

QUEEN ELIZABETH PARK CYCLING TRACKS CONCEPT PLAN



Prepared by The Kennett Brothers

February 2008

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EXECUTIVE SUMMARY

Over the last 10 years, mountain biking and cycling in general have boomed. Bicycle imports to New Zealand have doubled and hundreds of new cycling tracks have been developed around the country. Well designed tracks and paths have become significant recreational assets used by local residents and tourists.

The potential for cycling tracks and a cycling commuter route in Queen Elizabeth Park has been clearly identified in past and present management plans. Development of these opportunities is supported by the Friends of Queen Elizabeth Park and the Kapiti Coast District Council (KCDC).

Three distinct opportunities are outlined in this report:

1. An easy recreational mountain bike track
2. A cycle commuter route
3. Links between the mountain bike track and the commuter route.

Queen Elizabeth Park has the necessary attributes to provide the best family friendly mountain bike track in the lower North Island. It is one of the few sizeable areas of flat public land in the Wellington region. It can best be compared with Bottle Lake Forest Park in Christchurch, which receives 750,000 visits per year (walkers, cyclists and equestrians). All the tracks at Bottle Lake are built on flat sand-dune country and are physically and technically easy on the rider. Queen Elizabeth Park has the potential to emulate Bottle Lake and become a reknowned mountain bike destination.

Queen Elizabeth Park has also been identified as the only possible location for a cycle commuter path between Paekakariki and Raumati/Paraparaumu. Commuting cyclists (those that dare) currently ride on State Highway 1. The volume and speed of highway traffic deters most people from cycling this route. A dedicated cycle commuter route is supported by several policy documents, including the *Wellington Regional Land Transport Strategy*, the *KCDC Cycleways, Walkways, Bridleways Strategy*, and the *Queen Elizabeth Park Management Plan*.

A number of links between the mountain bike track and the cycle commuter route are planned to provide a series of loop circuits suitable for beginners and family groups.

It is proposed that walkers and runners would also use the new mountain bike track and cycling commuter route, thus maximising the recreation potential of this unique regional park.

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1. INTRODUCTION

The Kennett Brothers were commissioned by Greater Wellington in November 2007 to provide a plan for cycling tracks at Queen Elizabeth Park.

Greater Wellington and the Friends of Queen Elizabeth Park have identified the park as a possible location for recreational mountain biking tracks and a cycle commuting link between Paekakariki and Raumati.

The Kennett Brothers have ridden in every New Zealand mountain bike park and assisted in the design of several parks. Upon assessing the Queen Elizabeth Park site, we conclude that parts of it are ideally suited for recreational mountain biking tracks.

Description of Queen Elizabeth Park

Queen Elizabeth Park is 638 hectares in size – 4.5 km long and roughly 1.5 km wide. It is owned by the Department of Conservation and vested with Greater Wellington for management. At present, 400 hectares of the park is managed for farming, and provides limited to no public access.

The park's unique terrain is dominated by dunes and includes several wetland areas and streams. In certain places, these features present challenges for building easy and sustainable tracks.





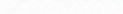

















Queen Elizabeth Park is also unique because of the wide range of activities enjoyed by the public. Apart from walking, cycling and running, other activities include horse riding, trips on restored trams, flying model aeroplanes, and picnics by the beach.

Another important activity undertaken by various community groups at many sites within the park is tree planting and wetland restoration. However, farming beef cattle remains the dominant activity within this park.

The park can be accessed from three main entrances located at Paekakariki, MacKays Crossing and Raumati South. The park has a good infrastructure of toilets and water supply for visitors. In the near future a link is likely to be created from the Akatarawas, through Whareroa Farm, to Queen Elizabeth Park. This will make the park a significant recreation hub.

A map of the existing tracks in the park is shown overleaf.

