

- Existing open space
- Potential open space
- Well connected town centre

- Strengthened pedestrian link
- Lake Horowhenua walkway
- Potential trunk-line greenway

- Green-links
- Queen Street spine
- Main vehicular circulation route

- Private recreation space
- Private open space
- Cemetery

- Ranges walkway
- Threshold / gateway

- Reinforced focal point



## Lake Horowhenua – Hokio Beach Ecological Network

This Network builds on the hydrological and ecological connections along the Hokio Stream between Lake Horowhenua and Hokio Beach. Lake Horowhenua is the largest lake in the District and has a number of associated forest and swamp remnants, including the Whitiki Bush and Swamp and Lake Horowhenua West Bush. The Pakipaki Dune Forest north of Hokio Stream and Otawhaki Lagoon also form part of this Network. The swamp forest with kahikatea and a number of other vegetation associations within this Network are considered to be rare in the district.

The Hokio Stream has been identified as a site where riparian restoration would be most advantageous and there are a number of planting and stream restoration initiatives underway along this waterbody by Horizons Regional Council and the Lake Trustees, including willow removal, fencing and riparian planting. The Hokio Stream also has a number of other areas of existing riparian vegetation that will add to the values of this Network. Increased restoration planting along the Hokio Stream will improve existing ecological connections between areas of ecological value within the Network and will have long-term benefits.

Ongoing threats to this Network are largely in relation to the degraded water quality of Lake Horowhenua and the Hokio Stream. Ongoing land drainage and waterbody maintenance and changing land uses continue to threaten the long-term survival of the dune lakes and wetlands within this Network and there are also associated issues with plant and animal pests along the Hokio Stream and areas of indigenous vegetation. Both Lake Horowhenua and Hokio Stream have perch present which may predate and compete with native fish species.



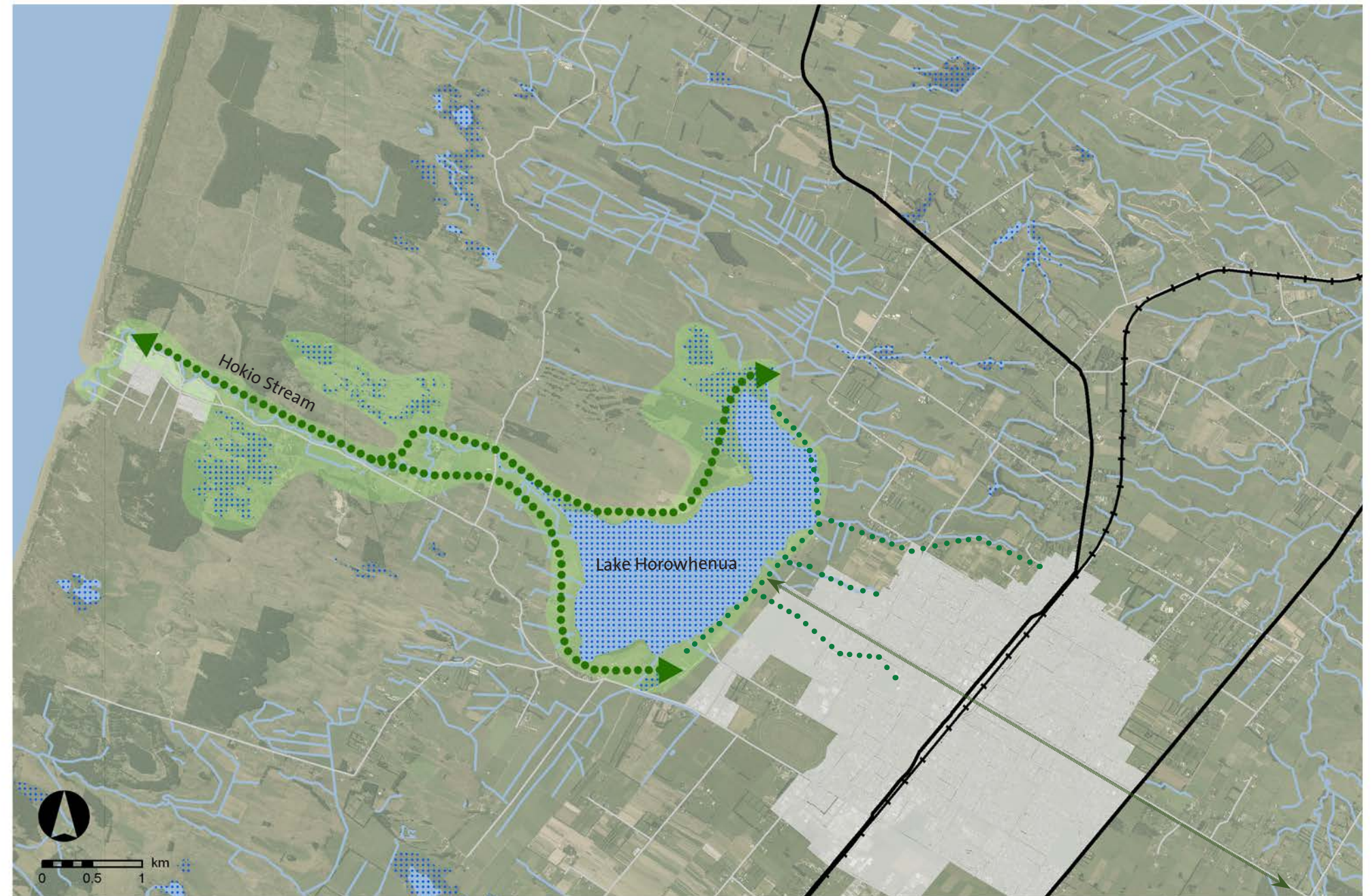
Lake Horowhenua



## Lake Horowhenua – Hokio Beach Ecological Network

Although outside of this Network, the Moutere and Nga Kawau Lagoon complex north of the Hokio Stream (comprising the Ohourangi, Ratahi, Wai Ewe, Ohita, Nga Kawau, Nga Kawau-iti and Kuku Lagoons) are also known for their high ecological values as habitat for indigenous flora and fauna.

