

Māngere-Ōtāhuhu Urban Ngahere

Action Plan 2021





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Introduction



Image 1: Planting in a commercial carpark at the Auckland Airport Shopping Centre

The Māngere-Ōtāhuhu Urban Ngahere Action Plan is a positive step towards seeking to recognise and replenish Tāmaki Makaurau’s urban ngahere. It is the result of determined advocacy of the Māngere-Ōtāhuhu Local Board, community groups and stakeholders.

We are proud to produce a localised urban ngahere action plan which is intended to deliver on Auckland Council’s *Urban Ngahere (Forest) Strategy*¹. We are also committed to enhancing the urban ngahere and biodiversity within our local board area.

We have developed the Māngere-Ōtāhuhu Local Board Ngahere Action Plan to connect our parks and open spaces. We will also continue to explore planting opportunities through these corridors to increase biodiversity and will seek to encourage important community initiatives; such as native urban ngahere regeneration, pollinator paths and the planting of fruiting species.

The Māngere-Ōtāhuhu Local Board supported the development of a canopy analysis report to address the pressures on the urban ngahere and loss of tree cover, and to meet the targets set in *Auckland’s Urban Ngahere Strategy*¹.

This strategy has a stated target to increase Tāmaki Makaurau’s tree canopy cover from a regional estimate of 18 per cent (as assessed in 2013) to 30 per cent by 2050. The strategy also states an aim of having at least 15 per cent tree canopy cover in every local board area within this timeframe. Given the above, it is clear that a coordinated approach to achieving the targets for both local board areas and region-wide is necessary.

With the extent of the urban ngahere in the Māngere-Ōtāhuhu Local Board area having now been assessed, we understand the need for a large number of planting projects to be committed to in the short and medium term. This will ensure that a flourishing urban ngahere can continue to develop into the future. Extensive national and international urban ngahere studies are in agreement about the benefits that the “lungs of a city” can bring to its inhabitants.



There are numerous benefits associated with having, developing and maintaining a flourishing urban ngahere.

The *Auckland's Urban Forest Canopy Cover: State and Change (2013 – 2016/2018)* report states that the Māngere-Ōtāhuhu Local Board area has 31 per cent canopy cover²; 16 per cent above the desired minimum local board target detailed in *Auckland's Urban Ngahere (Forest) Strategy*¹ – please refer to the Māngere-Ōtāhuhu Local Board LiDAR urban tree map below.

With a significant percentage of the local board area's 'suburban' urban ngahere assessed as growing on private land (which is subject to little, if any, tree protection legislation, by-laws or policies), it is reasonable to assume that, since the data was last captured and with no coordinated tree planting plan in place, urban ngahere canopy coverage within the local board area will have declined.

There are many different influences that can impact on our local natural environment and commitment to a well-considered tree planting action plan is required. For the betterment of our collective urban ngahere, the local board is pleased to make such a commitment.

A coordinated action plan, along with an effective long-term maintenance regime and well considered tree protection legislation, by-laws or policies will go a long way towards protecting, enhancing and maintaining a vibrant and essential urban ngahere within the local board area.



Map 1: Local Board urban tree map - canopy cover by percentage based on 2013 LiDAR

Ngā painga o te ngahere ā-tāone o Tāmaki Makaurau

Benefits of Auckland's urban ngahere





Urban Ngahere Strategy

Objectives



Knowing
Tāmaki Makaurau needs to know the status of its urban ngahere, the extent, number, and distribution of trees as well as their size, health and condition. Understanding the social, environmental, economic, and cultural value of Tāmaki Makaurau's ngahere and quantifying the benefits it provides will support better informed, strategic decision making about its management and growth.



Growing
Tāmaki Makaurau needs to grow its urban ngahere to increase and amplify the benefits trees provide and to address the inequity of where the ngahere is distributed across the region. By expanding and enriching its urban ngahere, Tāmaki Makaurau will maximise the social, environmental, economic and cultural benefits that trees, shrubs and other vegetation bring to an urban environment.



Protecting
Protecting existing urban ngahere is crucial to safeguarding the added values and benefits larger mature trees provide. Caring for saplings is critical for ensuring older trees are replenished before the end of their life, ensures our urban ngahere grows over time and publicly-funded planting is successful.

Mechanisms



Engage
Engage with partners and stakeholders – with mana whenua, residents, private landowners, community organisations, network utility operators and the private sector to ensure the urban ngahere is well managed, its benefits are well recognised and that growing and protecting the urban ngahere on public and private land is widely supported.



Manage
Manage the city's urban ngahere on public land through coordinated planning, strategic planting and smart, innovative urban design while facilitating best practice standards for work on and around trees through vegetation maintenance contracts.

The Whats, The Whys & The Whens

What is an urban ngahere action plan?

Why is an urban ngahere action plan needed?

When does an urban ngahere action plan get implemented?

This section provides details and answers to the 'whats', the 'whys' and the 'whens' of an effective urban ngahere action plan.

The What

This urban ngahere action plan:

- Is a road map that spells out what steps are required in order to achieve the stated goals of the Māngere-Ōtāhuhu Local Board as they relate to the urban ngahere within the local board area boundaries.
- Details objectives and actions that support the local board's urban ngahere protection, development and maintenance goals.

The Why

This urban ngahere action plan:

- Is needed as currently there is no coherent tree planting plan to support the promotion, protection and enhancement of the urban ngahere within the boundaries of the local board area.
- Is required as a recent high level assessment has identified tree canopy cover loss throughout the local board area.
- Is necessary as a high level assessment of the current tree stock within the local board boundaries revealed vulnerabilities in the age spread, condition, species range and longevity of the existing tree canopy cover.

The When

This urban ngahere action plan:

- Outlines the requirements necessary to undertake to develop a ten year tree planting plan.
- Provides timeframes per key actions that support the goals and objectives of the Māngere-Ōtāhuhu Urban Ngahere Action Plan.

Tree Planting Principles



With a significant amount of coastline, the presence of the motorway, the Domestic and International Airports and the suburbs containing intensive residential lots; a range of planting principles are required in order to establish new plantings that contribute long term to the board's overall urban ngahere canopy cover.

Examples of relevant tree planting principles are: planting the right tree in the right place; having a preference for native species; ensuring urban ngahere diversity; creating ecological corridors and connections; and seeking to manage the whole lifecycle of urban trees.

Tree planting principles are to be developed in a manner that address a range of issues (some being specific to the Māngere-Ōtāhuhu Local Board area) such as:

- Salt tolerance
- Soil type
- Structural form
- Plant large where we can
- Heritage context
- Climate change species susceptibility/effects resilience
- Availability of space above and below ground
- Shading
- Leaf drop
- Future sight and view lines
- Visual amenity
- Infrastructure conflict
- Private property planting opportunities/assistance
- Pest and disease resistance
- Maintenance requirements
- Increasing biodiversity
- Bird and wildlife corridor creation/enhancement/linkages
- Have a well-proportioned mix of saplings, semi mature and mature trees across the area
- A species composition of 70 per cent native species and 30 per cent exotic species. The exotic species breakdown is as follows; 10 per cent fruit-producing species, 10 per cent species with functional uses (i.e. carbon

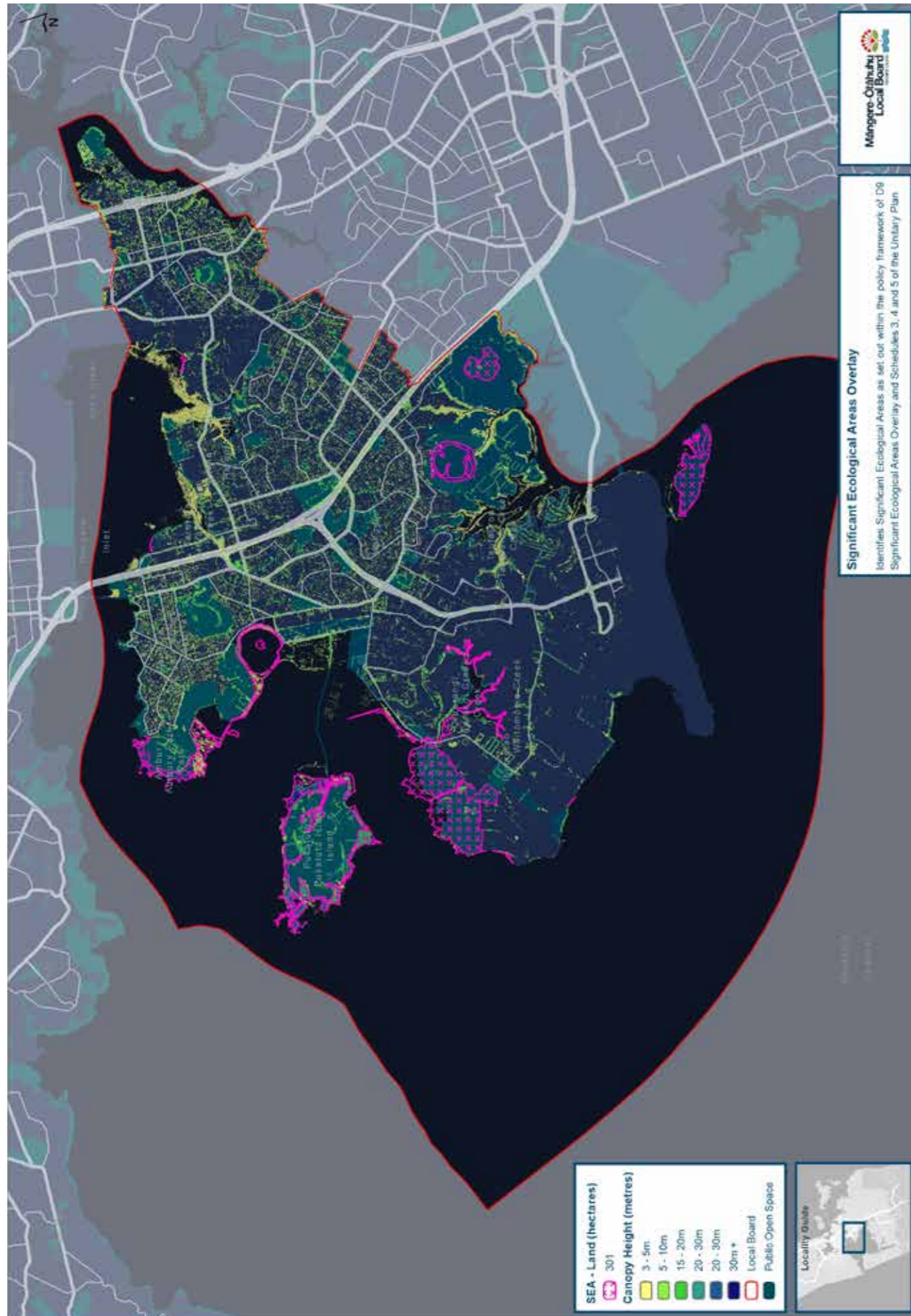
sequesters, ecosystem services) and 10 per cent exotic species with cultural significance.

When selecting species of trees, the tree planting principles are to be supported by the Auckland Council *Indigenous Terrestrial and Wetland Ecosystems of Auckland* (published 2017) report³. This document identifies species that are part of the various terrestrial and wetland ecosystems (and their variants) that have been located through Tāmaki Makaurau boundaries.

