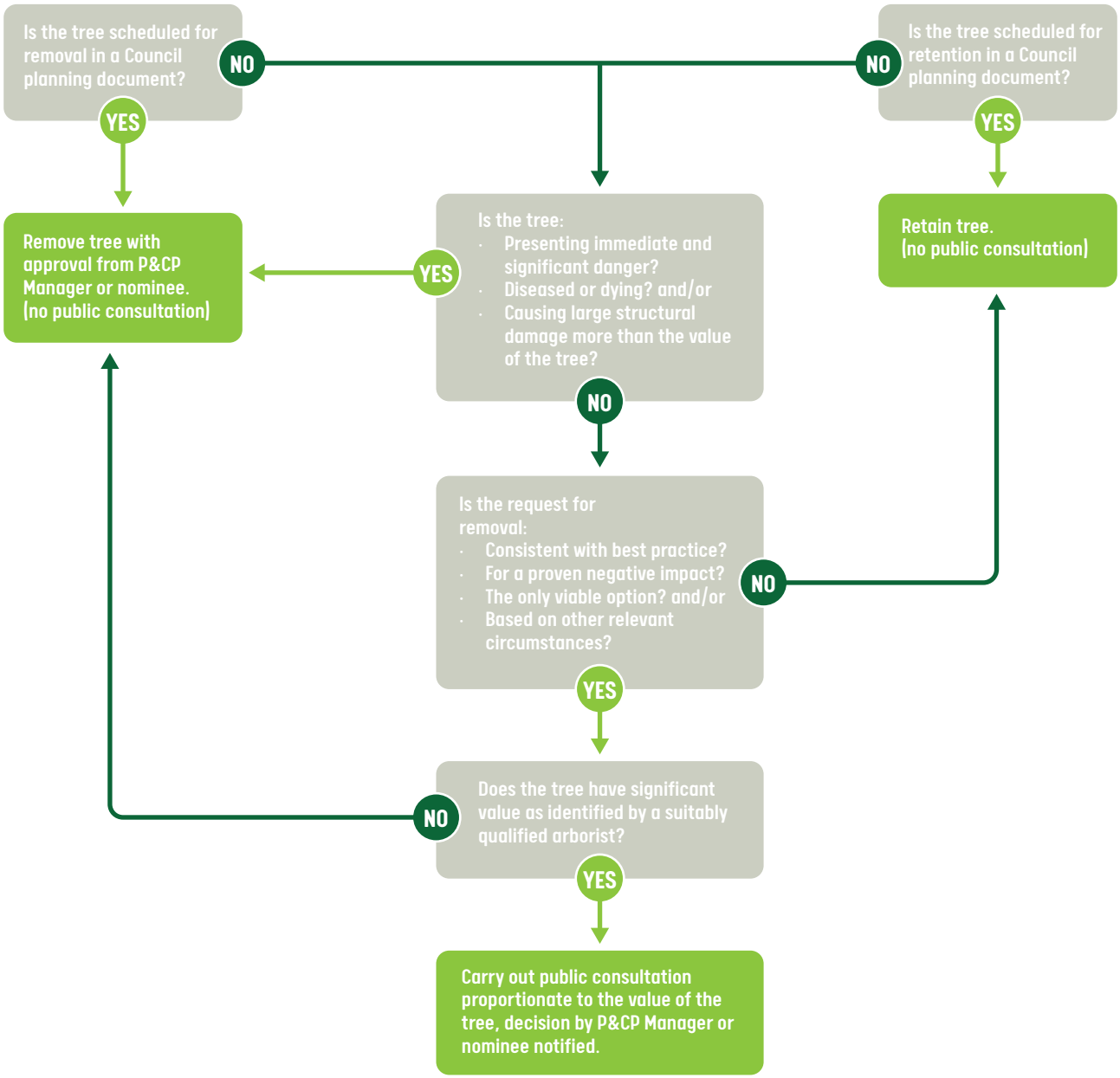
Overall tree risk rating Low ☐ Moderate ☐ High ☐ Extreme ☐ **Work priority** 1 ☐ 2 ☐ 3 ☐ 4 ☐

Overall residual risk Low ☐ Moderate ☐ High ☐ Extreme ☐ **Recommended inspection interval** _____

Data ☐Final ☐Preliminary **Advanced assessment needed** ☐No ☐Yes-Type/Reason _____

Inspection limitations ☐None ☐Visibility ☐Access ☐Vines ☐Root collar buried Describe _____

DECISION MAKING FLOW DIAGRAM



APPENDIX 5 - POLLEN CALENDAR

TREES	SPRING			SUMMER			AUTUMN			WINTER		
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Jul	Aug
Wattle (Acacia)										■	■	■
Macrocarpa (Cupressus)	■	■	■	■	■	■					■	■
Pinus radiata	■	■									■	■
Other Pinus species		■	■	■								
Hazelnut (Corylus)											■	■
Gorse (Ulex)	■	■	■				■	■	■	■	■	■
Willow (Salix)	■	■	■									
Alder (Alnus)												■
Poplar (Populus)												■
Oak (Quercus)		■	■									
Native Beech (Nothofagus)		■	■	■								
Coprosma species		■	■	■								
Elm (Ulmus)	■	■	■								■	■
Maples, Sycamore (Acer)		■	■									
Birch (Betula)		■	■									
Plane (Platanus)		■	■									
Walnut (Juglans)			■									
Mulberry (Morus)			■									
Native Podocarps, eg. Rimu			■	■	■							
Eucalyptus/Manuka			■	■	■							
Native Milkwoods			■	■	■							
Pohutukawa/Rata (Metrosideros)				■	■	■	■					
WEEDS												
Plantain (Plantago			■	■	■	■	■					
Privet (Ligustrum)			■	■	■	■	■	■				
Nettles (Urtica)		■	■	■	■							
Dock, Sorrel (Rumex)			■	■	■	■	■					
Chenopod Weeds, eg. fathen				■	■	■	■					
GRASSES												
Cocksfoot (Dactylis)			■	■	■							
Yorkshire Fog (Holcus)			■	■	■							
Ryegrass (Lolium)			■	■	■	■						
Tall Fescue (Festuca)			■	■	■	■						
Prairie Grass (Bromus)			■	■	■							
Dogstail (Cynosurus)				■	■	■						
Crested Dogstail (Cynosurus)				■	■	■						
Browntop (Agrostus)				■	■	■						
Timothy (Phleum)					■	■	■					
Meadow Foxtail (Alopecurus)	■	■	■	■	■							■
Sweet Vernal (Anthoxanium)			■	■	■							
OTHER												
Fungal Spores	■	■	■	■	■	■	■	■	■	■	■	■

Te Kaunihera o Te Tairāwhiti
GISBORNE
DISTRICT COUNCIL