LEGEND

- Park boundary 
 - Sealed road 
 - Gravel road 
 - Existing track 
 - Railway/tram line 
 - Trees and coastal shrubland 
 - Open areas 
 - Pond or water body 
 - Building 
- Future wetland 
 - Future riparian planting 
 - Future tree planting 
- Parking 
 - Information point 
 - Toilets 
 - Picnic area 
 - Walking track 
 - Mountain biking 
 - Horse riding 
 - Camping 
 - Swimming 
 - Wildlife habitat 



Map A
Existing Tracks
Queen Elizabeth Park

Strengths and Opportunities

Visitor numbers

Queen Elizabeth Park is the most popular of Greater Wellington's regional parks. It attracts over 400,000 visits per year.

Location

Queen Elizabeth Park is perfectly located to provide a cycle commuter link between Paekakariki and Raumati/Paraparaumu. Its location also means that many recreational visitors to the park live within easy cycling distance.

Queen Elizabeth Park will also become a stronger recreation hub when a link through Whareroa Farm Park is developed.

Variety of activities

The range of recreational activities makes Queen Elizabeth Park a good location for families or social groups made up of people seeking different activities.

Existing infrastructure

Queen Elizabeth Park already contains well-designed toilets, car parking areas and picnic areas. This makes it an optimal location for larger groups of visitors.

Gentle terrain

Large areas of the park have flat or gently rolling terrain. This presents an opportunity to develop tracks that suit all levels of ability, including beginners and family groups. Good tracks for these types of cyclists are lacking in the Wellington region.

Existing roads and tracks

The park contains approximately 3 km of sealed roads, 6 km of gravelled farm roads, several kilometres of farm tracks and dozens of recreational tracks. Some of these could be used to link the proposed cycling tracks or as part of the main cycling tracks themselves.

Tree planting

There is potential for various voluntary groups to plant trees in the park. This would not only improve the recreation setting, but also increase community support for the park.

Weaknesses and Threats

Erosion

The soils at Queen Elizabeth Park are largely sandy in content and as such have good drainage but poor cohesive strength. There is high potential for erosion on the sandy soils. This report suggests several ways to minimise erosion.

Current track network

The current network of cycling tracks is of limited appeal to most cyclists as it contains steep and/or sandy sections that are difficult to ride. These obstacles restrict local use of the park by cyclists.

Lack of trees

The proposed cycle routes are mostly on farmland, which is a relatively blank and boring landscape. Forest is the preferred recreation setting for mountain biking. Trees provide shelter from wind and sun, and enhance the sense of movement that is sought by most cyclists. Trees also mitigate erosion and sequester carbon.

Cattle

It can be difficult to avoid cycling through cattle excrement on tracks that are regularly used by stock. Excrement will catch in tyres and flick up at the rider, or following riders.

Cattle also damage tracks and trees and are causing erosion in the dune areas. Stock levels have been greatly reduced in the southern third of the park, yet erosion 'blowouts' continue to develop.

Gates and fences

There is the possibility that visitors will leave gates open or damage fences while crossing them incorrectly. This risk can be mitigated with the construction of cyclists' cattle stops as used around the country, or the areas that are opened to the public could be retired from farming.

Note: Two cyclists cattle stops have been successfully trialled in the southern third of the park where stock levels are low. The northern farm manager is reluctant to use them in his heavily stocked areas.

Equestrians

Bicycles can spook horses that are not used to them. Horses can also erode tracks, unless the tracks are built to a high standard. Horses would not be compatible with the cycle commuter route, although overseas experience suggests that a horse track beside the commuter route would work well.



PHOTO: A cyclists' cattle stop in Queen Elizabeth Park.

Existing Cycling Routes

All of the existing opportunities for cyclists in Queen Elizabeth Park are listed below. None of these opportunities have been built with cyclists in mind and consequently they do not have the necessary attributes to make them very appealing.

The Inland Track

Grade 3, 20–30 minutes, 3.8 km

This ‘intermediate’ track runs the length of the prominent coastal dunes. Although it is fun for fit cyclists, it is too steep (up to 26%) in places for very young/old/unfit cyclists.



PHOTO: Steep hills on the Inland Track are unrideable for many cyclists.