It is important to consider the extension, and/or creation of pollinator paths to help create corridors for birds, and insects to move along. Selecting tree varieties that provide flower sources for birds and insects are important to help build pathways for movement and to build the extent of habitat to support increased biodiversity at a local street and park scale.

Consideration is to be given to large trees that provide a diverse food source and habitat for native birds, as well as the maintenance of tall tree stumps that could provide nesting opportunities for birds.

Where appropriate, adopting the strategic principle of 'native first' when seeking to plant with appropriate species in ecologically relevant locations will assist in the enhancement of biological diversity, as well as aiding in ecological restoration.



Map 2: SEA and urban forest cover (based on 2013 LiDAR)



The effectiveness of individual species to remove carbon dioxide from the atmosphere and store it as carbon as part of their overall biomass over their lifetime is considered to be an important tree planting principle.

Planting platforms and opportunities can be found in the body of this report, for example:

- High level 'Suburb By Suburb Planting Opportunities'
- Survey Map; SEA and urban ngahere cover (based on the 2013 LiDAR)

When it comes to identifying planting locations and options, there are a wide range of opportunities to consider:

- Auckland Council sports fields, parks and reserves (i.e. Ambury Regional Park; a large expanse of land that is sparse of trees)
- Auckland Transport land (i.e. grass berms, footpath tree pits, kerb build-outs, car parking spaces, new street gardens)
- Public cemeteries (note that some countries are now using trees as 'headstones')
- Government land (i.e. schools, hospitals, fallow sites)
- NZTA land
- Large planters along cycle lanes
- Future open space programmes and projects

- Community Facilities renewal program (during assessment of seating areas, playgrounds and rest areas) annually records the opportunity to plant new trees as part of the renewal upgrade to existing assets
- Green walls (i.e. amenity plantings that can be installed in planters/on fencing/on wires attached to sides of public/commercial buildings)
- Privately owned land (as planting in public spaces alone will not be able to achieve the desired canopy cover change)
- Future developments across the Auckland Airport facility presents opportunities for new plantings
- Work with the Māngere-Ōtāhuhu Local Board and a local volunteer group to arrange a community planting day in an annually nominated park

Where possible, consideration of planting large grade specimens helps ensure we get 'larger trees faster' so as to give rise to the urban ngahere benefits sooner.

Planting with a variety of species is particularly important when addressing resilience issues such as pest and disease, and climate change species vulnerabilities. A small species range could get decimated by a pest and/or disease infestation (i.e. Dutch Elm Disease and Kauri Dieback), just

as a cooler, dryer climate-loving species may suffer in the predicted warmer and more moist seasons that Tāmaki Makaurau is likely to face in the future.

We will work with the community, Auckland Council, Ministry for Primary Industries and iwi to isolate incidents, prevent further spread of pest trees, educate and plant a diversity of tree species that are resilient to current disease to ensure the survival of our urban ngahere.

Of equal importance is ensuring that we address 'Seed to Succession' issues, with a focus on 'end of useful life' timing (as Kew Gardens in the UK found out in the 1987 storm, when they lost a large number of over-mature specimens and did not have sufficient middle age trees to carry them through), as well as providing bird and wildlife corridor creation and enhancement, along with linking Significant Ecological Areas (SEAs).

A combination of the above will ensure that, by introducing and maintaining a wide range of tree species, sizes and ages, a future healthy, vibrant and benefit-producing urban ngahere will be present for many years to come.

As stated in *Auckland's Urban Ngahere (Forest) Strategy*¹ – 'Together, growing Tāmaki Makaurau's urban ngahere for a flourishing future.'

Partners

The results of this urban ngahere action plan will benefit not only the residents of the Māngere-Ōtāhuhu Local Board area but also the Tāmaki Makaurau's community as a whole. Given this fact and the very relatable nature of planting a tree, creation of a viable and sustainable network of partners who can provide support in a myriad of ways is important; so much so that it is listed as one of the goals of this plan.

Examples of those entities who could partner in the deliverables of this plan are:

- ME Family Services
- Live Lightly
- Papatūānuku Kōkiri Marae
- Makaurau Marae
- Other community volunteer groups
- Local school/community groups to operate eco-sourced nurseries
- Private land owners (possible for Auckland Council to fund the planting of trees on private properties)
- Commercial land owners (possible to install climbing green walls on/up sides of privately-owned buildings where trees can't be established)
- Auckland Council's Community Facilities department (by engaging with and supporting the renewals programme, create new planting locations by undertaking the removal of noxious trees/plants)
- Auckland Transport (engage with the maintenance programme i.e. retire hard stands to create new planting spaces)
- Healthy Waters (engage with the revegetation program, assist in the creation of educational rain gardens)
- Network Utility Operators (engage regarding planting location restrictions around network assets, support Vector's Overhead Improvement Program)
- Work with Panuku and Auckland Unlimited to develop and incorporate new planting opportunities within their new development and facility maintenance projects
- National environmental entities (Forest and Bird, Project Crimson, Trees That Count)
- Nursery Association (gain support by way of quality production donation/ price reduction)
- Government departments (opportunity to plant large trees for shading benefits in schools and hospitals, support from Department of Corrections to grow seedlings, engage with Kainga Ora with a focus to mitigate the effects of vegetation losses as a results of their developments, etc.)
- NZTA (discuss species used in motorway plantings and their future long term protection and explore planting opportunities on surplus land)



Goals

Knowing, Growing, Protecting.

The goals of the Māngere-Ōtāhuhu Local Board in relation to the assessment, protection, management and development of the urban ngahere within the local board area are as follows:

- To create sustainable urban ngahere within the local board area that meets the needs of our community and surroundings
- To achieve 5 per cent increase of tree canopy cover within the local board area boundaries by 2030
- To achieve 30 per cent tree canopy cover within the local board area boundaries by 2050
- To further enhance and amplify efforts to establish corridors of vegetation to link small and large open space areas
- To increase public awareness around the need to promote, protect and enhance the urban ngahere within the local board area
- To create a network of partners to support the development and maintenance of the urban ngahere within the local board area



Objectives

Knowing, Growing, Protecting.

In order to achieve the Māngere-Ōtāhuhu Local Board's goals in relation to the assessment, protection, management and development of the urban ngahere within the local board area, the following objectives are required to be undertaken:

- Research and compile a list of planting opportunities within the road reserve, parks and reserves, and commercial environments within the Māngere-Ōtāhuhu Local Board area
- Develop a suitable species list of small, medium and large trees to be used in the identified list of planting opportunities
- Develop an urban ngahere tree planting promotional program that engages stakeholders and partners
- Review and set up an accurate tracking system of Auckland Council's tree planting and maintenance practices
- Auckland Council Call Centre can be contacted on 09 301 0101 or via the council website www.aucklandcouncil.govt.nz. They can log maintenance requests to attend to newly planted trees, to review a site for a replacement tree planting, and to request that a new tree is planted
- Develop a 10 Year Tree Planting Plan (supported by a suitable funding framework)
- Engage with tree nursery suppliers and develop a nursery 'Growing Plan' that will service the 10 Year Tree Planting Plan
- Provide a report to the local board that outlines the financial requirements to support the funding commitments of the 10 Year Tree Planting Plan
- Continue discussions with Auckland Council regarding current levels of tree protection rules and their effectiveness as they relate to the protection and enhancement of the urban ngahere
- Council's Governing Body has commenced discussions with Central Government to highlight the need for change to the Resource Management Act to enable new or better rules to protect large trees of importance in Tāmaki Makaurau
- Work with Auckland Council and the Māngere-Ōtāhuhu Local Board to collaboratively explore the development of an advisory service for tree care to help provide advice to customers on tree care and maintenance. Promote the value of professional tree care and work with national organisation to develop advisory service



By implementing these objectives, and in line with the stated goals, this urban ngahere action plan intends to ensure that:

- We engage with all stakeholders, partners, schools & local community groups so as to seek support regarding the planting & maintenance of future urban forest plantings
- The right trees will be planted in the right places
- The tree supply and planting works will be cost effective
- We arrange annual tree planting events
- We explore the options for setting up a tree fund to help with maintenance of large notable trees in the local board area



Action Plans



Introduction

Tree planting 'Action Plans' will be developed to deliver on the planting aspirations of the Māngere-Ōtāhuhu Local Board. This will involve site-specific assessments and consultation about planting opportunities that exist within the board's boundaries. New tree planting will assist with the local board's efforts on adaptation and mitigation measures to help respond to climate change by positively leveraging efforts to "become a low carbon community" and implement the Action Plan.

To undertake the required activities that support the delivery of the Action Plans, the following matters will be considered and implemented:

Action

- Undertake a detailed assessment of planting opportunities within the road reserves, parks and reserves, and commercial environments to continue the greening of the Māngere-Ōtāhuhu Local Board area
- In accordance with the principles outlined in *Auckland's Urban Ngahere (Forest) Strategy*¹, research and compile a 'suitable species list' and 'tree planting principles' that will apply to all identified planting opportunities
- Develop a detailed 'Planting Opportunities List' that will help to deliver the goal of providing 30 per cent of tree canopy cover within the Māngere-Ōtāhuhu Local Board area by 2050
- Develop a 1 - 3, a 4 - 6 and a 7 - 10 Year Funding Framework to deliver on the 'Planting Opportunities List'
- Record metrics that reflect estimated tree canopy cover percentage increase across the local board area post completion of all identified planting opportunities, as well as the estimated growth of existing trees up to 2050

Education

- Research, engage and enrol tree nursery suppliers regarding tree stock production standards, current stock availability and species selection for future plantings
- Undertake an assessment regarding the necessity for effective tree protection to support the long term protection, management and development of the urban ngahere
- Develop a promotional program that engages with identified stakeholders, partners and the wider public

Planting

- Compile indicative tree supply and planting pricing (that includes 3 years post-planting maintenance, metrics assessments and reporting) to deliver on the 'Planting Opportunities List'
- Consider planting opportunities that include tree species that provide flowers, nectar and fruit to help support biodiversity
- Discuss and confirm best practice tree planting and ongoing maintenance methods with Auckland Council's Community Facilities department

Community Support

- Confirm with the Māngere-Ōtāhuhu Local Board a funding commitment for the 10 Year Tree Planting Plan and the 10 Year Funding Framework
- Immediately post adoption of the Action Plan, implement Year 1 of the 10 Year Tree Planting Plan
- Encourage and support volunteers in the community to be enabled to support the growth of the urban ngahere, working with contractors and local volunteer groups to deliver outcomes, e.g. through community grants
- Investigate opportunity to establish an annual resident scheme which would allow residents to nominate heritage and notable trees in the local board area
- Investigate opportunity to establish a contestable fund that would support private property owners to maintain large heritage and notable trees in their private property, enhancing bio-diversity in the local board area
- Investigate opportunities to establish an initiative that would provide the local board with a platform to acknowledge individuals for their contributions to making reserves and private properties pest plant free



