

Socially Beneficial Native Afforestation Site Prioritisation

**for carbon sinks
and other purposes**

Kāpiti Coast District

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Introduction

Investment in native afforestation is an opportunity where community social values can be enriched, where economic activities can be protected and boosted, and where ecological processes and systems can be restored and enhanced.

Native afforestation can have many social benefits that increase the value of a site to a community compared to present land uses.

This report clarifies what native afforestation is, and its benefits over commercial plantation afforestation.

It then identifies the types of social benefits that can be gained from native afforestation, and where these benefits occur across the landscape.

Using a study site on the Kapiti Coast, priority sites were then selected with high and diverse social benefits to locate practical opportunities for native afforestation.

These priority native afforestation sites provide significant additional social benefits compared to any investment solely for carbon sinks.

Aside from this type of social benefits site prioritisation, analysis of economic and ecological benefits of native afforestation should also be undertaken as separate studies for any area.

Native afforestation definition

Native afforestation is the restoration or revegetation of an indigenous native forest ecosystem where none exists at present.

Commercial afforestation is the use of forest for commercial extractive purposes such as timber production.

Social benefits compared to commercial afforestation

There are several social benefits that native afforestation has compared to commercial afforestation:

- Avoid periodic deforestation and extensive soil disturbance as in commercial plantation afforestation
- Minimal pollen generation
- Lesser wildfire risk
- Better suited to native birdlife in our community

Native afforestation social benefits considered

Carbon Sink

Carbon sinks will store up carbon in biomass and soil. Greater priority was given to sites with soil wetness limitations, where greater biomass can be grown and soils can accumulate more carbon, particularly in peat soil areas.

Improved flood protection

Protection of public infrastructure. Native afforestation will reduce the amount of runoff from a given area of land. The beneficial effect on downstream public infrastructure will depend on the size of the catchment that the native afforestation is undertaken in. The smaller a catchment, the greater the benefits. This is important given the expected increase in flooding from climate change.

Improved public water supply quality and reliability

Protection of public water supplies for urban purposes. Our public water supplies are dependent on the contributing catchments for the quality of water in the river, and the quantity during drought periods. These are both dependent on the amount of permanent native vegetation in the catchment. Low water quality requires additional treatment cost, and low flows that approach or exceed resource consent limits restrict normal personal use, while having negative impacts on the freshwater ecosystem downstream. This is particularly important given the expected increase in the frequency of droughts from climate change.

Improved soil conservation

Protection of amenity coast, coastal recreational fisheries, and public flood protection works from rising bed levels. The erosion of soil and rock lowers water quality in times of flood, and adds bedload to rivers that can render flood protection works progressively redundant, and smother downstream lakes, estuaries, and coasts with sediment.

Enhanced people landscapes

People landscapes surround where people live, work, commute, and travel as they go about their lives. The benefit of a native forest landscape varies with distance from the person observing. Sites must be visible to qualify.

Accessible community projects

Native afforestation projects that adjoin where people live will build community engagement, improve community recreational amenity, and reduce costs through voluntary planting.

Enhanced priority cultural landscapes

Enhancing outstanding natural features and landscapes and the natural character margins of the coast, wetlands, lakes, and rivers. Many outstanding natural features and landscapes are identified in District and Regional Plans. The margins of our coast, wetlands, lakes, and rivers are important cultural landscapes.

Amenity values

Enhancing the amenity value of trails, river, and coast use. Many significant amenity uses can be enhanced by native afforestation of adjoining areas. River uses include boating, fishing, and swimming. Land uses include walking and cycling/mountainbiking trails. Coastal uses include beach walking, boating, fishing, and swimming.

Districtwide native afforestation social benefits assessment

Areas considered included grassland, exotic forest, harvested forest, or scrub. All exotic forest is included because after harvest there is often the opportunity to change the land use to native forest and gain the resultant ongoing social benefits.

All social benefits were mapped and prioritised so that the overall social benefits of available sites could be assessed.