The long-term outcome for this network is to manage water quality, including run-off and lake water levels, and to provide a continuous ecological and recreational connection through building on the existing riparian fencing and planting initiatives between Lake Horowhenua and the estuary at Hokio Beach.



This plan shows the potential Lake Horowhenua - Hokia Beach Ecological Network

Identified ecological network



# Manakau - Existing Open Space

## Key characteristics

Manakau is a small rural settlement located in the south of the Horowhenua District on the edge of State Highway 1 with the majority of the settlement on the east side of the road.

Manakau has one primary school, the nearest high schools are located in Levin and Otaki.

## Successfulness of the existing open space

Manakau has two main areas of open space. Driscoll Gardens which acts as a gateway into the settlement and forms a buffer between the township, the State Highway and the railway.

Manakau Domain functions poorly as community open space mainly because its location on the west side of State Highway 1 makes it inaccessible and disjointed from the village itself.

In addition to these designated areas of council owned reserve, Manakau boasts distinctive characteristics, with wide grass verges and tree lined streets. These streets provide for an important part of the open space character and amenity to this settlement and could be considered part of the open space network.



Driscoll Gardens

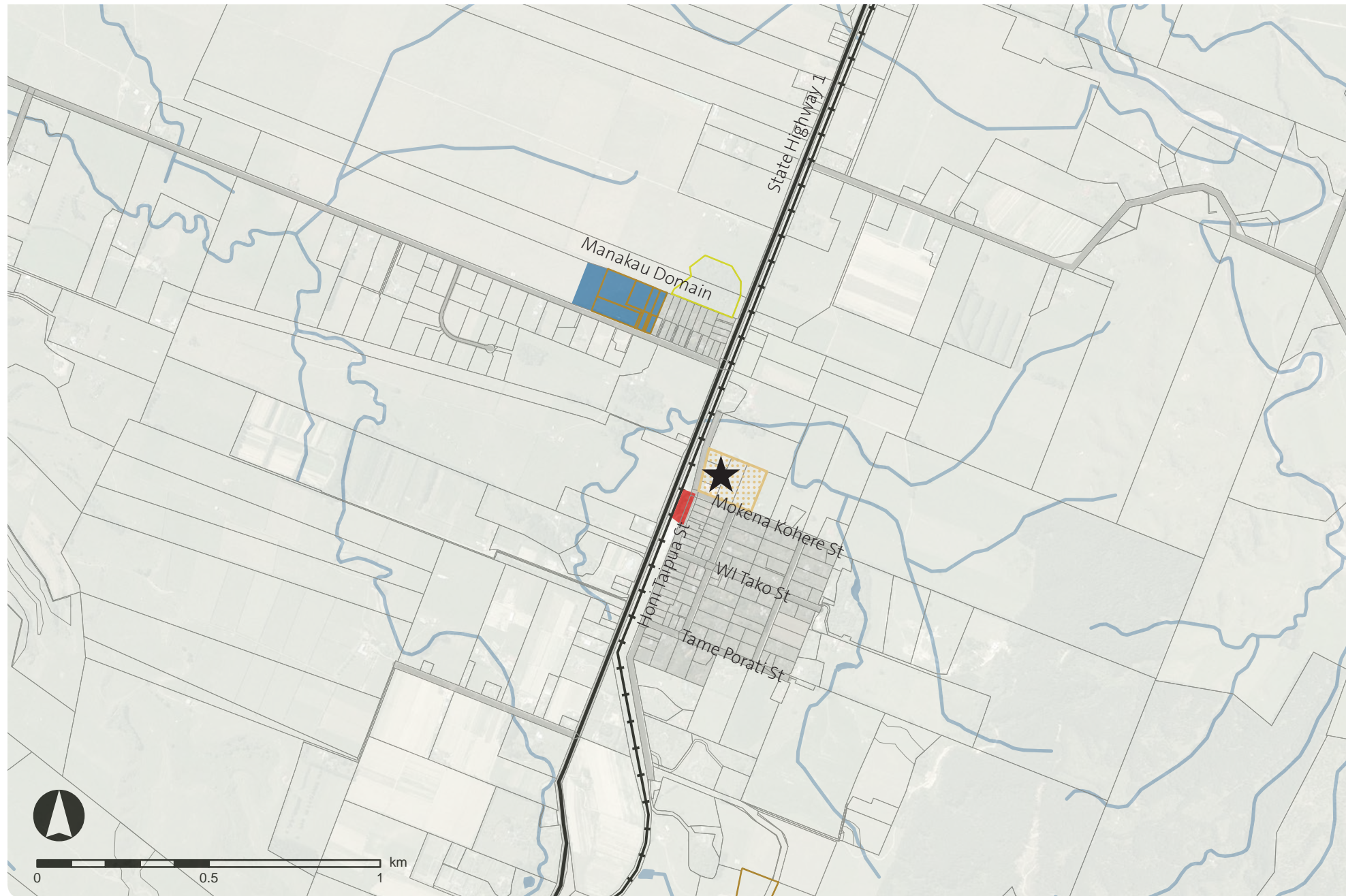


Manakau Domain.



Wide grass verge adjacent to village streets in Manakau.







# Manakau - Open Space Strategy

The Manakau Open Space Strategy and its actions draws from the open space principles and indicates a future vision for a well connected, appropriately enhanced series of open spaces that reinforce Manakau's unique character / sense of place.

## Key outcomes

- » Local streets are a key feature that add to local character and richness of the open space in the settlement.
- » The trunk-line greenway becomes a key north / south walking and cycling corridor on the edge of the settlement.
- » A green-link that follows one of the existing ephemeral streams enables walking connections to the east of the settlement.
- » Further assessment enables greater understanding of the open space and recreational needs and demands of the Manakau Community.
- » New open space that is well connected to the existing settlement and proposed growth area provides a shared sports and recreational facility with the local school and community.



A sports facility could be developed in Manakau in connection with the local school in a similar way to the Playford Park - Waiopahu College model.



A walkway along the edge of the settlement could be incorporated in a similar way to this walkway in Foxton Beach.



Protect scale and character of existing street network within Manakau.