Action Plan Tree Planting Flowchart

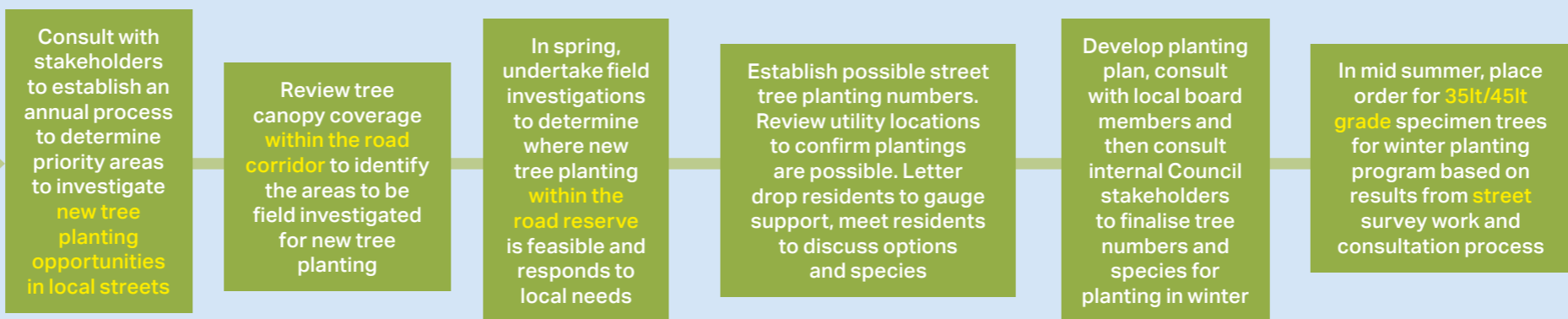
Local board agrees to fund Growing Programme

Annual Growing Implementation & Assessment Programme

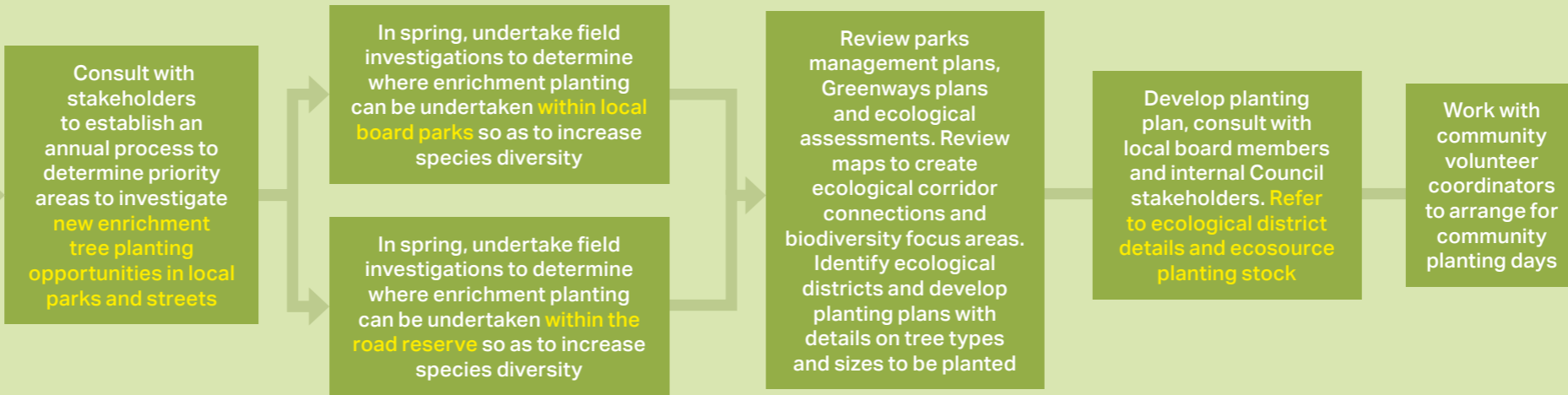
Parks



Road Reserve



Enrichment Planting



Undertake late autumn visit to nurseries to review planting stock to ensure consistent size and quality.

Audit work quality and confirm planting has taken place in the correct locations in accordance with specifications

Undertake review of winter planting program and develop annual report to update local board on areas planted, tree numbers and species established

Complete ongoing annual reviews of the Growing Program to establish total species/numbers planted and determine success rate percentages. Provide progress reporting to local board on total plantings. Collate data to provide cumulative numerical/species type success rates

References



Image 2: Trees near Auckland International and Domestic Airport

1. Auckland Council Research and Evaluation Unit. (2019, March). *Auckland's Urban Ngahere (Forest) Strategy*. <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/topic-based-plansstrategies/environmental-plans-strategies/documents/urban-ngahere-forest-strategy.pdf>
2. Golubiewski, N., Lawrence, G., Zhao, J., & Bishop, C. (2020). *Auckland's Urban Forest Canopy Cover: State and Change (2013-2016/2018)*. <https://www.knowledgeauckland.org.nz/publications/auckland-s-urban-forest-canopy-cover-state-and-change-2013-20162018/>
3. Singers, N. J., Osborne, B., Lovegrove, T., Jamieson, A., Boow, J., Sawyer, J. W. D., & Webb, C. (2017). *Indigenous terrestrial and wetland ecosystems of Auckland*. Auckland Council, Te Kaunihera o Tāmaki Makaurau.

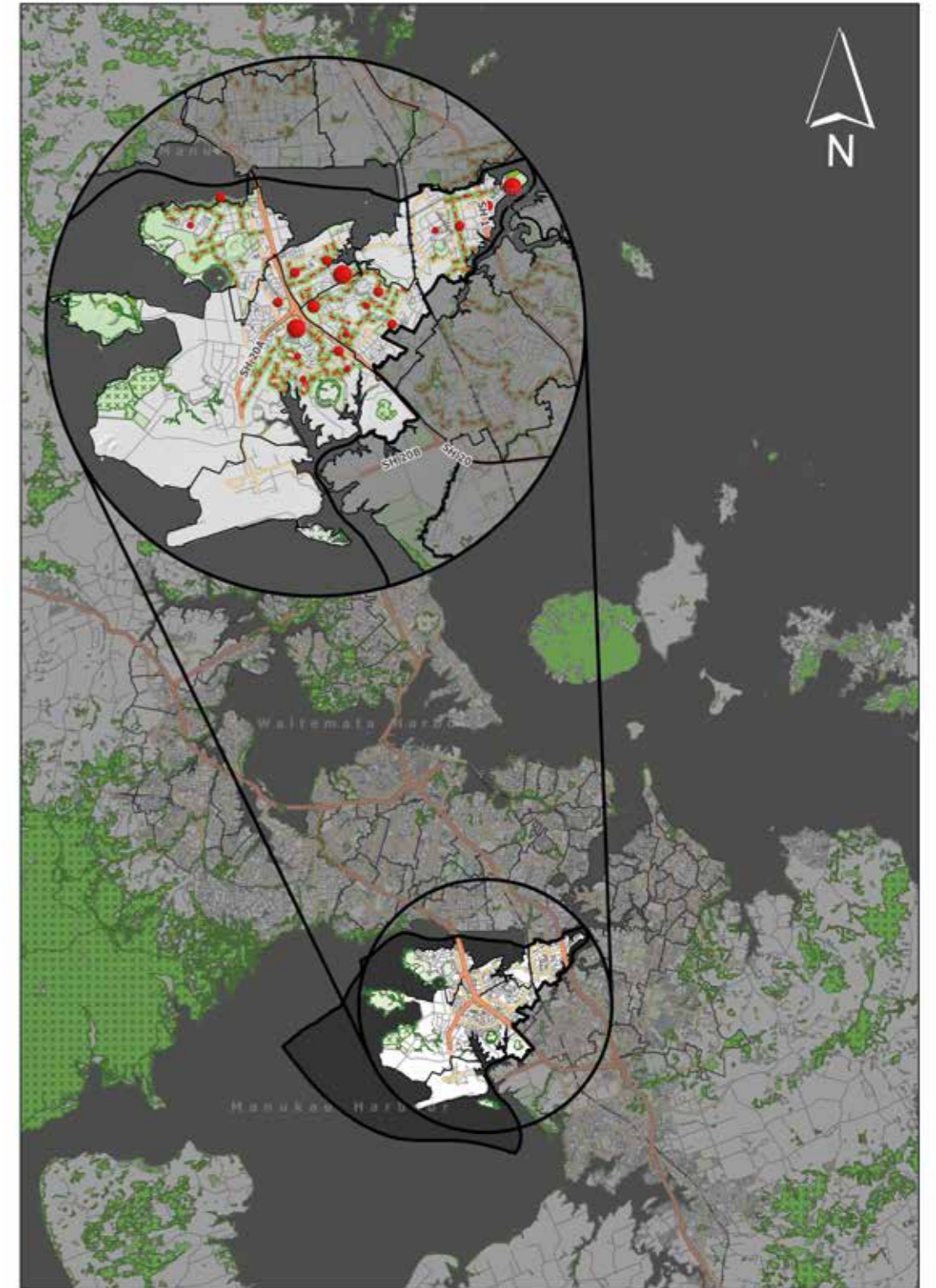
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Appendices

Potential Tree Planting Opportunities



Map 3: Māngere-Ōtāhuhu Local Board area

Surveying and Data Collection

As outlined in the Action Plan Tree Planting Flowchart, further detailed site investigations are required to be undertaken so as to confirm suitability of potential planting locations. These site investigations involve a variety of issues i.e. consultation with all relevant stakeholders, presence of underground services, visual amenity issues, plant species selection, future growth, form and site suitability.

As part of the development of the Action Plan's structure of how to investigate potential tree planting opportunities, in the initial trial phase relating to site investigations, it was decided to prioritise ground-truthing surveys (information provided by direct observation) via a clear purpose to better utilise the available time and resources. A spreadsheet of Council parks and reserves which contained variable site characteristics (including land use and tree cover) was provided to assist in developing a list of sites in which to undertake the initial investigations. As specified in the Local Board Plan, parks and reserves were prioritised for potential tree planting investigations and were selected using the following criteria;

1. Is there a playground within the park or reserve?
2. Is the park or reserve's overall tree cover less than 10 per cent?
3. Is there shade from existing trees casting over the playground?

Presence of playgrounds was selected as the main priority target in the initial survey, as increased planting and tree cover in these areas would likely provide measurable social and environmental benefits to local communities enabling connections to nature. As the first priority, parks and reserves were assessed on the basis of the presence of a playground; these locations were then filtered further by percentage of tree cover, with parks and reserves containing 0-15 per cent canopy cover selected next. A desktop review using aerial imagery, site observations and comments detailed in current, relevant Council data was further assessed to determine whether trees within the selected parks and reserves shaded playgrounds, with a corresponding list of these sites then compiled for each local board.