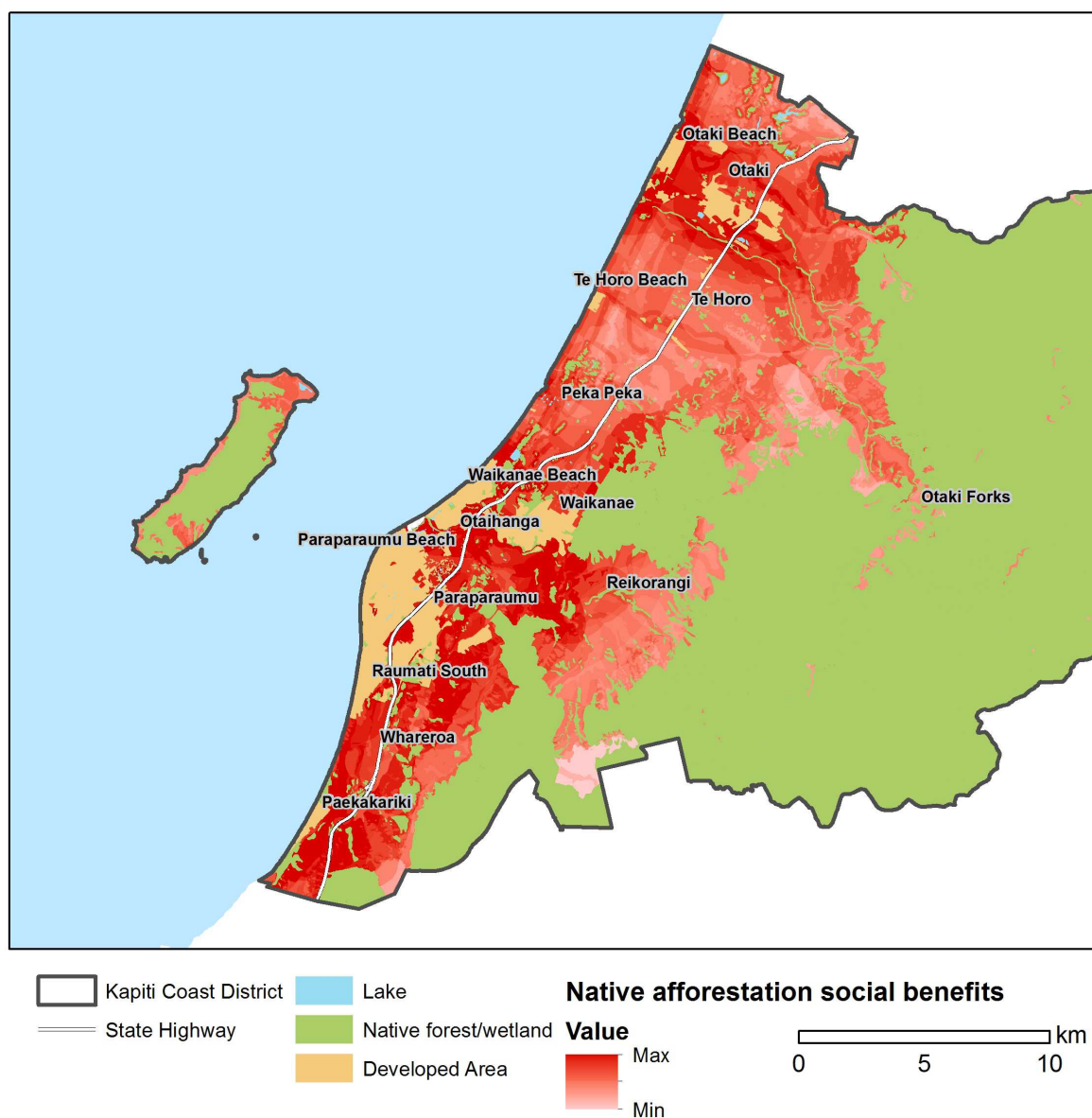


Figure 1 Kāpiti Coast District native afforestation social benefits

Priority native afforestation social benefit sites identified

While many areas have multiple social benefits, several priority sites have been identified with a significant area, a high number of social benefits, and are not built on.

2,110 hectares of priority sites were identified.

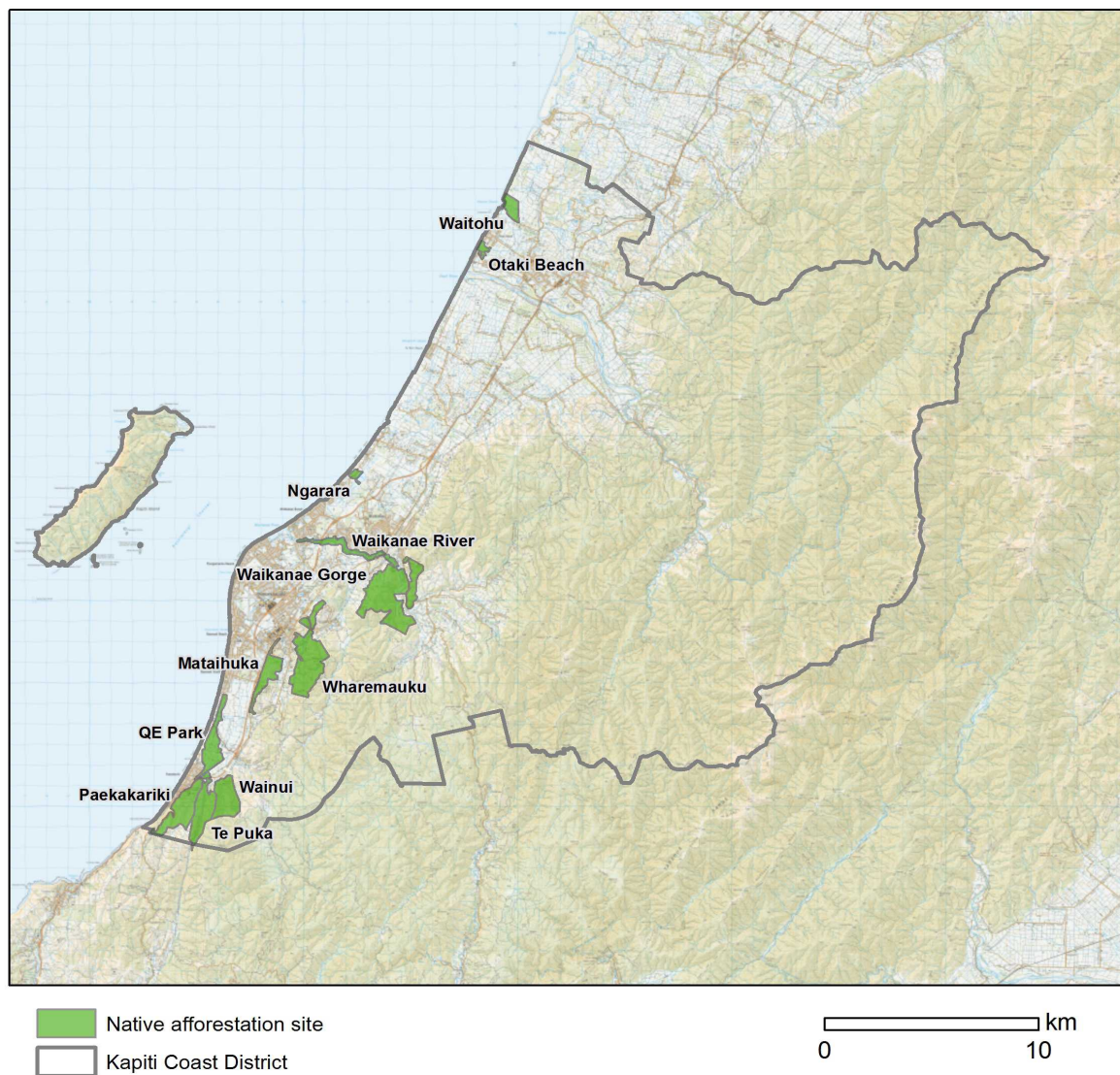


Figure 2 Kāpiti Coast District priority native afforestation social benefit sites

Waitohu

Significant social benefits

People landscape, Community project, Cultural landscape coast, Cultural landscape wetland, Cultural landscape outstanding.

Existing land use

Pasture on the flat and dunes, exotic afforestation, dunes.

Tenure

One private landowner.