The Coastal Track

Grade 3, 20–30 minutes, 3.2 km

This ‘intermediate’ track also runs the length of the prominent coastal dunes. Once again, this track is too steep (up to 25%) and sandy in places for very young/old/unfit cyclists.

Whareroa Road

Grade 1, 10 minutes, 2 km

This sealed public road runs from MacKays Crossing to Whareroa Beach.

Whareroa Stream Track

Grade 1+, 10–15 minutes, 1.8 km

The recently completed Whareroa Stream Track provides an excellent opportunity for beginner cyclists. It is flat and wide with a good solid surface and scenic values that

will improve as the streamside plantings develop. There are several gates, however, that cyclists have to stop at and this detracts from the enjoyment of the ride.



PHOTO: The Whareroa Track meets international easy track standards.

Whareroa Beach

Grade 1+, variable time and distance

During low tide, cyclists can ride along the beach. Some riders would be reluctant to do this as salt and sand damage bicycles. During high tide, this route is unrideable.

The existing track network would be greatly enhanced by building the cycle tracks proposed in the 2006 *Queen Elizabeth Park Management Plan*. This concept plan builds upon the management plan by refining the suggested routes and detailing the design elements of highly popular cycling tracks.

Queen Elizabeth Park has the perfect terrain for building tracks for the 'silent majority' of recreational cyclists (children, retired people, beginners and generally less confident cyclists). The flat and gentler inland dunes are suitable for 'easy' tracks as defined by the International Mountain Bike Association (IMBA) (see Appendix A). This would make the park a popular destination for a section of recreational cyclists who are generally not well catered for in the hilly Wellington region.

For details on the proposed tracks, refer to section 5. Proposed Tracks (page 18).

2. RECREATION OPPORTUNITIES AND DEMANDS

The Wellington region is well endowed with outdoor recreation settings – rivers, hills, forests, mountains, and coastline. Recreating in these settings is part of our cultural heritage and most of our reserves are well used. It is worth considering what outdoor activities are most popular nationwide and comparing those with popular activities in Wellington to see if there are recreation opportunities missing in this region.

Recreation in New Zealand

In 2001, New Zealand adults participated in the following outdoor activities in the previous 12 months (source: SPARC). Figures for the Wellington region are shown in the right-hand column:

	<u>New Zealand</u>	<u>Wellington Region</u>
Walking	72%	73%
Swimming	36%	37%
Fishing	25%	16%
Recreational cycling *	15%	15%
Running/jogging	14%	16%
Tramping	12%	11%
Mountain biking	6%	10%
Shooting	6%	5%
Horse riding	5%	5%

* Includes on-road and off-road recreational cycling.

The figures for New Zealand youth showed that they had far less interest in walking and tramping.

Trends in Cycling

Bicycle sales over the last seven years have doubled. They are now at record high levels. Excluding children's bikes and BMXs, bicycle imports since 2001 have been:

2001: 117,000
2002: 163,600
2003: 205,100
2004: 251,500
2005: 208,800
2006: 229,200
2007: 246,500

One of the strong trends in mountain biking has been the worldwide growth of mountain bike parks. New Zealand's first mountain bike park was started in Rotorua in the mid 1990s. By 2008, there were over 40 mountain bike parks scattered between Invercargill and Whangarei, as well as many 'stand-alone' purpose-built tracks.

3. THE NEED FOR NEW TRACKS

The previous section shows that there is considerable demand for outdoor recreation opportunities in the Wellington region. Three of the most popular activities in the Wellington region are walking, cycling and running. It is proposed that the new cycling tracks also be open to walkers and runners.

The need to develop tracks in Queen Elizabeth Park is mentioned in various documents. The most relevant are listed below.