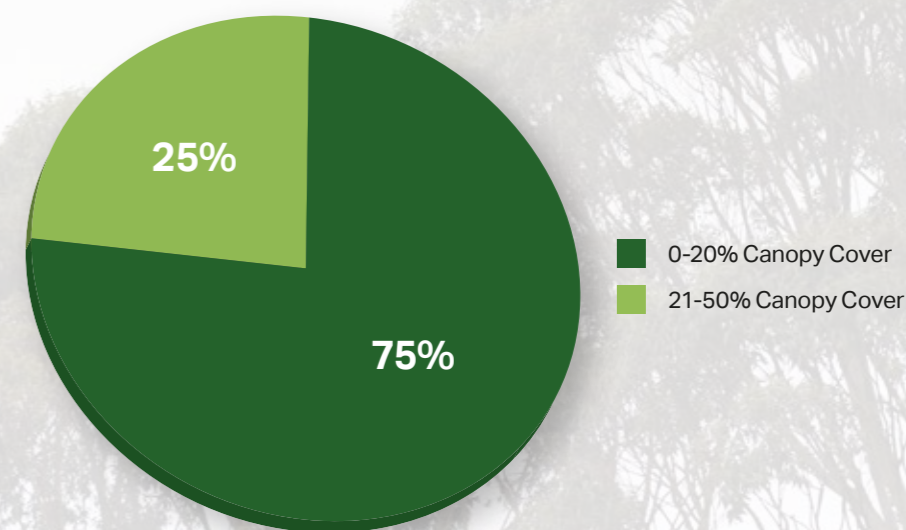
Ground-truthing was used to determine the extent of tree cover and whether new plantings had been provided that were not visible on aerial imagery. Surveys were expanded once on site to determine if more trees could be planted within the parks and reserves outside of the immediate vicinity of the playground footprint to include open areas, park edges, etc. Site observations during ground-truthing identified the need for more trees, especially on hot sunny days when park users' crowded within the shaded areas provided by tree canopy cover. Further reviews, investigations and ground-truthing would be required

to identify additional parks and reserves that have no playgrounds and low canopy cover.

Road reserve selection and street tree planting followed a separate assessment. The street tree ground-truthing followed the parks and reserves site surveys; streets were selected based on connectivity to parks and reserves previously identified, as well as connectivity to ecological areas such as coastal environments and stands of native vegetation or SEAs. A further desktop assessment based on 2013 LiDAR data for canopy cover identified streets where canopy cover was low and streets where berm planting was feasible from an aerial imagery perspective. Connectivity was the priority for streets; ground-truthing was used to identify streets where canopy cover was low to non-existent and therefore required berm planting, and, when canopy cover was present, whether infill planting was possible.

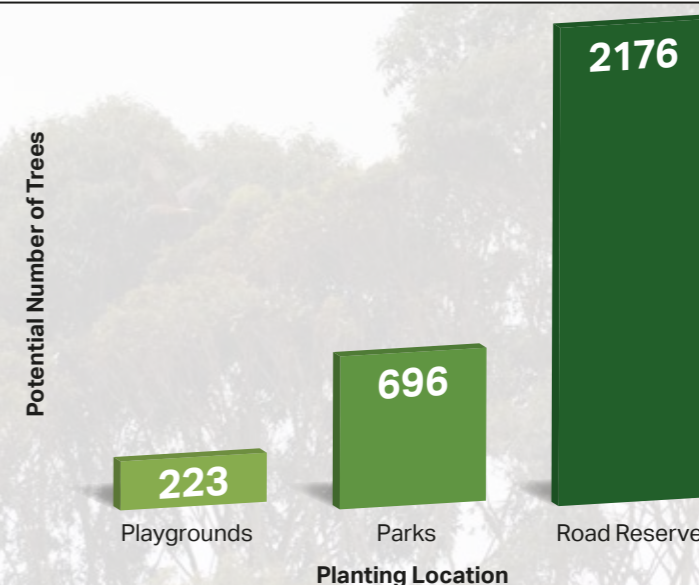
Canopy Cover of all Parks with Playgrounds

Graph 1: Percentage canopy cover of Māngere-Ōtāhuhu playgrounds



Māngere-Ōtāhuhu Planting Opportunities

Graph 2: Māngere-Ōtāhuhu planting opportunities for playgrounds, parks and road reserves



a) On-Site Data Capture Survey Form

My Survey

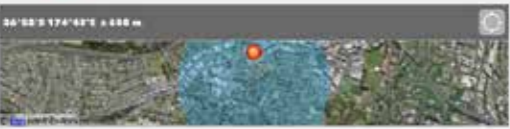
Survey Staff

Date: Wednesday, 19 August 2020 11:30 AM

Local Board:

- Henderson Massey
- Hibiscus & Bays
- Kaipatiki
- Upper Harbour
- Mangere-Otahuhu
- Meungakeikei-Tamaki
- Howick
- Otara-Papatoetoe
- Albert-Eden
- Orakei
- Puketapapa

Location *



Site

Planting Location:

- Street Tree
- Park Tree

Street Name

Street Number

Planting Priority:

- 1 = High priority (no trees), 2 = Medium priority (additional plantings), 3 = Low priority (infill plantings)
- 1 2 3

Street Characteristics:

- Berm
- Footpath
- Planter
- Traffic Island
- Bus Stop
- Near Intersection

Infrastructure:

- Overhead Lines
- Power Pole
- Hydrant
- Water Meter
- Valve
- Telecom
- Plinth
- Gas
- Catch Pit
- Manhole
- Lighting
- Signage
- Vehicle Crossing
- Other

Comments

My Survey

Site

Planting Location:

- Street Tree
- Park Tree

Park Name

Planting Priority:

- 1 = High priority (no trees/playground, no trees), 2 = Medium priority (additional plantings), 3 = Low priority (infill plantings)
- 1 2 3

Park Characteristics:

- SEA
- Native Plantings
- Specimen Trees
- Gardens

Comments

Infrastructure:

- Manhole
- Lighting
- Signage
- Seating
- Playground
- Other

Comments

Site Characteristics:

- Flat
- Bank
- Slope
- Ridge
- Gully
- Swale
- Stream
- Wetland
- Insufficient Root Volume
- Grade Change (+)
- Grade Change (-)
- Moisture Retentive
- Moisture Deficit
- Permeable
- Impermeable
- Irrigation
- Compacted
- Clay

Comments

Possible Species (Botanical name)