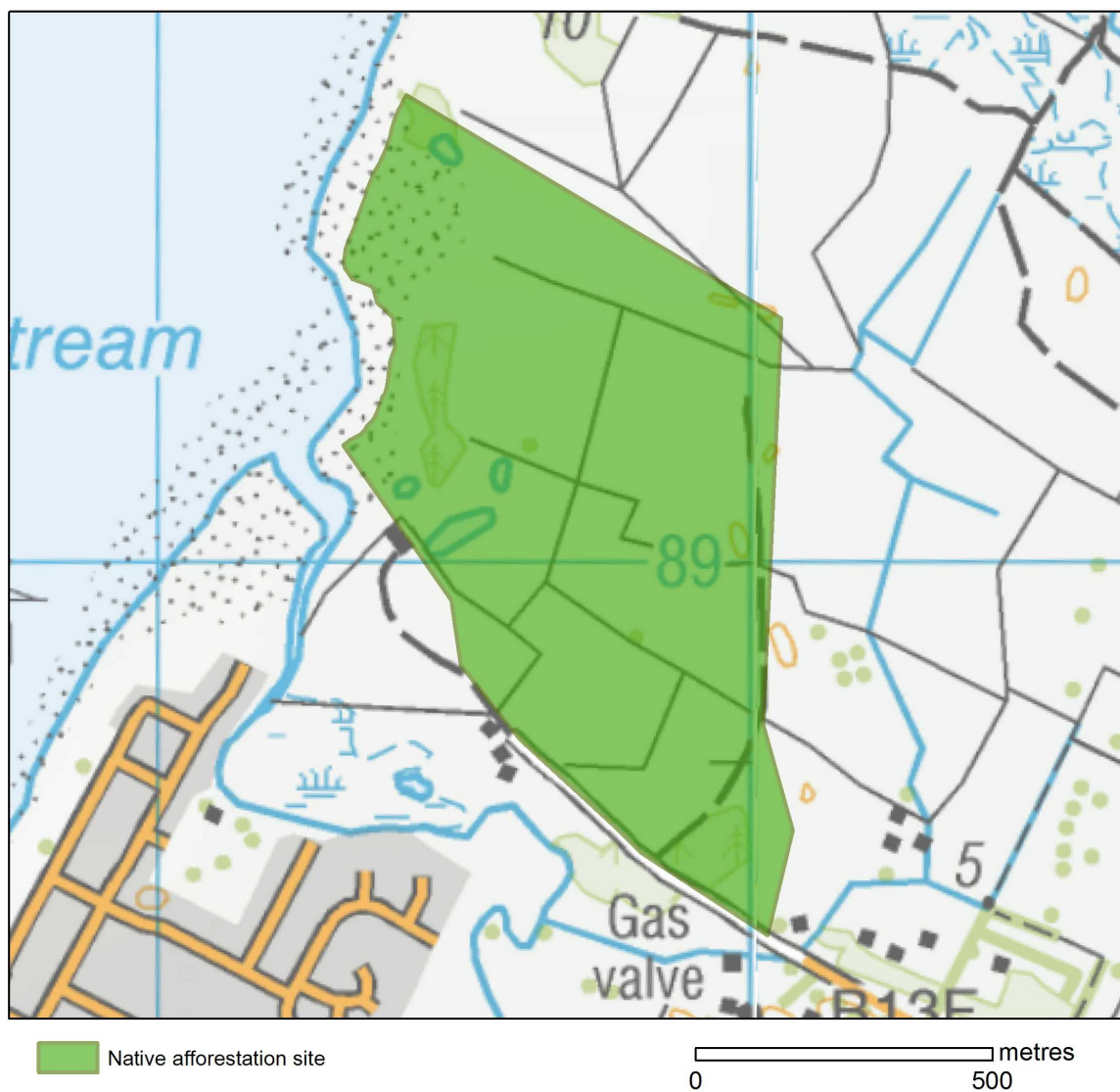


Figure 3.1 Waitohu native afforestation site 65 ha.

Otaki Beach

Significant social benefits

People landscape, Community project, Cultural landscape coast, Cultural landscape wetland.

Existing land use

Dunes and pines.

Tenure

DOC.



Figure 3.2 Otaki Beach native afforestation site 25 ha.

Ngarara

Significant social benefits

People landscape, Community project, Cultural landscape coast, Cultural landscape wetland, Cultural landscape outstanding.

Existing land use

Dunes and grass.

Tenure

Kāpiti Coast District Council.