STRATEGY ACTIONS	
ACTION	VALUE
Promote cycling opportunities along or adjacent to SH1.	H
Consider opportunities to provide further open space on east side of SH1. This could be in partnership with school.	H
Ensure that open space treatment and landscaping maintains the village character of the settlement.	M
Enhance connections between Manakau and the Tararua Ranges.	M
Investigate wider recreational, ecological and amenity open space opportunities to secure open space that serves the local community.	M
Work with the local school to provide a range of complimentary open space and recreation opportunities.	M
Develop pedestrian green-links which provide short cuts between streets.	L
Enhance key gateways and threshold into and out of Manakau by incorporating the character of the village.	L

ACTIONS FOR COUNCIL OWNED RESERVES	
ACTION	VALUE
A. Integrate amenity space with trunk-line greenway. Consider opportunities for extending Driscoll Reserve.	H
B. Review the need and future of Manakau Domain including the option of relocating this open space closer to the village settlement.	M





# Mangahao - Existing Open Space

## Key characteristics

Mangahao is a small settlement located in the north of the Horowhenua District at the base of the Tararua Ranges about 3.5 km east of Shannon.

The settlement is located on a terrace above the Mangahao Stream and was originally built as a settlement to house the staff working on the power station which was built in 1924 and is one of New Zealand's oldest power stations.

There is a distinctive separation between the settlement and the power station / Mangahao Reserve because of the changes in level and existing vegetation. Both the settlement and reserve retain a character of being nestled within the foothills of the Tararua Ranges.

## Successfulness of the existing open space

Mangahao Reserve is one of main areas of open space at Mangahao. It contains a white water canoe park that is considered to be of world class quality. The reserve scores high on natural and man made features and feels like a New Zealand tourist destination as well as a local provision for extreme sports.

The area located below the power station, has been developed into a picnic area and small nature park. However, the extreme changes in water level that result from the adjacent hydro scheme make this area unsuitable for swimming.

Within the village itself there is an open space area that includes a tennis court.



Whitewater kayaking facility at Mangahao.



Picnic area adjacent to power station and whitewater kayaking facility.

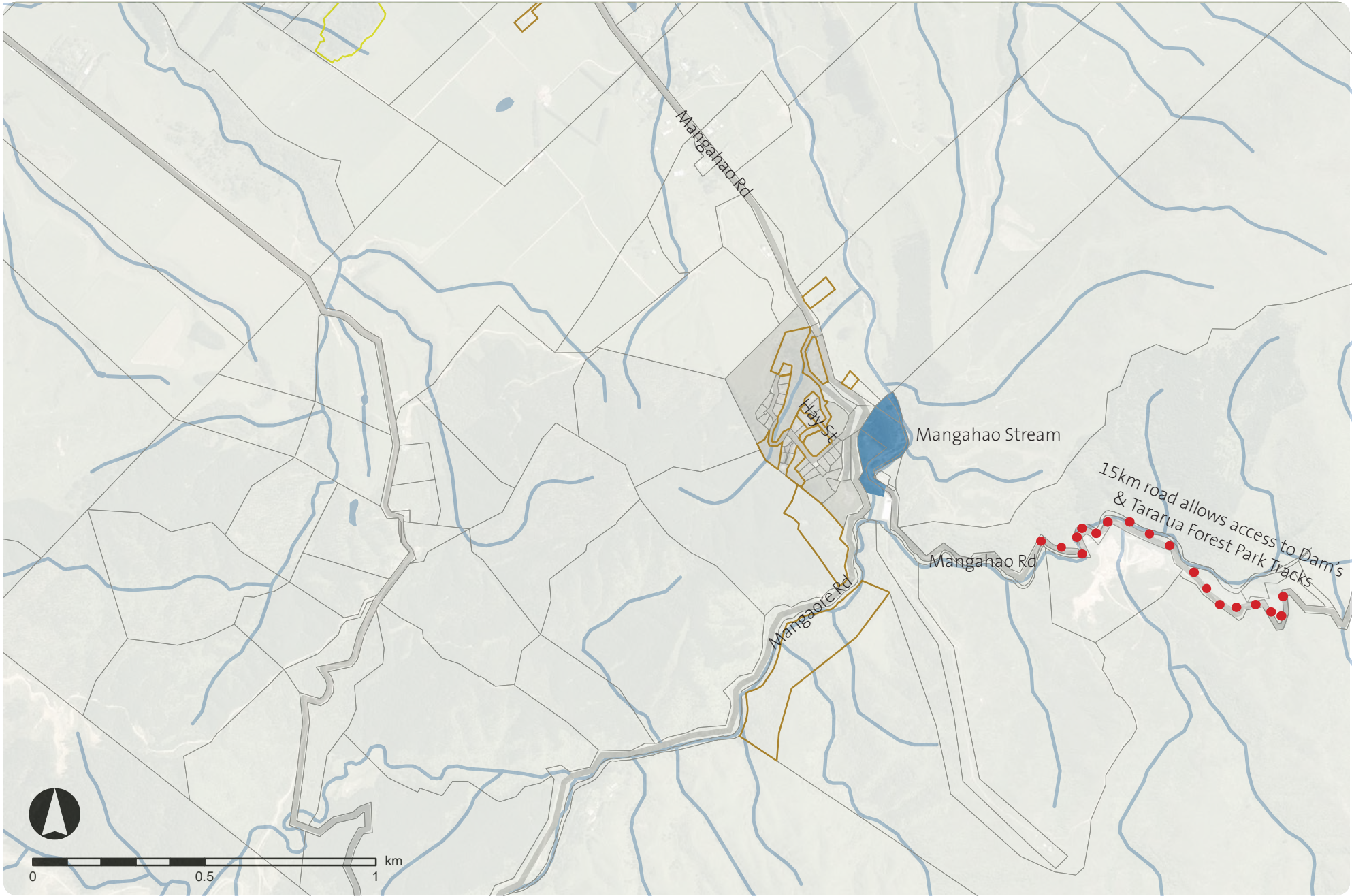


Whitewater kayaking facility at Mangahao.



Whitewater kayaking facility at Mangahao.







## Mangahao - Open Space Strategy

The Mangahao Open Space Strategy and its actions seeks to indicate a future vision for enhancing Mangahao as a significant recreational hub and gateway to the Tararua Ranges.