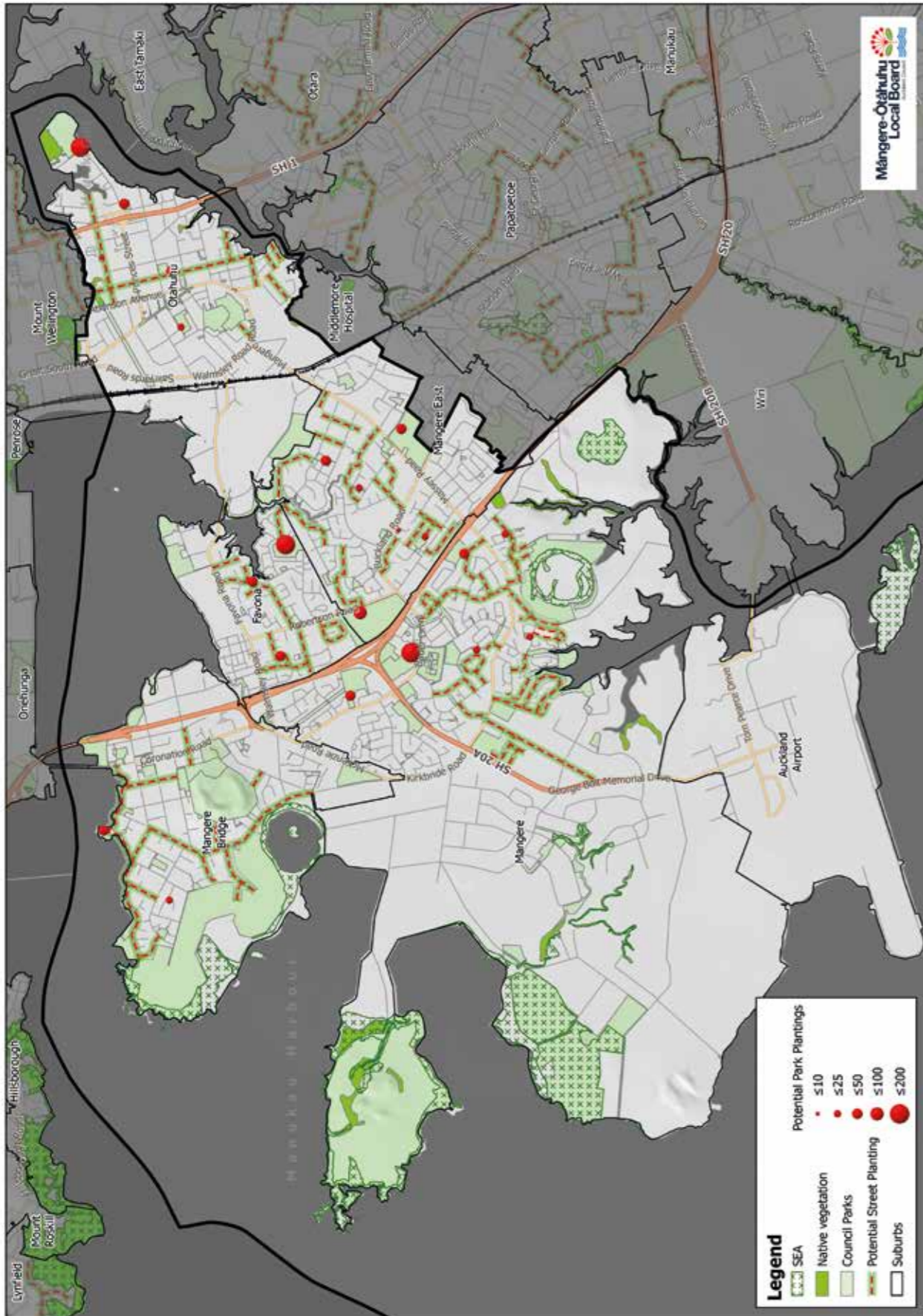
Number of Trees *

Comments

Site Photo

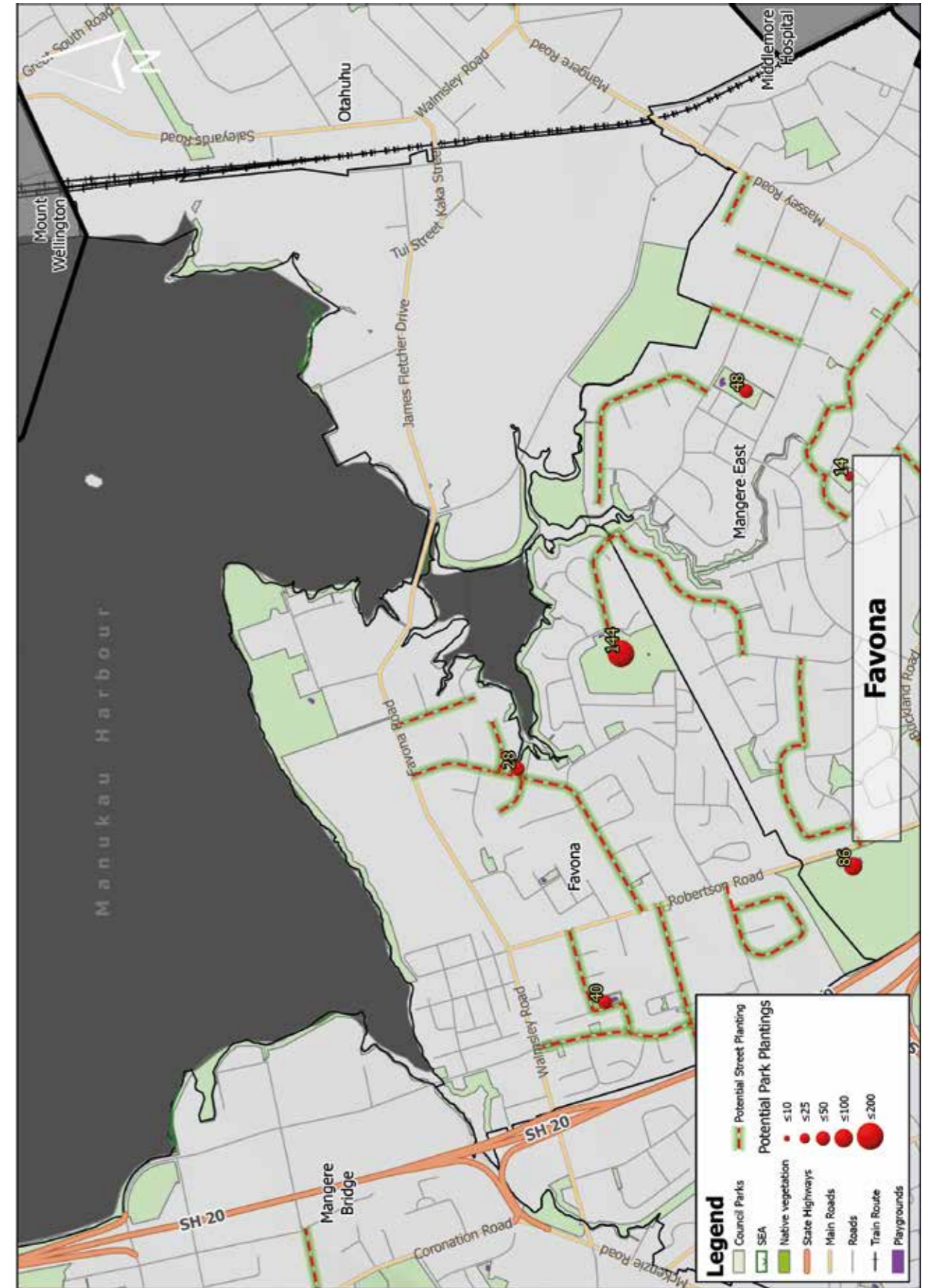


b) Māngere-Ōtāhuhu Tree Planting Opportunities Map

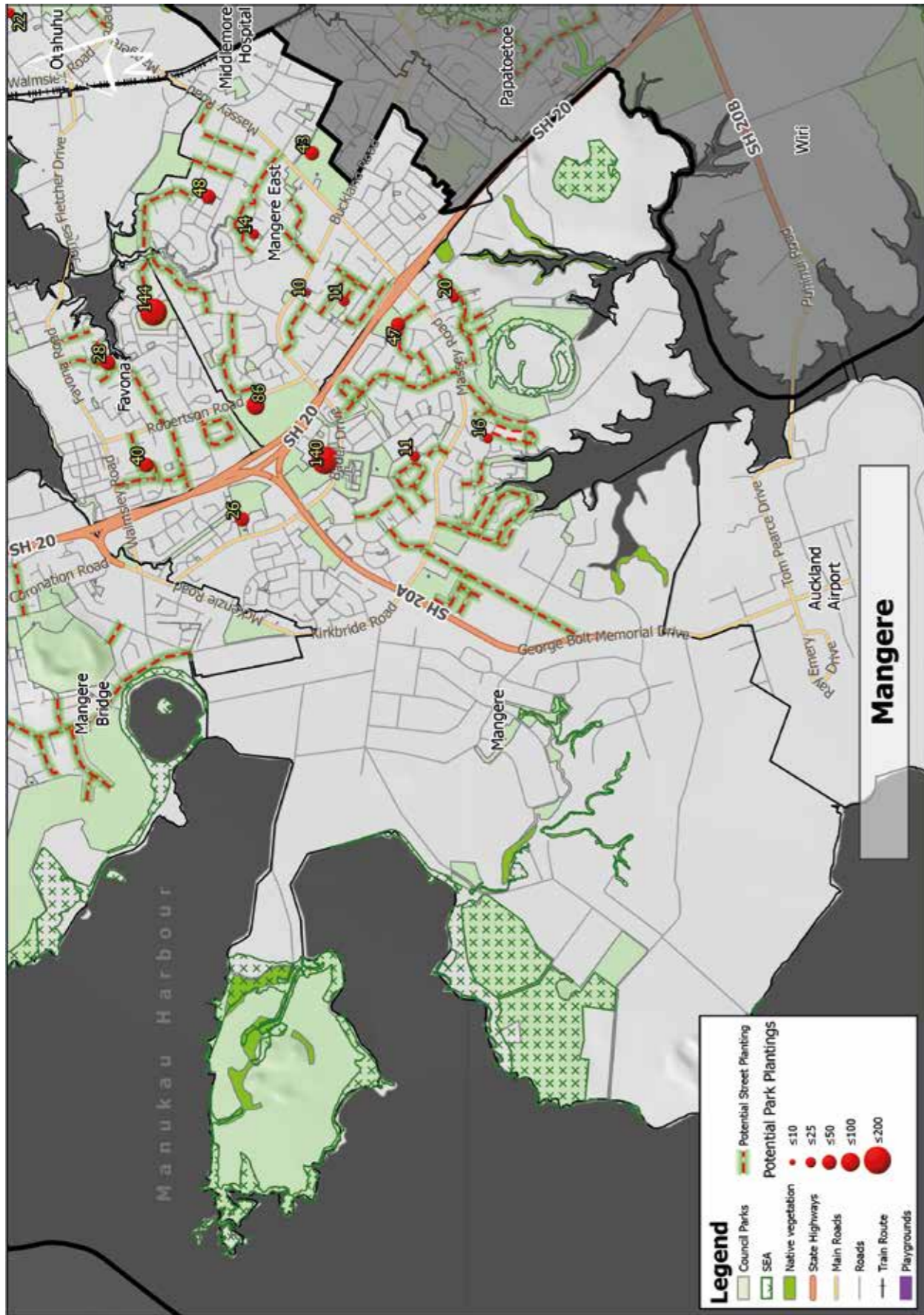


Map 4: Planting opportunity locations for the Māngere-Ōtāhuhu Local Board area

c) Suburb by Suburb Tree Planting Opportunities



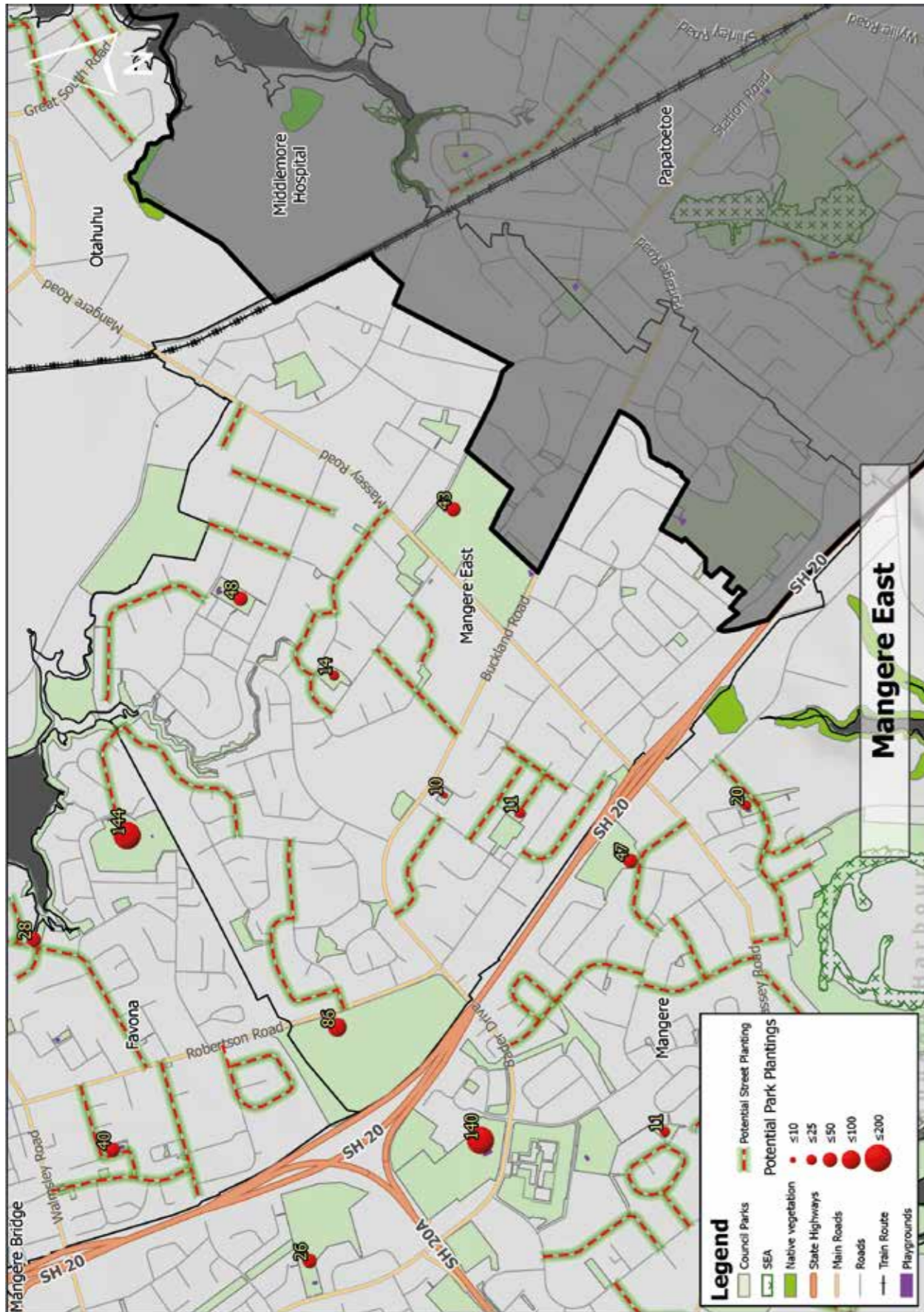
c) Suburb by Suburb
Tree Planting Opportunities (continued)