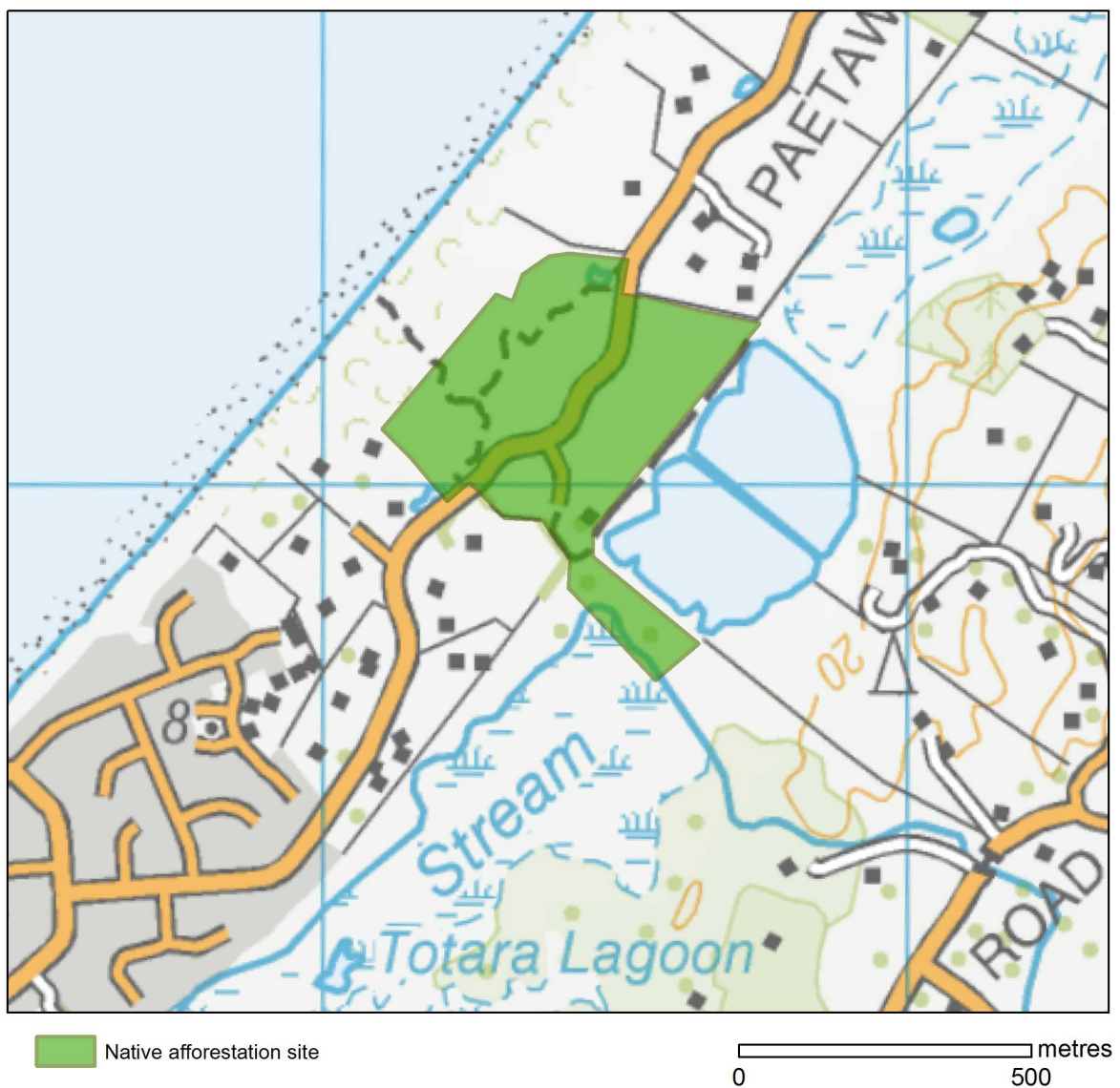


Figure 3.3 Ngarara native afforestation site 19 ha.

Waikanae Gorge

Significant social benefits

Flood protection, Water supply, Soil Conservation, People landscape, Community project, Cultural landscape river, Cultural landscape outstanding.

Existing land use

Grass, native forest, exotic forest, pasture.

Tenure

Kāpiti Coast District Council, Private owners.

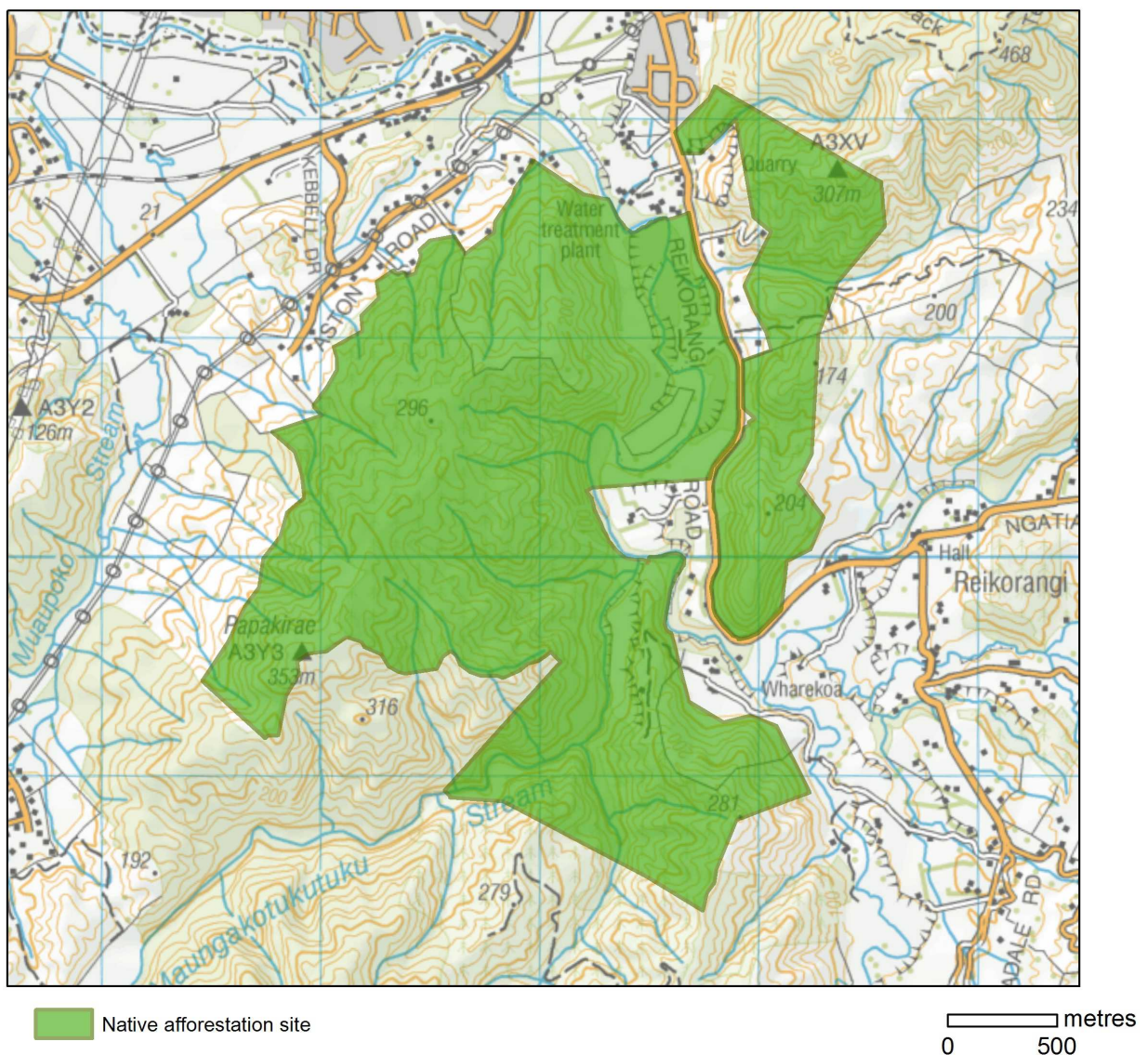


Figure 3.4 Waikanae Gorge native afforestation site 555 ha.

Waikanae River

Significant social benefits

Flood protection, People landscape, Community project, Cultural landscape river, Cultural landscape outstanding.

Existing land use

Grass, native forest, pasture.

Tenure

Kāpiti Coast District Council, Greater Wellington Regional Council, NZTA, Private owners.



Figure 3.5 Waikanae River native afforestation site 110 ha.

Mataihuka

Significant social benefits

Flood protection, Soil Conservation, People landscape, Community project, Cultural landscape outstanding.

Existing land use

Native forest, scrub, pasture.

Tenure

Kāpiti Coast District Council, Private owners.