### Key outcomes

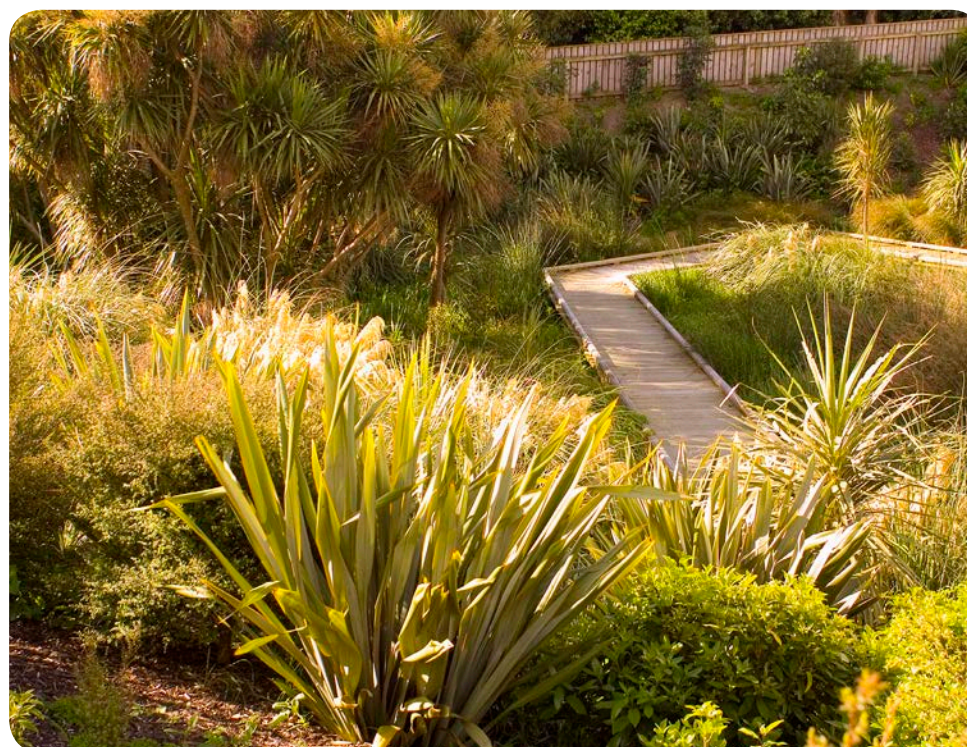
- » A walkway follows Mangahao Road with views across to the Mangahao River.
- » Mangahao White Water Facility is known as a hub for white water kayaking.
- » Mangahao is known as a gateway to the Tararua Ranges and access to the Te Araroa walkway.
- » Safe, accessible and legible routes (green-links) provide access from the settlement to the Mangahao White Water facility.
- » Existing gullies and flow paths within open spaces and reserves are used to create swales allowing natural treatment of stormwater.
- » An open space and recreational needs assessment influences the future use of individual reserves within Mangahao.



Mountain biking facilities at Mangahao are further developed. Image source: <http://www.lakewanaka.co.nz/new-zealand/TradeGalleryPopup/index.cfm?categoryID=1&photographID=9>.



Te Araroa walkway, Tararua Ranges. Image source: [www.teararoa.org.nz](http://www.teararoa.org.nz)