The **Queen Elizabeth Park Management Plan** states, amongst its goals and proposals:

On page 16, that it should *“advocate for and encourage greater access to the park by public transport and for non-vehicular access (e.g. walkers, mountain bikers, horse riders).”*

On page 17, that it plans to *“offer varied opportunities for park users by providing multiple use tracks and facilities where possible and appropriate.”*

On page 35, that when *“developing new tracks”*, it should *“give priority to:*

- *Developing links to other important recreational areas.*
- *Developing circuits and loop tracks.*
- *Developing tracks which encourage complimentary and multiple use’s within the park.”*

On page 37, that *“GW will work with KCDC to develop links and cycle ways which incorporate tracks within QEP, where appropriate.”*

On page 51, that *“several new tracks are proposed for Queen Elizabeth Park. These include, the upgrading and extension of the Inland Track from Tilley Rd to Popular Ave into a horse, bike and possible non motorised commuter track between Paekakariki and Raumati. A second track which connects the Wainui Recreation Area to Mackay’s Crossing, through the leased farm block out to Poplar Avenue has also been proposed.”*

The **KCDC – Cycleways, Walkways and Bridleways Strategy** states:

On page i, that *“[a] significant challenge is to provide better linkages for cyclists, walkers and horse-riders between the District’s four main urban areas of Paekakariki, Raumati/Paraparaumu, Waikanae and Otaki.”*

On page 6, that *“there are differences in the needs of users and these need to be recognised and provided for ...*

commuter cyclists vs. recreational cyclists vs. cycle tourists vs. mountain bikers vs. road cyclists vs. children cycling to school.”

On page 9, that *“the desired outcomes of this Strategy are [that] cycling... in the Kapiti Coast district [will become a] viable, safe, easy, direct and enjoyable transport and recreation option... [and that a] pleasant, connected and comprehensive cycling... environment [will be] developed.”*

The Wellington Regional Land Transport Strategy states:

On page 6, that the vision for the organisation is the following: *“In urban areas there will be viable alternatives to travel by private car for most trips. People will generally walk or cycle for short and medium length trips. Pedestrian and cycling networks will be convenient, safe and pleasant to use.”*

On page 24, that a key Land Transport outcome, is *“increased mode share for pedestrians and cyclists”*.

On page 29, that it *“supports continuous development of the cycling network and integration with other modes.”*

Government Policy

The need for cycle commuting routes generally is supported by numerous policy documents at local and national government levels. These documents make the following points:

- New Zealanders have increasingly sedentary lifestyles, which has led to significant health problems associated with obesity, diabetes, heart disease and cancer. Exercise by cycling reduces these health problems.
- Increasing motor vehicle use has led to problems with traffic congestion and road safety. Cycling is an alternative to private motor vehicles.
- As a signatory of the Kyoto Protocol, the Government has a commitment to reducing greenhouse gas emissions. Motorised transport is a significant source of CO², whereas alternatives such as cycling and walking emit no CO².

Potential Users of the Proposed Tracks

The cycle routes proposed for Queen Elizabeth Park would cater for different groups.

Easy Recreational Track

Easy mountain bike tracks appeal to recreational cyclists more than any other type of track. They appeal strongly to family groups, young and old people, and beginner cyclists. As a general rule, no matter what city you visit in New Zealand, the easiest tracks will be the most popular ones. Unlike most of the existing tracks in the Wellington region, an easy track at Queen Elizabeth Park would not present the skill or fitness barriers found on rough or steep tracks.

Cycle Commuter Route

The 2006 Census indicates that the average cycle commuter distance is 6 km. It is 6 km from Paekakariki to Raumati South, and 6 km from Paraparaumu to the centre of Queen Elizabeth Park. The commuter route is therefore likely to cater mostly for cyclists from these towns. However, paths designed for commuters also appeal to recreational users, be they cyclists, runners, walkers, or parents with prams. As such, it is likely that a commuter route will be used by a wide range of visitors, especially as it will enable them to complete a satisfying loop of the park.



PHOTO: Sharing State Highway 1 with large traffic volumes is not an acceptable option for many cyclists.

Poplar Ave roadside path

The south side of Poplar Ave has no footpath and virtually no shoulder to the road. It is unsafe and unpleasant to ride, walk or run along. A new path would be used by current non-motorised road users and would create an essential link between the easy recreational track and the commuter route.