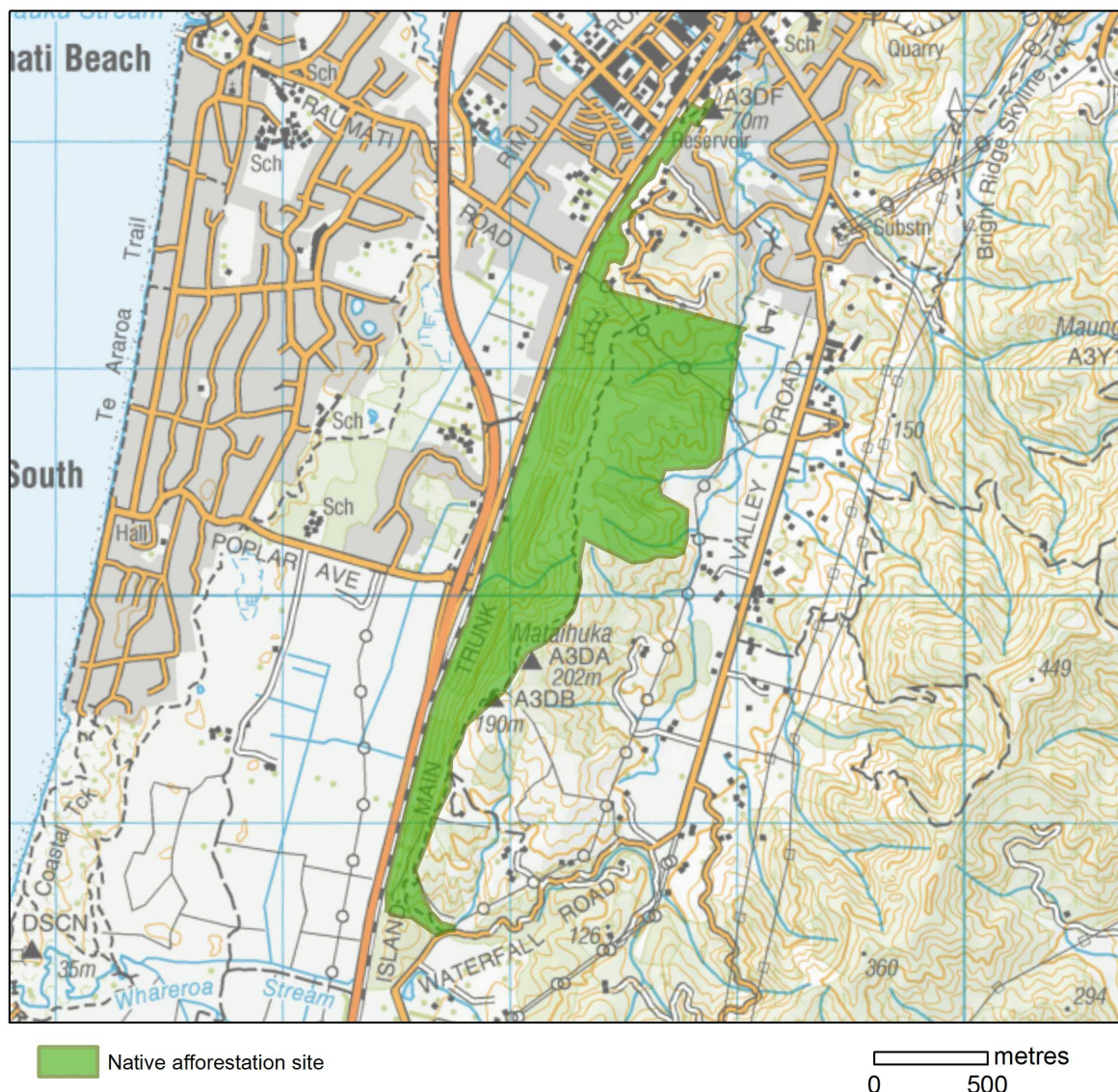


Figure 3.6 Mataihuka native afforestation site 134 ha.

Wharemauku

Significant social benefits

Flood protection, Soil Conservation, People landscape, Community project, Cultural landscape outstanding.

Existing land use

Exotic forest, pasture, native forest.

Tenure

Private owners, Kāpiti Coast District Council.