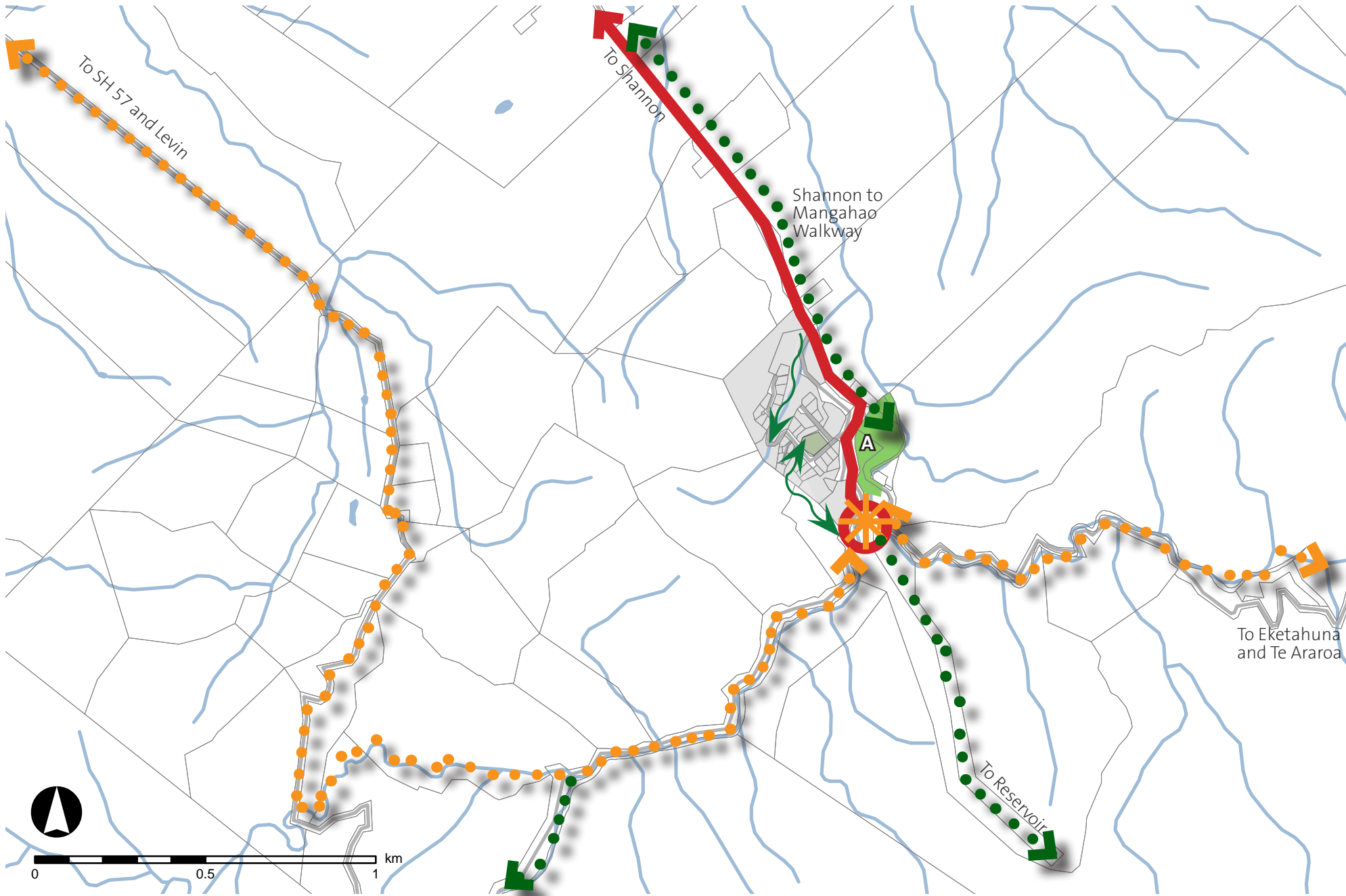


Short local walkways provide opportunities for passive recreation.



White water kayaking facilities at Mangahao are further developed. Image source: <http://www.photosot.com/kayaking/>.





STRATEGY ACTION	
ACTION	VALUE
Investigate opportunities for local short walkways and passive recreation areas.	H
Improve cycling and walking connections between Mangahao and Shannon.	H
Enhance connections between Mangahao and Te Araroa walkway.	H
Investigate developing further outdoor recreation opportunities at Mangahao.	M
Ensure that Mangahao remains a focal point for a range of outdoor activities.	M
Investigate wider recreational, ecological and amenity open space opportunities to secure open space that serves the local community.	M
Develop pedestrian green-links which provide short cuts between the settlement and the reserve/river.	L
Investigate opportunities to use existing gullies and flow paths within reserves and open spaces to promote natural treatment of stormwater.	L

ACTIONS FOR COUNCIL OWNED RESERVES	
ACTION	VALUE
A. Investigate the recreation and tourism opportunities of developing Mangahao to be a recreation and open space focal point.	M





## Ohau - Existing Open Space

### Key characteristics

Ohau is a small rural settlement that straddles State Highway 1 to the south of Levin. The settlement is spread-out with many of the dwellings built on large sections and interspersed with paddocks. More recently the Ohau settlement has been extended to the south with the introduction of vineyards on both sides of the State Highway.

Ohau has a primary school with the nearest high schools located in Levin.

The large areas of farmland and lack of built up areas enables Ohau to enjoy relatively uninterrupted views of the Tararua Ranges.

The Horowhenua Development Plan demonstrates significant proposed growth all the way around the existing Ohau settlement. Some of these future growth areas consist of existing natural areas that are recognised natural habitats.



Ohau Domain with Tararua Ranges in background.

### Successfulness of the existing open space

Ohau's primary area of open space is Ohau Domain which is located on the east side of State Highway 1. This is comprised of a sports field and associated buildings. The Domain is well connected to the settlement and forms a key gateway into the settlement from State Highway 1.

South of the settlement where State Highway 1, trunk-line and Ohau River intersect is a small informal council owned reserve with access to the Ohau River. Pedestrian and cycling access to this reserve from the settlement is unclear other than along State Highway 1.

Lake Papaitonga is just 2km north west of the settlement. However access to and from this significant open space is unclear.



Parikawau Reserve, Ohau.



Lake Papaitonga, just 2km northwest from the centre of Ohau settlement.







# Ohau - Open Space Strategy

The Ohau Open Space Strategy and its actions indicates a future vision for Ohau and how this settlement and its growth connects to the Ohau River and Lake Papaitonga.

## Key outcomes

- » Sports and recreational open space within the centre of Ohau is shared between the local school and community.
- » Ohau River walkway provides passive recreation for the settlements residents and visitors and provides a key connection between the coast and the ranges.
- » Safe, accessible and legible routes (green-links) provides pedestrian shortcuts throughout the existing settlement and proposed growth area.
- » Access between the Ohau and Lake Papaitonga is enhanced encouraging pedestrian and cycling connections between lake and settlement.
- » The trunk-line greenway provides a north / south pedestrian and cycle connection through the settlement.
- » Low impact stormwater management practices (such swales and rain gardens) are developed within open spaces, reserves and road berms to provide options for managing localised stormwater.
- » An open space and recreational needs assessment influences the future use of individual reserves within Ohau.