PHOTO: With no shoulder on the side of Poplar Avenue people feel unsafe cycle commuting.

Single Use or Shared Use?

New tracks at Queen Elizabeth Park need not be for cyclists only. Cyclists and walkers share many tracks around the country. The entire Makara Peak Mountain Bike Park in Wellington is open to pedestrians, and they make up about 30% of total visits to the park (with no serious bike/pedestrian collisions to date). Wellington riders, runners and walkers are generally used to sharing tracks. Shared-use tracks also ensure the best use of public funds.

A well graded mountain bike track is equally pleasurable to walk or run on, and provided the gradient is low and corners frequent, cyclists' speeds on the recreational track will average well under 20 km per hour. User conflict is largely about managing expectations. Clear signs stating who the permitted track users are, provide walkers and cyclists with an expectation that they will meet each other, and so when they do, conflict rarely occurs.

We recommend the new tracks at Queen Elizabeth Park be open to walkers, runners and mountain bikers.

Horses

Horses are not allowed on any purpose-built mountain bike tracks in New Zealand. The primary reasons are safety of the horse riders and track damage. On the commuter route, there would also be an issue with people dressed for work or school trying to avoid horse dung.

There is plenty of room for equestrians in Queen Elizabeth Park, but in general we recommend they be catered for on trails separate from the bike tracks. It may work well to have a horse trail running parallel to the commuter route from Poplar Ave to Whareroa Road. This would connect two key horse areas.

Stock

It is preferable that the tracks be fenced off from stock to avoid children being scared by large animals, and to keep the tracks clear of animal faeces. However, this is not essential. There are many farm tracks in New Zealand that are open to mountain bikers. Examples close to cities include, Wellington's Skyline Track, Auckland Regional Council farm parks, Christchurch's Port Hills tracks. These areas have recreational tracks, as opposed to cycle commuting tracks. Stock are not compatible with the commuting path.

Motorised users

The recreational use of trail bikes and other off-road motorised vehicles is prohibited in Queen Elizabeth Park, and in every mountain bike park in New Zealand for reasons of safety, track damage and noise pollution. Motorised recreation would not be suited to the tracks described in this report.

4. MOUNTAIN BIKE TRACKS NATIONWIDE

Whereas traditionally mountain bikers rode on 4WD tracks, old forestry roads and walking tracks, today's riders (particularly younger riders) are more attracted to purpose-built biking tracks, which have the magic element of 'flow' (momentum), which is shared by other sports such as surfing and skiing.

Over the last 10 years, there has been a dramatic increase in purpose-built mountain bike trails worldwide. Three popular mountain biking areas in New Zealand (Woodhill in Auckland, Whakarewarewa in Rotorua and Bottle Lake in Christchurch) all feature a range of tracks designed specifically for cycling, and all attract over 100,000 visits per annum.

There are around 400 designated mountain bike tracks in New Zealand. Approximately half of these are in mountain bike parks and have been purpose built, mostly by volunteers, with assistance from their local councils.

These are some of the more popular mountain bike areas:

Auckland:	Woodhill Forest MTB Park, Puni Family MTB Park, Whitford MTB Park, Hinua MTB Park
Tauranga:	Oropi Grove MTB Park and Summerhill Recreational Farm
Rotorua:	Whakarewarewa Forest
Taupo:	Craters of the Moon
Napier:	Eskdale MTB Park
Wellington:	Makara Peak MTB Park
Nelson:	Hira Forest MTB Park and Fireball Road
Hanmer Springs:	Hanmer MTB Tracks
Christchurch:	Bottle Lake Park, Victoria Park, Port Hills MTB Tracks, McLean Island MTB Area
Wanaka:	Plantation Trail MTB Park
Naseby:	Naseby Forest MTB Trails
Dunedin:	Signal Hill MTB Park
Invercargill:	Sandy Point MTB Park

Case Study 1: Bottle Lake

Three of these popular mountain bike areas (Woodhill, Bottle Lake and Sandy Point) are built on sandy terrain very similar to Queen Elizabeth Park. However, all three are in pine forests. Bottle Lake stands out, as it is currently the most popular mountain bike destination in the country (200,000 visits per year).