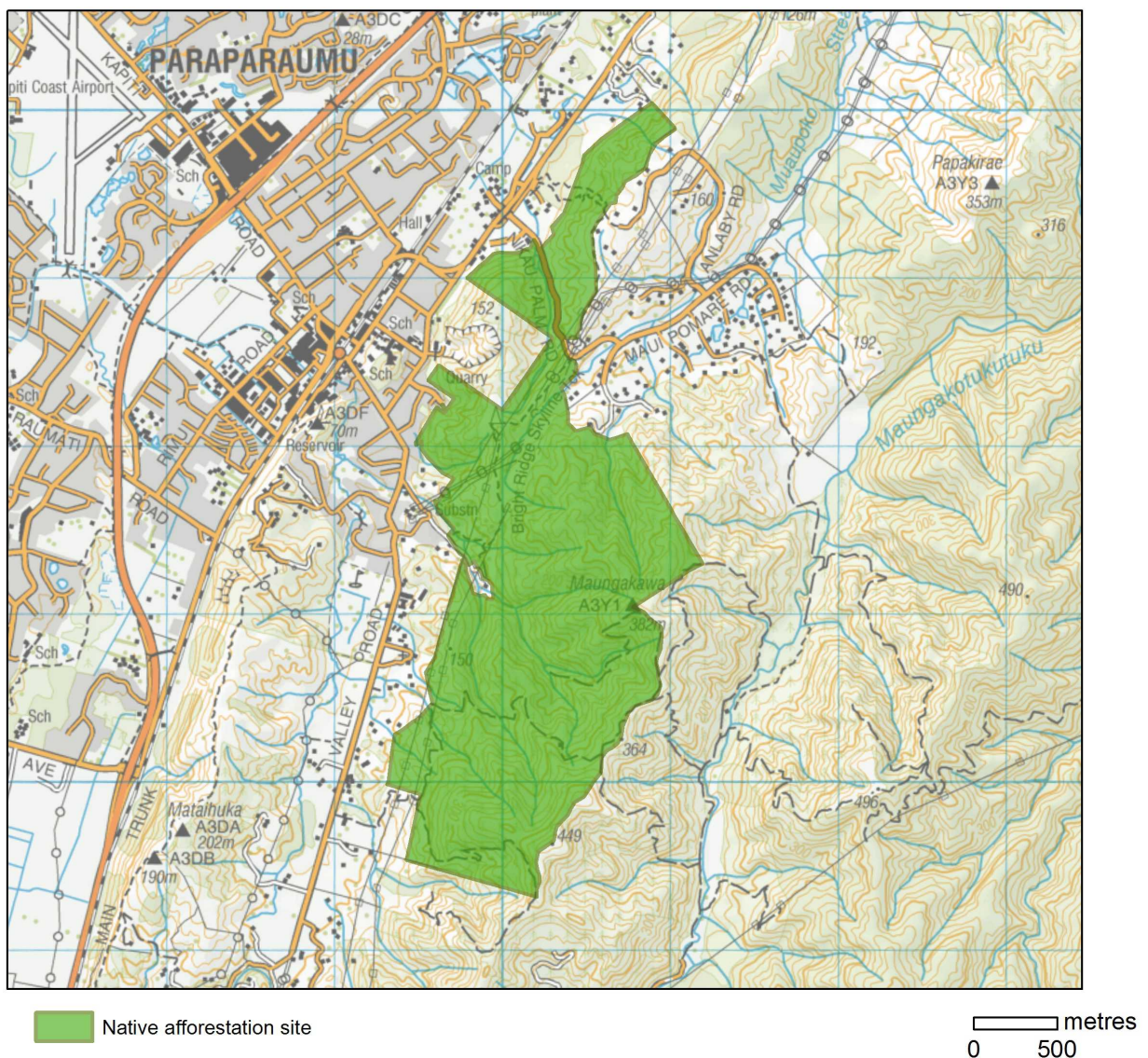


Figure 3.7 Wharemauku native afforestation site 396 ha.

QE Park

Significant social benefits

People landscape, Community project, Cultural landscape coast, Cultural landscape wetland, Cultural landscape outstanding.

Existing land use

Dune, scrub, grass, pasture.

Tenure

DOC (Managed by GWRC), NZTA.

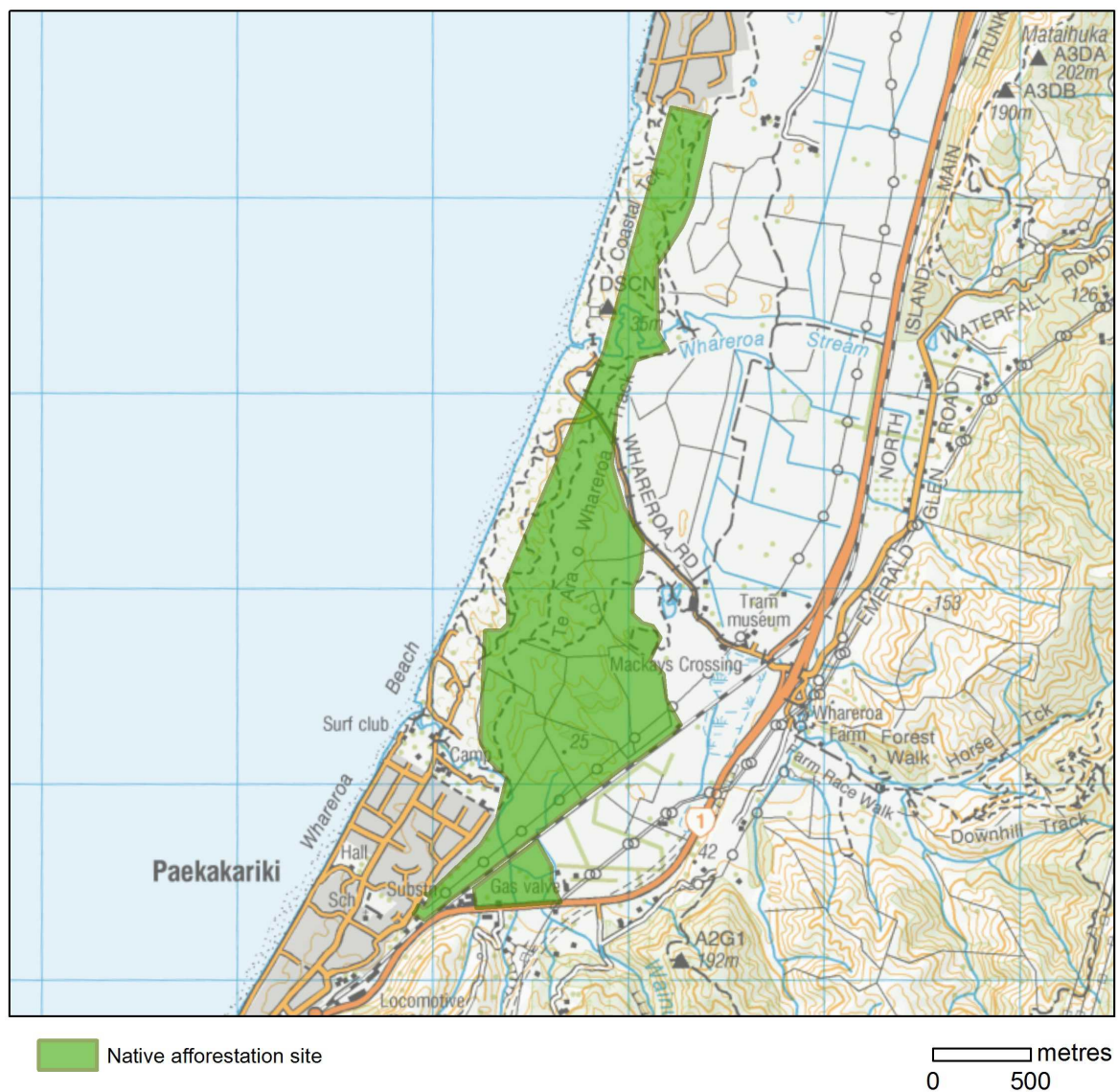


Figure 3.8 QE Park native afforestation site 180 ha.

Wainui

Significant social benefits

Flood protection, Water supply, Soil Conservation, People landscape, Cultural landscape outstanding.

Existing land use

Exotic forest, native forest.

Tenure

Two Private owners, Kāpiti Coast District Council.