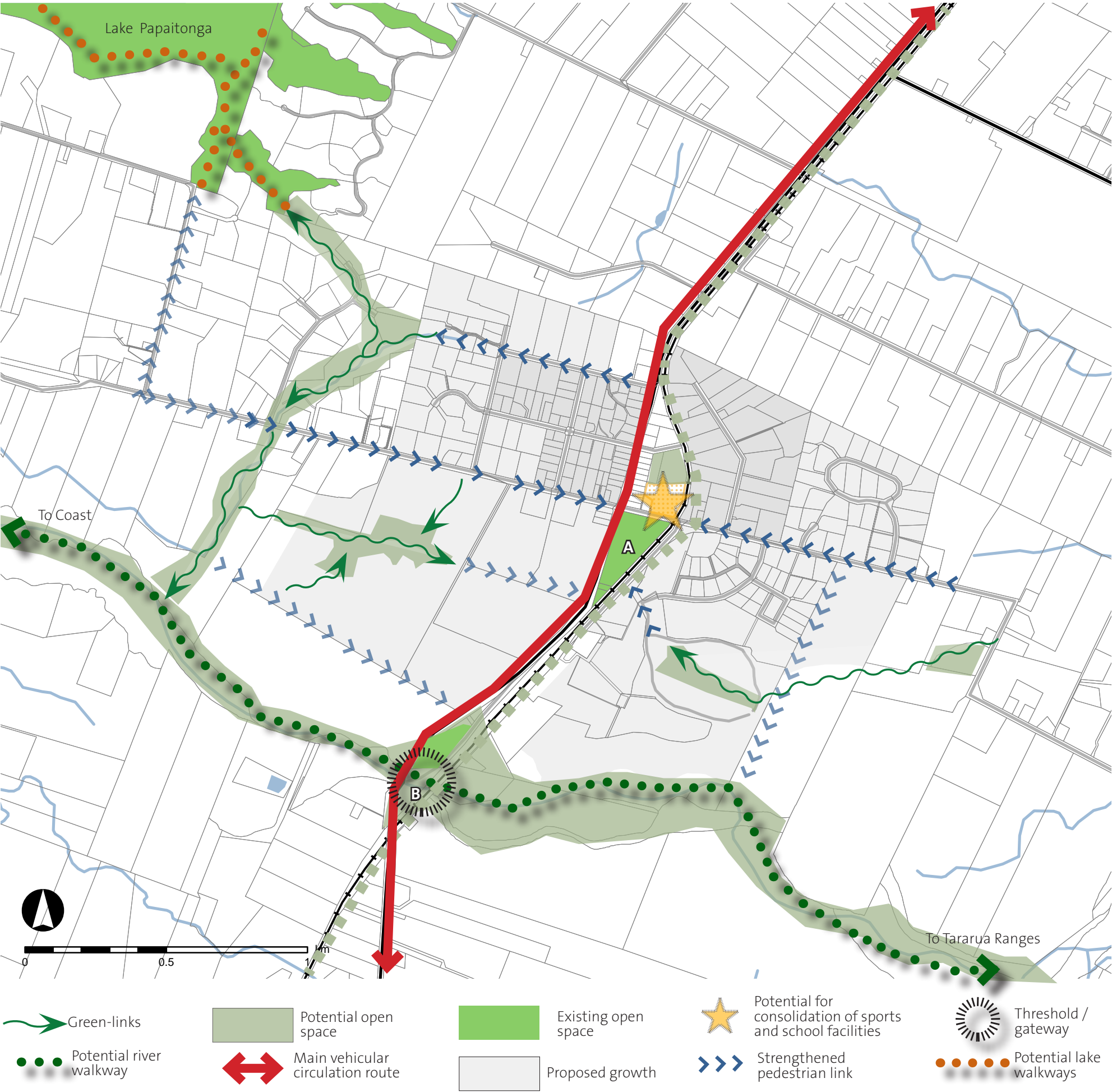


Connections to Lake Papaitonga will be enhanced.



Example of green-link / connection.





STRATEGY ACTION	
ACTION	VALUE
Seek to create a continuous walkway along the Ohau River connecting the Tararuas to the coast and that builds on the existing reserves and open spaces located along the Ohau River.	H
Investigate opportunities for a greenway cycle/walking route along the main trunk-line corridor.	H
Improve access to and from Papaitonga Lake Reserve.	H
Work with local school to provide a range of complimentary open space and recreation opportunities.	H
Identify opportunities and develop low impact stormwater management practices (such as water retention basins, swales and rain gardens) within reserves and open spaces where they can help manage localised stormwater and add to the overall open space amenity value.	M
Integrate and connect new subdivisions/growth areas into a well connected and legible open space network.	M
Instigate opportunities for green-links that serve as pedestrian short cuts within the settlement.	L
Enhance gateways and threshold into and out of Ohau.	L

ACTIONS FOR COUNCIL OWNED RESERVES	
ACTION	VALUE
A. Work in partnership with the school and community groups to maximise functionality of domain to provide a mixed use/multi-functional open space.	M
B. Create key gateway to Ohau where the river, the state highway and the trunk-line meet.	L



# Lake Papaitonga – Waiwiri Stream Ecological Network

This network comprises Lake Papaitonga and the Waiwiri Stream and associated tributaries and builds on a number of existing ecological initiatives in this area. Lake Papaitonga is recognised as one of the best remaining lowland wetlands in the North Island and recent land acquisitions by the Department of Conservation have aimed at ensuring the long-term hydrological health of this coastal dune lake. Large portions of the Waiwiri Stream downstream of Lake Papaitonga have also been restored through fencing and riparian planting work undertaken by Horizons Regional Council and landowners and the stream has been identified as a site where riparian restoration would be most advantageous.

The Muhunoa Coastal Swamp, part of a recent coastal subdivision, is also included within the network given its close proximity to the Waiwiri Stream.

Future linkages to this network could include Lake Waitaha and the Footprint Wetland, remnants of much larger dune lake and wetland systems in the area. Both these wetlands have been the subject of fencing and planting initiatives undertaken by Horizons Regional Council and the landowners. Although located just outside of this Network, a number of other ecological features are nearby, including the Okotore Lagoon/Rakauhama Wetland within the sand dunes just south of Hokio Beach settlement, the mixed broadleaf, Podocarps forest of the Hokio Sand Road remnants, the kanuka scrub on sand ridge of the Levin Sewage Plant Scrub, the titoki pukatea treeland of the Muhunoa West Road Remnant.