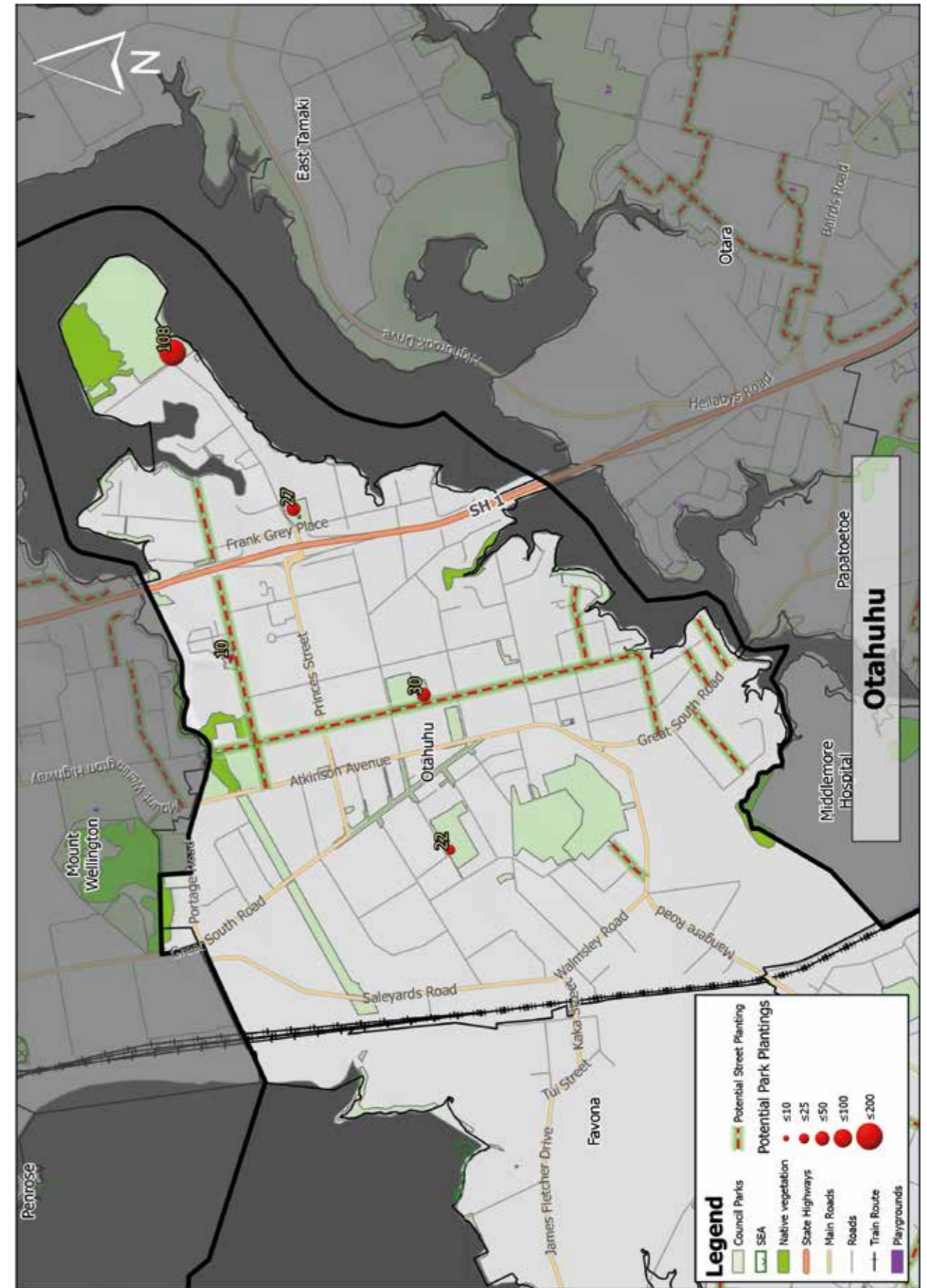
c) Suburb by Suburb
Tree Planting Opportunities (continued)



c) Suburb by Suburb
Tree Planting Opportunities (continued)



c) Suburb by Suburb
Tree Planting Opportunities (continued)



d) Māngere-Ōtāhuhu Park and Street Tree Planting Opportunities

The following tables detail the total number of planting opportunities within parks with playgrounds, along with possible planting sites within the road reserve.

In respect to recommended species to be planted within parks with playgrounds, this determination will occur when site-specific assessments are being undertaken. The tree species detailed in the 'Streets' table are a recommendation based on surrounding existing plantings.

Parks/Playgrounds Planting Opportunities

| Name | Plantings Around Playgrounds | Plantings Throughout Park |
|---------------------------------|------------------------------|---------------------------|
| Anarahi Park | 7 | 5 |
| Bedingfield Memorial park | 12 | 15 |
| Ben Lora Park | 4 | 6 |
| Boggust Park | 24 | 120 |
| Cyclamen Park | 8 | 8 |
| David Lange Park | 40 | 100 |
| Fairburn Reserve | 6 | 16 |
| Harania/Marys Foreshore Reserve | 10 | 18 |
| Imrie Avenue Reserve | 6 | 41 |
| Kiwi Esplanade | 12 | 14 |
| Luke Street Reserve | 10 | 0 |
| Mangere Centre Park | 6 | 80 |
| Mervan Street Reserve | 4 | 7 |
| Moyle Park | 6 | 20 |
| Murphy Park | 10 | 20 |
| Rock Daisy Crescent Reserve | 7 | 13 |
| Seaside Park | 8 | 100 |
| Sutton Park | 8 | 40 |
| Tilberg Park | 14 | 26 |
| Walter Massey Park | 8 | 35 |
| Windrush Park | 5 | 6 |
| Yates Park | 8 | 6 |

d) Māngere-Ōtāhuhu Park and Street Tree Planting Opportunities (continued)

Streets/Road Reserve Planting Opportunities

| Name | Tree Species | Potential Planting Opportunities |
|-------------------|---------------------------------------|----------------------------------|
| Andes Avenue | <i>Sophora microphylla</i> | 24 |
| Archboyd Avenue | <i>Cordyline australis</i> | 52 |
| Ashgrove Road | <i>Meliccytus ramiflorus</i> | 42 |
| Beatty Street | <i>Metrosideros excelsa</i> | 33 |
| Bicknell Road | <i>Kunzea robusta</i> | 25 |
| Blake Road | <i>Kunzea robusta</i> | 45 |
| Boyd Avenue | <i>Prunus sp.</i> | 5 |
| Calthorp Close | <i>Cordyline australis</i> | 68 |
| Cape Road | <i>Rhopalostylis sapida</i> | 49 |
| Chadwick Crescent | <i>Pittosporum crassifolium</i> | 36 |
| Church Street | <i>Pittosporum crassifolium</i> | 82 |
| Cinnamon Road | <i>Sophora chathamica</i> | 17 |
| Cleek Road | <i>Ginkgo biloba</i> | 31 |
| Cornwall Road | <i>Cordyline australis</i> | 18 |
| Cracoft Street | <i>Metrosideros excelsa</i> "Mistral" | 17 |
| Cranmere Crescent | <i>Pittosporum tenuifolium</i> | 64 |
| Crossandra Drive | <i>Alectryon excelsus</i> | 39 |
| Culliman Avenue | <i>Pseudopanax crassifolius</i> | 7 |
| Cyclamen Road | <i>Cordyline australis</i> | 39 |
| Domain Road | <i>Cordyline australis</i> | 5 |
| Donnell Avenue | <i>Pittosporum crassifolium</i> | 26 |
| Driver Road | <i>Metrosideros excelsa</i> "Mistral" | 35 |
| Duggan Avenue | <i>Sophora microphylla</i> | 41 |
| Ewart Road | <i>Sophora chathamica</i> | 19 |
| Ferguson Street | <i>Sophora chathamica</i> | 67 |
| Forbes Road | <i>Magnolia sp.</i> | 11 |
| Gardiner Grove | <i>Citrus reticulata</i> | 17 |
| Growers Lane | <i>Brachychiton acerifolius</i> | 13 |
| Hall Avenue | <i>Brachychiton acerifolius</i> | 21 |
| Harriet Street | <i>Sophora microphylla</i> | 11 |
| Hastie Avenue | <i>Alectryon excelsus</i> | 11 |
| Ilford Crescent | <i>Cordyline australis</i> | 39 |
| Imrie Avenue | <i>Jacaranda mimosifolia</i> | 31 |
| Jaylo Place | <i>Magnolia sp.</i> | 12 |
| Jordan Road | <i>Sophora chathamica</i> | 32 |
| Kiekie Road | <i>Griselinia lucida</i> | 16 |
| Kiwi Esplanade | <i>Metrosideros excelsa</i> | 54 |

d) Māngere-Ōtāhuhu Park and Street Tree Planting Opportunities (continued)

Streets/Road Reserve Planting Opportunities *continued*

| Name | Tree Species | Potential Planting Opportunities |
|--------------------|---------------------------------------|----------------------------------|
| Kohinoor Avenue | <i>Lagerstroemia</i> sp. | 39 |
| Kuranui Place | <i>Cordyline australis</i> | 10 |
| Lachlan Place | <i>Albizia julibrissin</i> | 7 |
| Luke Street | <i>Ginkgo biloba</i> | 34 |
| Luke Street East | <i>Pittosporum crassifolium</i> | 17 |
| Lyncroft Street | <i>Sophora microphylla</i> | 41 |
| Manston Road | <i>Pseudopanax crassifolius</i> | 37 |
| Matapouri Road | <i>Sophora microphylla</i> | 4 |
| McKinstry Avenue | <i>Sophora microphylla</i> | 27 |
| Mervan Street | <i>Pseudopanax arboreus</i> | 37 |
| Michelle Place | <i>Pseudopanax crassifolius</i> | 25 |
| Naylor's Drive | <i>Magnolia</i> sp. | 63 |
| Nelson Street | <i>Sophora chathamica</i> | 7 |
| Ngaio Street | <i>Alectryon excelsus</i> | 5 |
| Pershire Place | <i>Sophora microphylla</i> | 22 |
| Prangley Avenue | <i>Knightia excelsa</i> | 41 |
| Pukaki Road | <i>Alectryon excelsus</i> | 52 |
| Putini Road | <i>Corynocarpus laevigatus</i> | 6 |
| Retreat Drive | <i>Magnolia</i> sp. | 10 |
| Reward Place | <i>Pittosporum crassifolium</i> | 12 |
| Richard Road | <i>Vitex lucens</i> | 18 |
| Ridgemount Rise | <i>Sophora chathamica</i> | 21 |
| Ronaki Road | <i>Alectryon excelsus</i> | 23 |
| Royton Avenue | <i>Vitex lucens</i> | 18 |
| Seaforth Avenue | <i>Betula pendula</i> | 9 |
| Steven Street | <i>Sophora microphylla</i> | 26 |
| Tilberg Street | <i>Metrosideros excelsa</i> "Mistral" | 8 |
| Tinkler Place | <i>Betula pendula</i> | 5 |
| View Road | <i>Alectryon excelsus</i> | 9 |
| Von Sturmer Street | <i>Pseudopanax crassifolius</i> | 31 |
| Wakefield Road | <i>Sophora microphylla</i> | 58 |
| Wallace Road | <i>Pittosporum crassifolium</i> | 112 |
| Wayne Drive | <i>Cordyline australis</i> | 26 |
| Wellesley Road | <i>Metrosideros excelsa</i> | 36 |
| Westney Road | <i>Metrosideros excelsa</i> "Mistral" | 71 |
| Windrush Close | <i>Cordyline australis</i> | 39 |
| Woodward Avenue | <i>Metrosideros excelsa</i> | 16 |