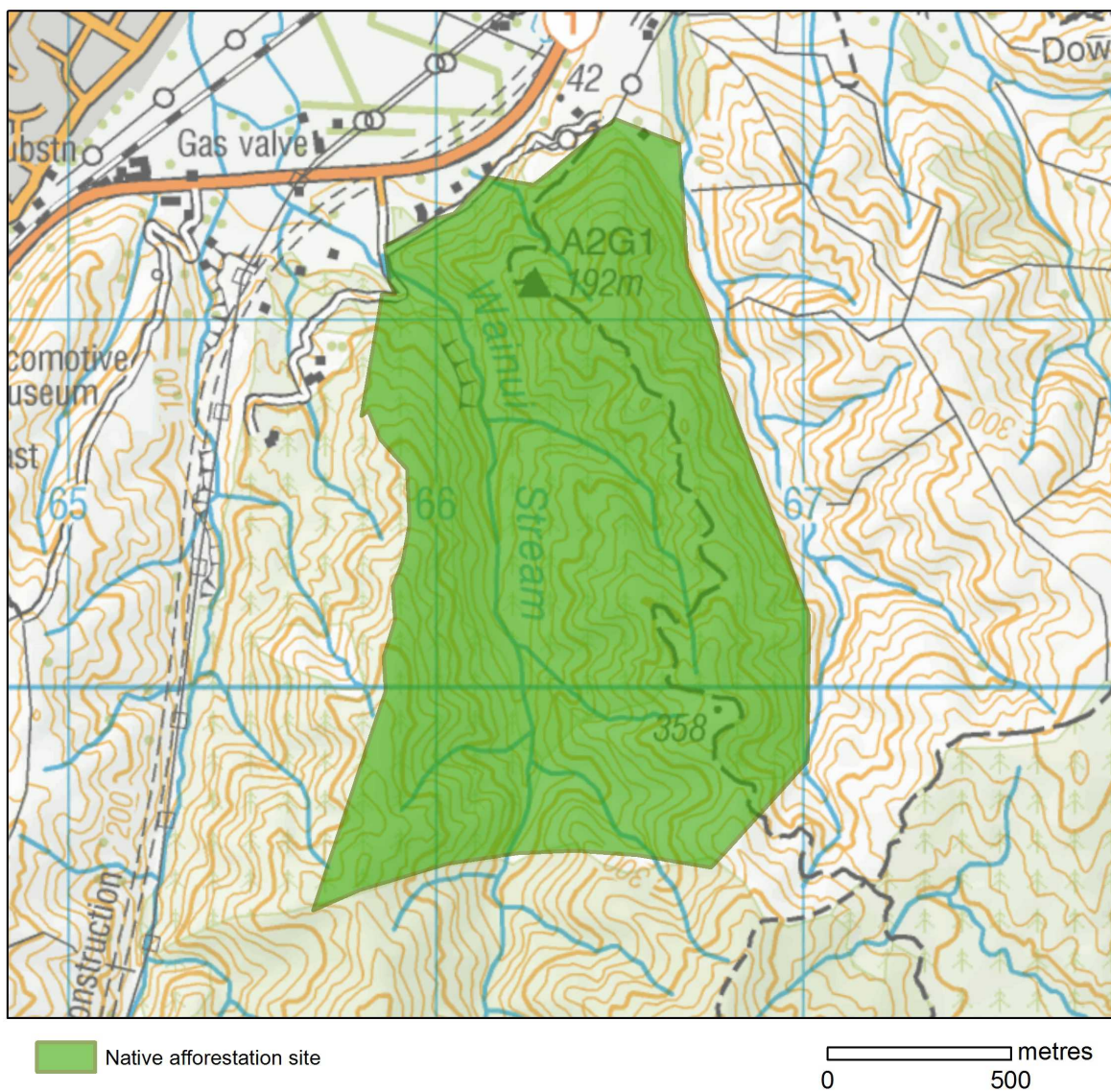


Figure 3.9 Wainui native afforestation site 190 ha.

Te Puka

Significant social benefits

Flood protection, Soil Conservation, People landscape, Community project, Cultural landscape outstanding.

Existing land use

Pasture, exotic forest, native forest.

Tenure

NZTA, One Private owner.