Lake Papaitonga

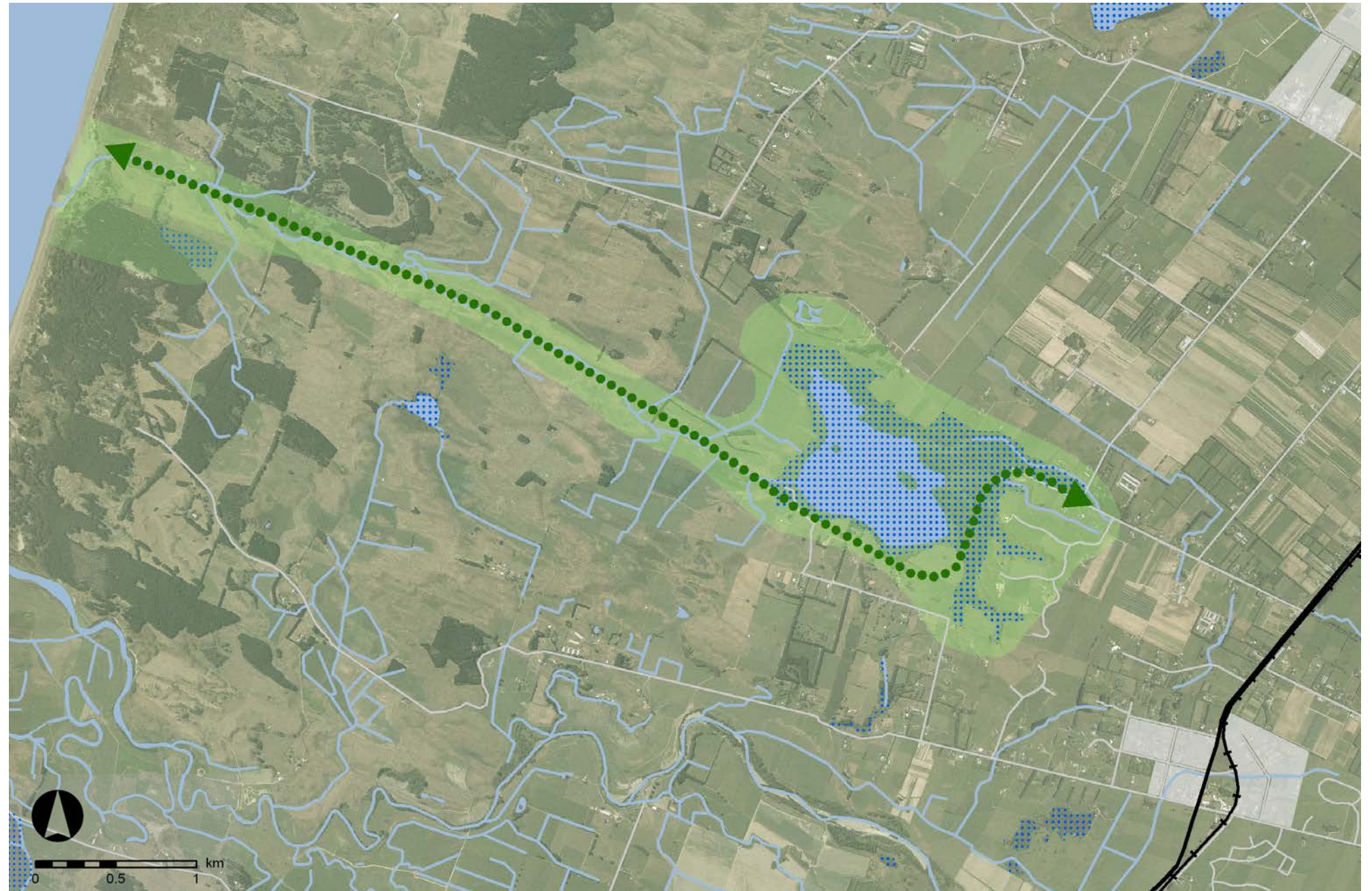
- council\_property
- natural\_habitats
- conservation\_units
- Wetlands



## Lake Papaitonga – Waiwiri Stream Ecological Network

Ongoing threats in this network include the impaired water quality of the Waiwiri Stream, ongoing drainage and waterbody maintenance, land conversion and threats from plant pests and stock grazing. There is likely to be further pressure from coastal subdivision which may provide opportunities for ecological enhancements or further degradation along the Waiwiri Stream and around Lake Papaitonga.

The long-term outcome for this network is to manage water quality, including run-off and lake water levels, and to provide a continuous ecological connection by building on the existing riparian fencing and planting initiatives between Lake Papaitonga and the outlet of the Waiwiri Stream.



This plan shows the potential Lake Papaitonga - Waiwiri Stream Ecological Network

Potential ecological network



## Ohau River Dune Lakes and Ohau Estuary Ecological Network

This network comprises the series of wetlands and dune lakes south of the mouth of the Ohau River and extends to include the Ohau River oxbow and the Ohau River up to State Highway 1. The Ohau Estuary is a Recommended Area for Protection (RAP) for its indigenous saltmarsh vegetation and the Ohau River Dune Lakes and Te Hakari Wetland are recognised as being of high ecological value and are the subject of a number of ecological restoration initiatives being led by the Tahamata Trustees, including a long research project into water quality issues within and surrounding the wetlands.

The Ohau River is one of a small number of braided rivers in the District and contains large areas of forested riparian margins between State Highway 1 and the Ohau Estuary. The estuary is also identified as providing important freshwater fish spawning habitat.

The Ohau River Dune Lakes are largely fenced with no stock access, restoration planting and plant and animal pest control undertaken. This combination of initiatives continues to improve their ecological values. Ongoing threats remain from hydrological changes through drainage, reduced water quality from surrounding land uses, invasive aquatic plant and animal pests, stock access and the spread of raupo infilling the lakes and out-competing other wetland species.

Large parts of the Ohau River Dune Lakes and Estuary Network already provide for public access, with future initiatives underway as part of the restoration of the area by the Tahamata Trust. Public access along the Ohau River at this point is currently restricted.