e) Planting Examples

Tree Pit Planting



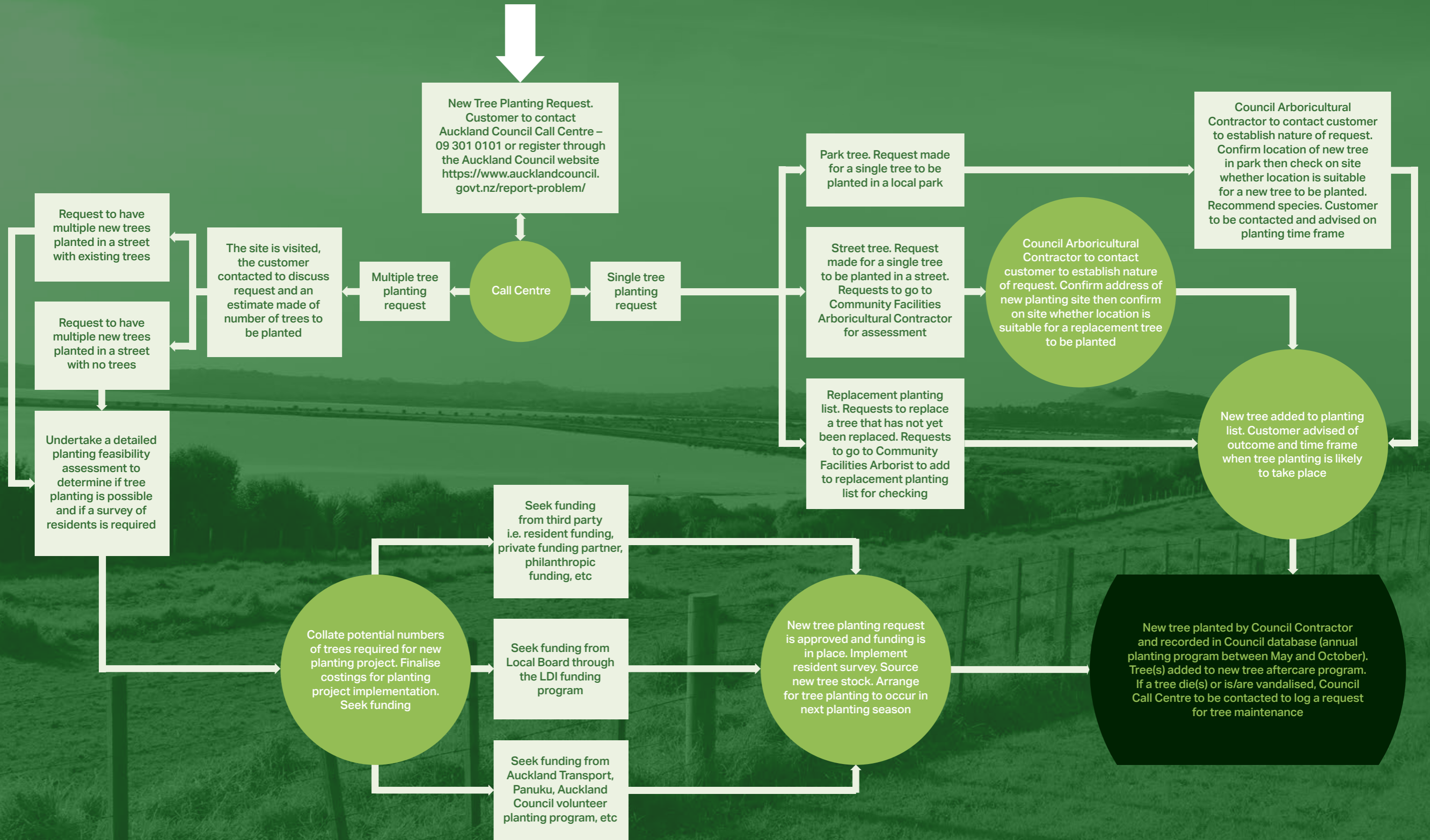
Park Planting



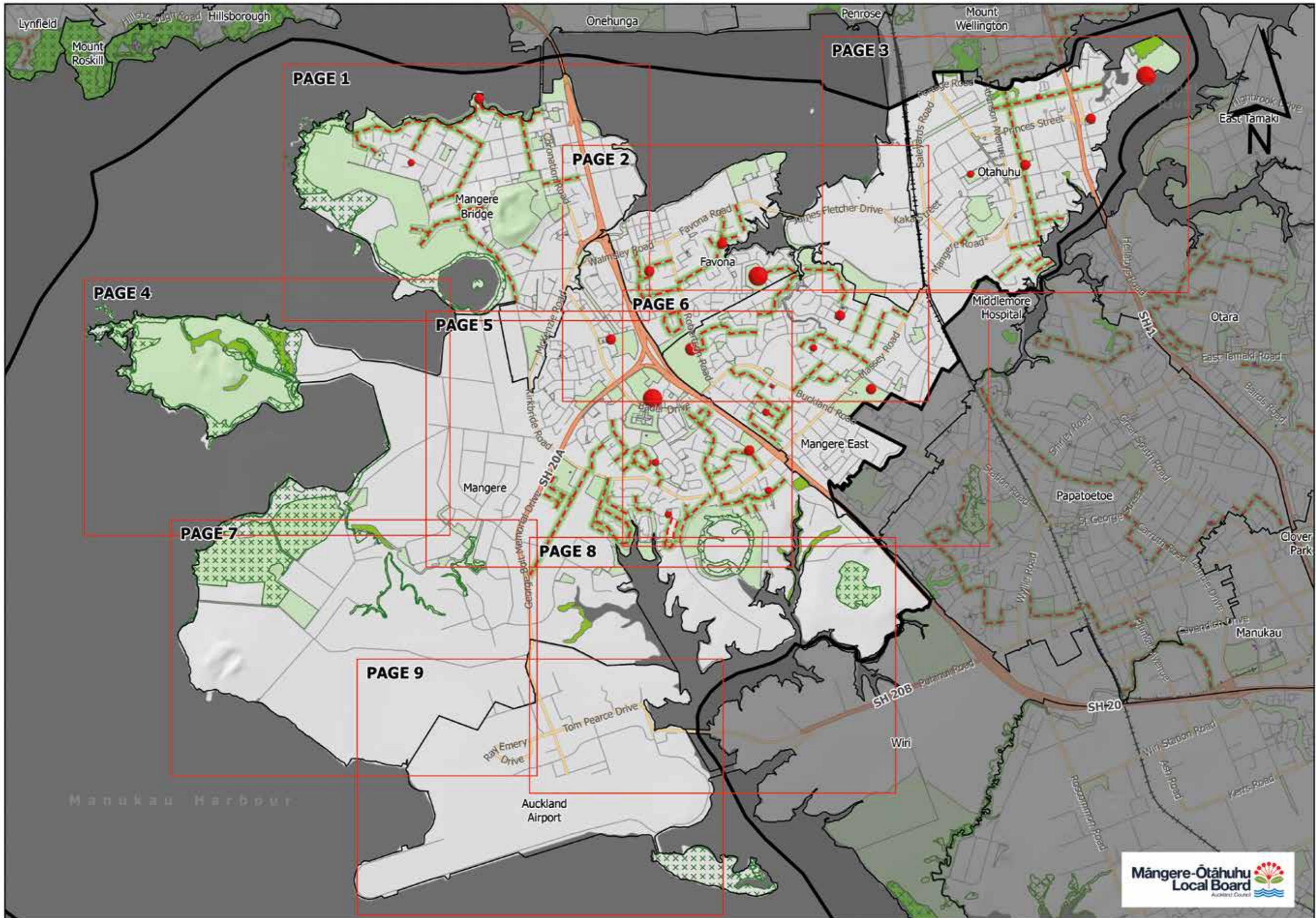
Berm Planting



f) Auckland Council Tree Planting Request Process



g) Local Board Overview Map



h) Suggestions For Public Planting Sites

Please detail planting opportunities within parks and on streets under the following maps. Refer to appendices C for larger maps of individual areas. Once completed, please forward your suggestions to www.aucklandcouncil.govt.nz/report-problem.



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h) Suggestions For Public Planting Sites



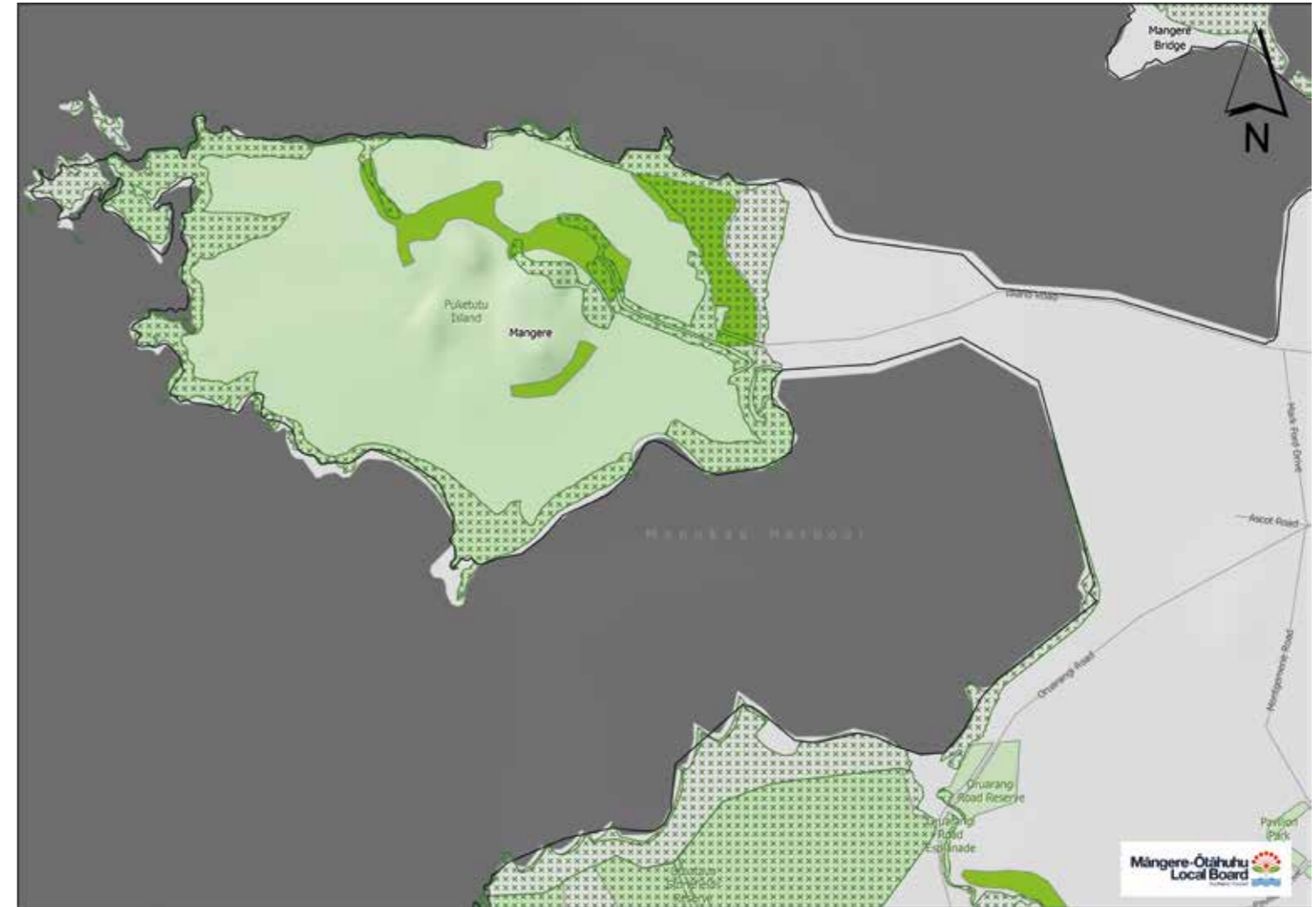
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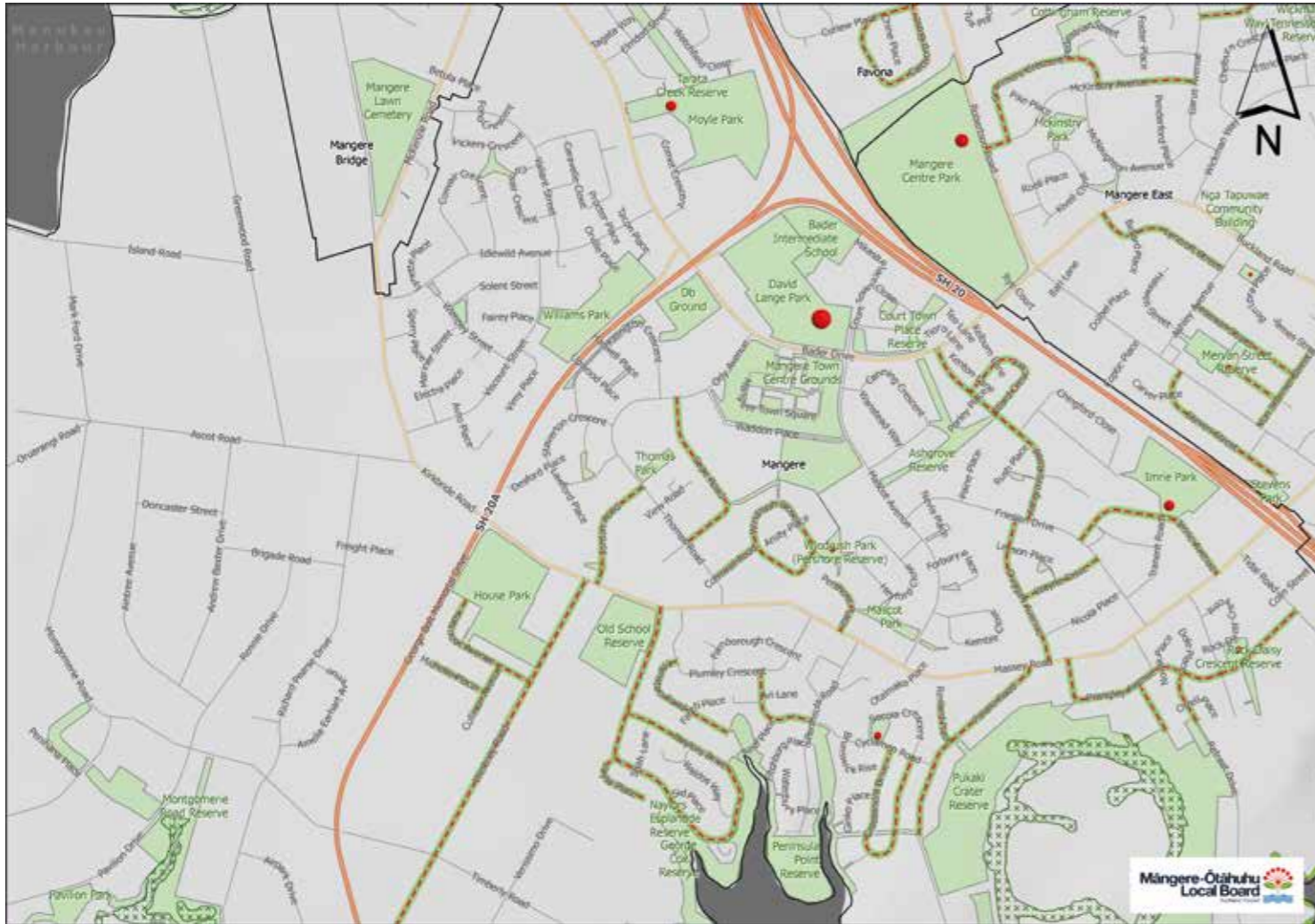
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h) Suggestions For Public Planting Sites