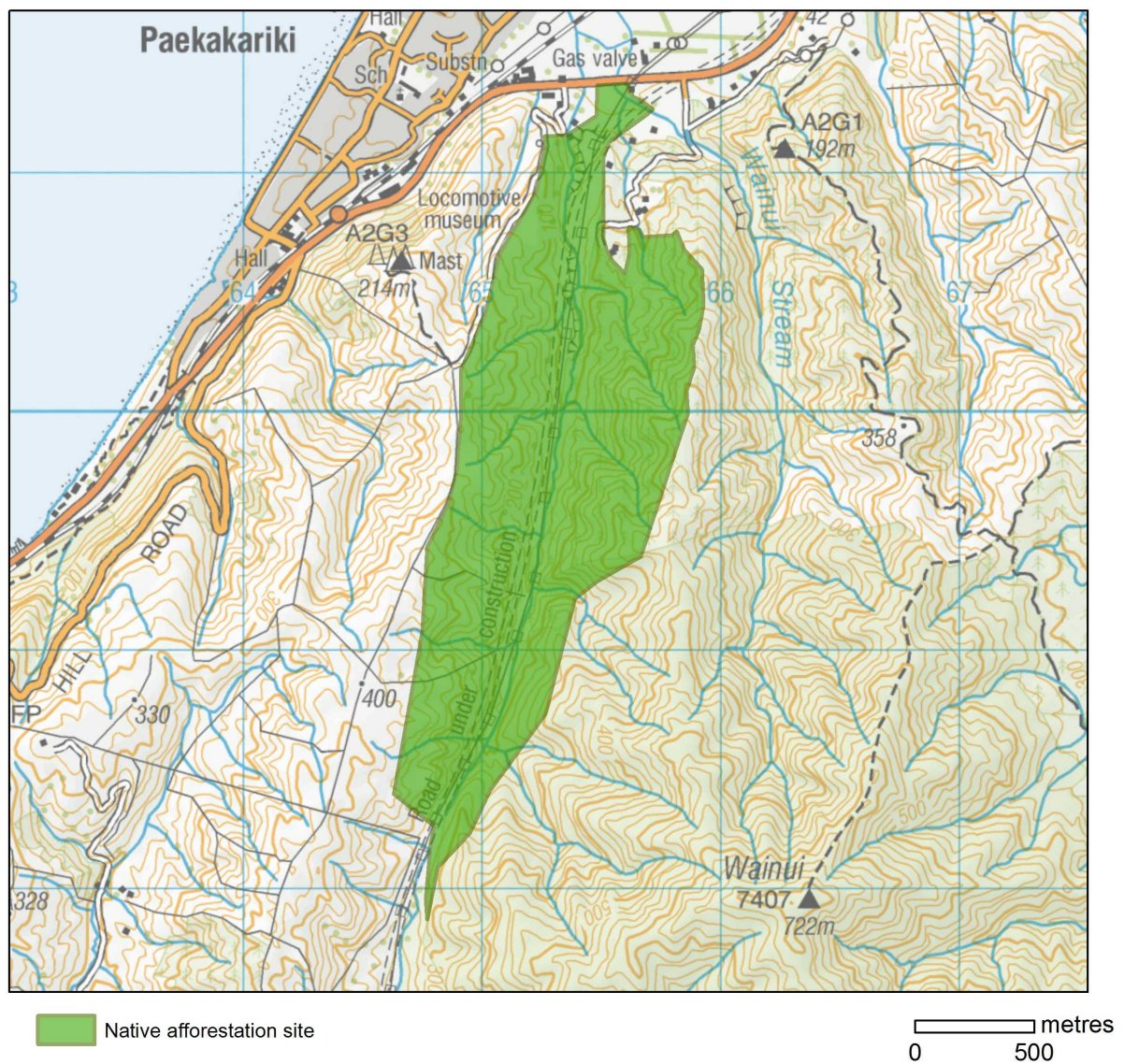


Figure 3.10 Te Puka native afforestation site 201 ha.

Paekakariki

Significant social benefits

Flood protection, Soil Conservation, People landscape, Community project, Cultural landscape coast, Cultural landscape outstanding.

Existing land use

Pasture, scrub, native forest.

Tenure

NZTA, Kāpiti Coast District Council.

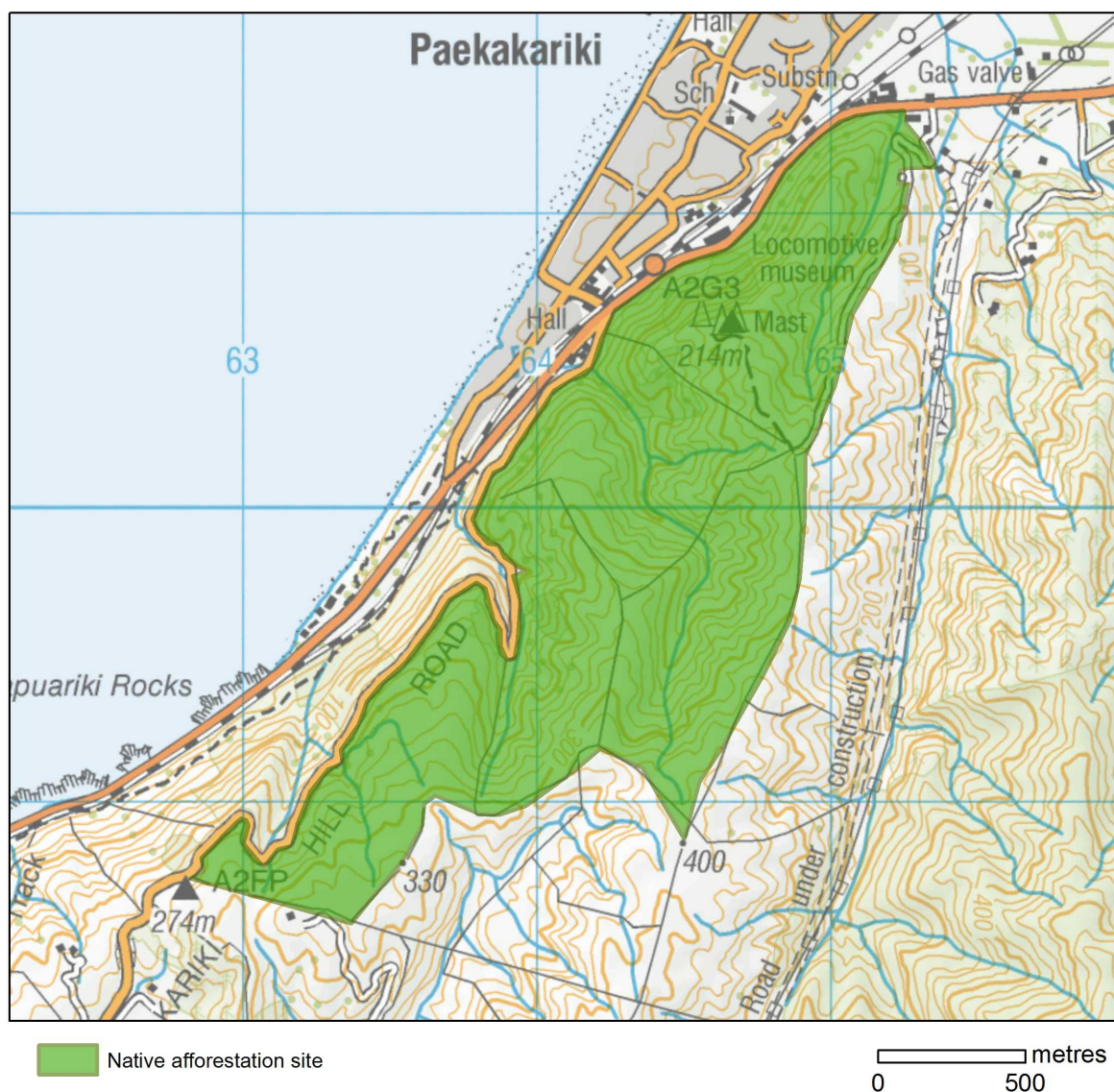


Figure 3.11 Paekakariki native afforestation site 231 ha.

Other native afforestation social benefit site opportunities

This report identifies sites with high social benefits across the board. There are significant social benefits to be gained from other sites that have high value for individual social benefits such as cultural landscape, or water supply.

Some other significant site opportunities identified include:

QE Park wetland – cultural landscape

Kāpiti Expressway surplus land – cultural landscape and community projects

Waikanae catchment erosion prone land – soil conservation and water supply

Conclusions

This report identifies practical opportunities to gain maximum social benefit from any investment in native afforestation.

Native afforestation can have many social benefits that increase the value of a site to the community over and above any ecological, economic or carbon sink benefits.

The process is applicable to any organisation wishing to undertake native forest revegetation for social purposes, as it identifies many layers of value to the investment.

It is applicable to any organisation that wishes to offset carbon emissions and benefit the community socially at the same time. This particularly applies to Councils and Central Government Agencies.