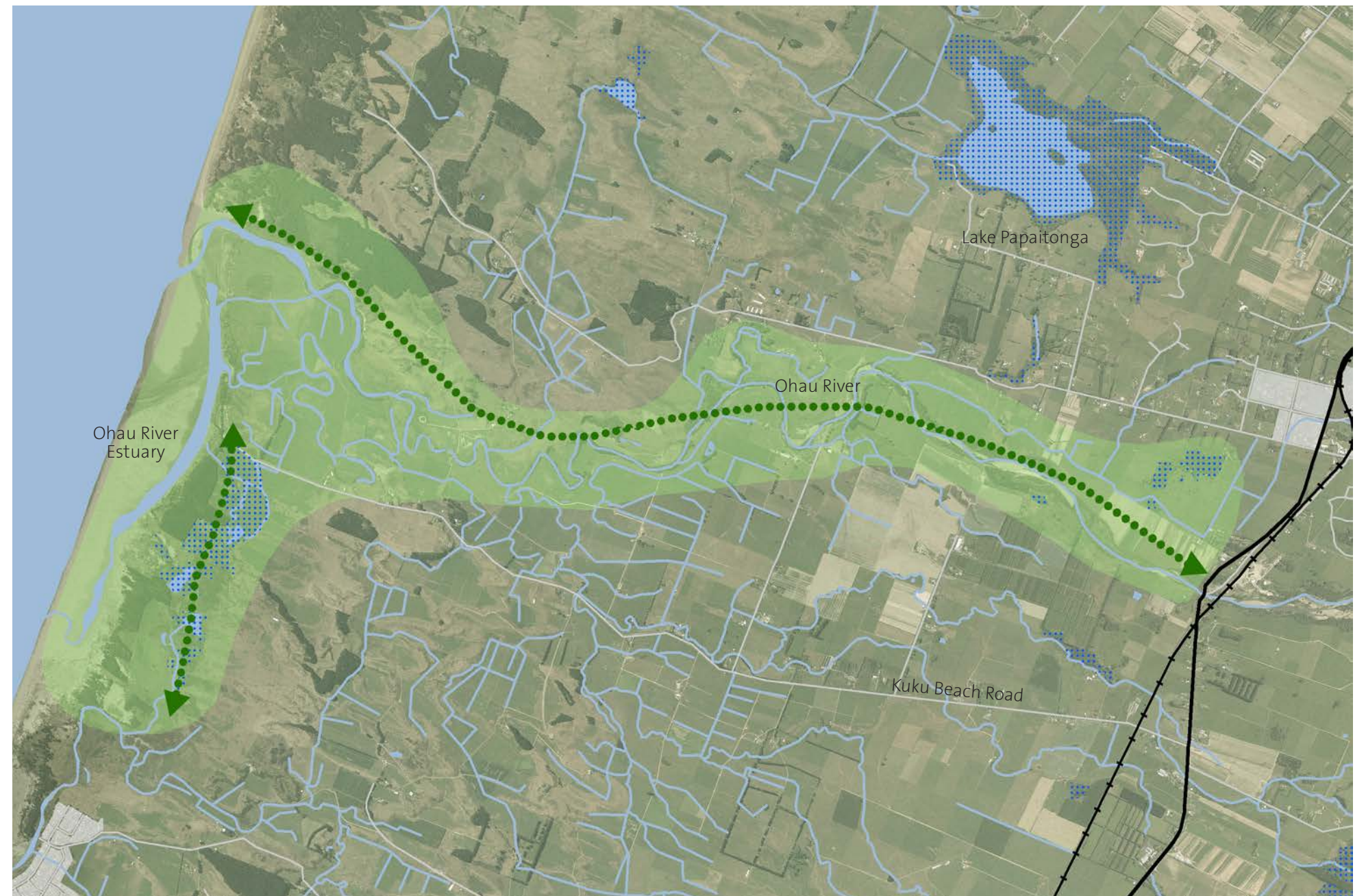


Ohau River Estuary



## Ohau River Dune Lakes and Ohau Estuary Ecological Network

The long-term outcome for this network is to provide a continuous ecological network along both sides of the Ohau River to the coast, including the coastal dune lakes, through building on existing riparian and wetland values and restoration initiatives and new restoration and recreation opportunities.



This plan shows the potential Ohau River Dune Lakes and Ohau Eastuary Ecological Network

Potential ecological network



# Shannon - Existing Open Space

## Key characteristics

Shannon is a rural service town located in the north-east of the Horowhenua district. Shannon is positioned on the main trunk-line and State Highway 57. These transport links have been significant to the historical and current development of the town. The centre of Shannon is the convergence of the rail and road, where it supports a small commercial and civic area (including a library, service centre and hall).

## Successfulness of the existing open space:

Te Maire Park is a linear open space positioned between State Highway 57 and the railway station and supports important cultural and heritage values. There is a primary school located one block from the town centre and the school pool is open for the community to use during the summer months. Year 9 – 13 students travel to either Levin, Foxton or Palmerston North to attend a secondary school.

The Tararua Ranges and Forest Park are to the east of Shannon. The foothills are accessible from Shannon via Mangahao Road; a 4WD drive track which follows the Mangaore Stream and its head waters up to the Mangahao power station, three water dam reservoirs and 6 ha of Council reserve land. The reserve is well known for the White Water Park, picnicking and is an entry for mountain bikers to head up to the dams. In between the township and the foothills there are a number of identified natural habitats, these being Kintail Bush and Timms Gully.

There is considered to be sufficient area of open space within Shannon, to provide for both organised sports and informal recreation. Hyde Park provides an informal reserve space and is situated centrally within the residential area and within walking distance from the school, shops and the dedicated sports fields at the Domain. Moynihan Park is a mixed-use facility and used for formal and informal recreation, but lies on the eastern periphery of the town and is not as central as the other reserves. The future low density residential development is provided for to the north-east of the township and in accordance with Shannon's Structure Plan an open space buffer will need to be provided on the rural interface.



Shannon Domain.



Shannon Domain rugby field.



Te, Maire Park, Shannon.



Hyde Play Park, Shannon.







# Shannon - Open Space Strategy

The Shannon Open Space Strategy and its actions demonstrates a future vision for Shannon's open spaces as a multi-functional and well connected network of streets, walkways and reserves.

## Key outcomes

- » Shannon Domain remains a focal point for active recreation.
- » Visual access, rather than physical access, is enhanced along the Mangahao River.
- » A green-link provides an alternative pedestrian route between Shannon and Mangahao. This also provides access through the QEII covenant land to the southeast of the settlement.
- » The trunk-line greenway provides a west / east pedestrian and cycle connection through the settlement.
- » Te Maire Park is better connected to the main commercial activities along State Highway 57 and will become a key transition and threshold between the railway station and the settlement. This also forms part of the trunk-line greenway.
- » Open spaces are redesigned with community involvement and reflect local character / distinctness.
- » Footpaths and streetscapes are improved and enhanced with the emphasis on the pedestrian and cyclist.
- » Low impact stormwater management practices (such swales and rain gardens) are developed within open spaces, reserves and road berms to provide options for managing localised stormwater.
- » An open space and recreational needs assessment influences the future use of individual reserves within Shannon.



Walkways and tracks with clear and integrated directional signage, such as this one at Driscoll Garden in Manakau, help improve peoples understanding of the place and can help improve local character.



Visual access to natural environments can sometimes be as valuable as physically accessing them. Benches or picnic areas can help indicate appropriate places to stop and enjoy the views. Image of informal bench on Waiheke Island.