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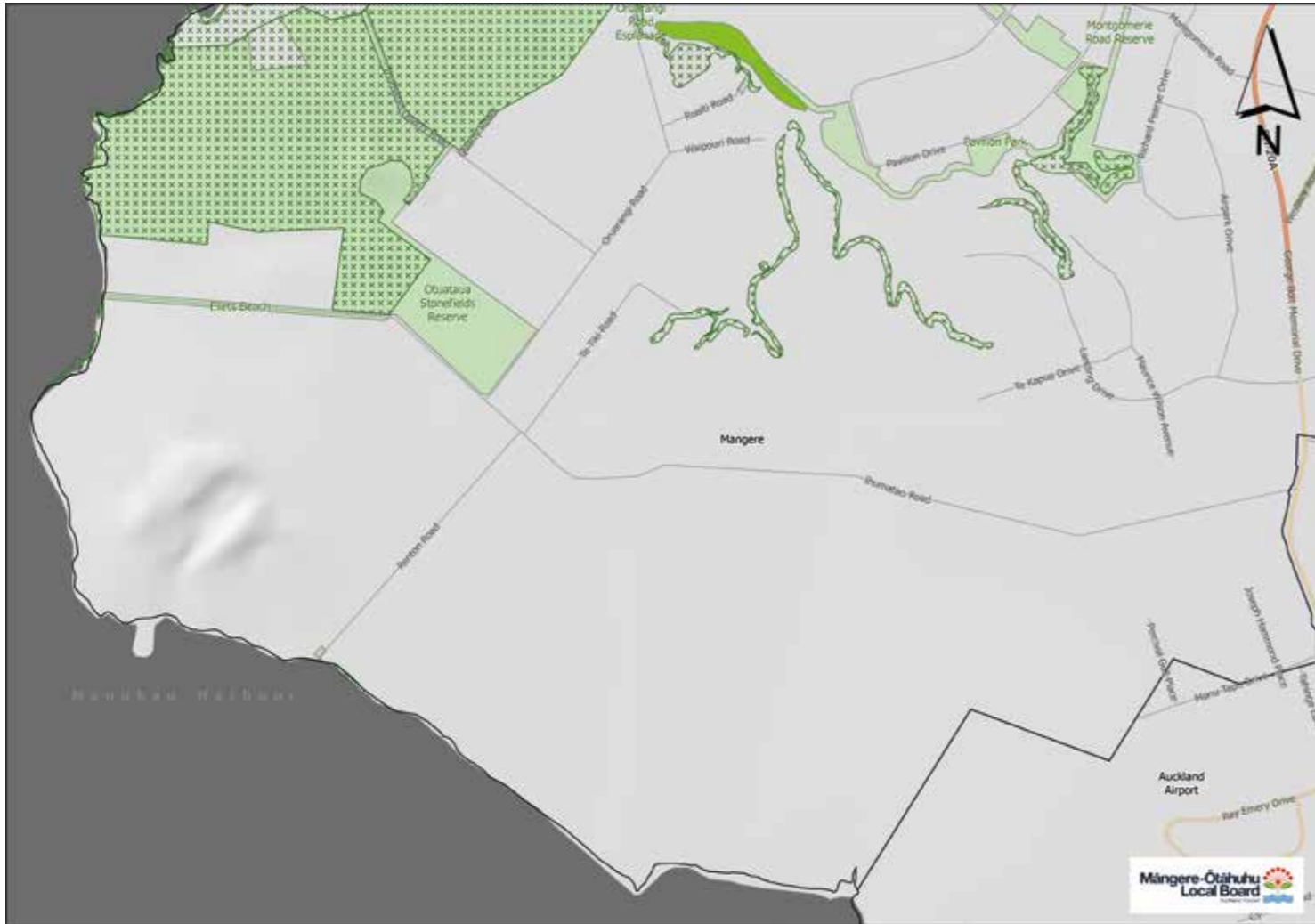
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h) Suggestions For Public Planting Sites



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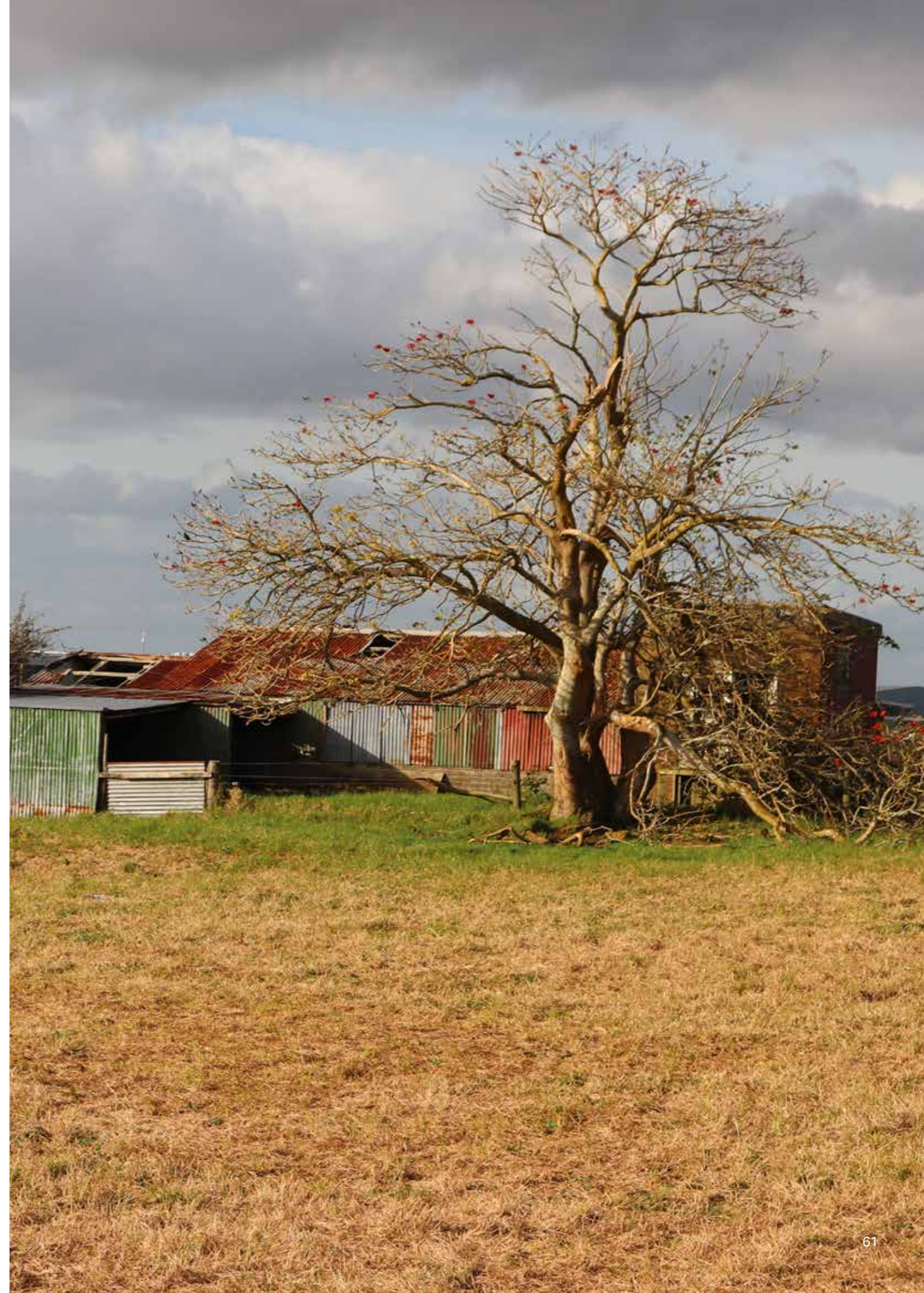
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h) Suggestions For Public Planting Sites



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