Cycling tracks are built at Bottle Lake by the Christchurch City Council. The tracks are all 'easy' standard and can be ridden by absolutely anyone. They are 1200 mm wide and are designed to be fun by having frequent turns and numerous humps and jumps.

All tracks are constructed by laying down Geotextile weed matting, followed by a 100-mm-thick layer of stabilised aggregate (compacted). The track design incorporates the element of 'flow'. This flow is enhanced by the forest setting.

Case Study 2: Tracks through Farmland

Mountain bikers and stock (sheep and cattle) share many tracks in New Zealand. These include:

Auckland: Auckland Regional Council farm parks, including the popular Hinua MTB Park. Manukau City Council's Totara Park has walking and equestrian tracks and currently mountain bike tracks are being built that will also be shared with cattle.

Wellington: The Wellington City Council's Skyline Track passes through areas of farm land grazed with cattle and sheep.

Christchurch: The Christchurch City Council manages areas on the Port Hills that are lightly grazed and have several mountain bike tracks across them.

Accommodating the public on these farmed areas has introduced new management issues. Special cattle stops have been developed so that the public do not damage fences or leave gates open. Signs that explain the farm rules to the public have been erected. Hedges have been grown to give farm accommodation more privacy. Measures such as these have enabled areas to continue being farmed while at the same time giving people improved access to public lands.

Some farmers have even allowed the public access to their private land, under certain conditions. Instances of these include:

Wellington: Long Gully tracks (phone call required)

Kaikoura: Kaikoura Coastal Track (farm tourism venture)

Christchurch: Henry Van Ashe track on Port Hills (free access all year, except during lambing)

Case Study 3: Makara Peak Mountain Bike Park

Makara Peak Mountain Bike Park is situated on regenerating farmland west of Wellington City and was officially opened in 1999.

Since 1998, volunteers have built 28 km of track, planted 30,000 native trees and controlled possums and goats. The Wellington City Council has worked in partnership with the volunteers and provided significant infrastructure such as a car park, a bridge, a toilet, signage and purchase of additional land. The initial infrastructure cost to Wellington City Council was \$200,000 over a two-year period.

The result has been a resounding success. Within 10 years, a failed farm has become one of Wellington's most popular outdoor recreation destinations. Total annual visits are estimated to be around 100,000. The annual **Wellington City Residents Satisfaction Survey** asked:

“Have you used the Mountain Bike Park in Karori in the last 12 months?”

The affirmative response has been:

2002	8%
2003	8%
2004	9%
2005	9%
2006	12%



PHOTO: Volunteers from around the Wellington region have put in tens of thousands of hours work to build tracks and plant seedlings at Makara Peak.

The surprising level of popularity of the Makara Peak Mountain Bike Park is a result of two things – firstly, the growth in recreational cycling, and secondly, the construction of a range of tracks for all skill levels designed specifically for mountain biking. These tracks are frequently changing in direction and gradient as they wind through regenerating native bush. The skill level required is clearly signposted at the start of each track.

It seems reasonable to assume that mountain biking will remain popular for the foreseeable future and that facilities designed and built specifically to cater for that activity will remain under considerable demand.

Skills Area

Traditional walking/biking tracks are clearly popular for people aged between 30 and 60 (they make up 81% of visitors at Belmont Regional Park). However, young people are not as attracted to them. This may be because young people are less inclined to exercise. SPARC research indicates that young people’s interest in active leisure

activities fell significantly between 1997 and 2001 (while remaining unchanged for adults). However, the popularity of the BikeWise Kids MTB Jams goes against that trend.



PHOTO: BikeWise Kids MTB Jam event, Trentham Park, Upper Hutt.

The BikeWise Kids MTB Jams are a series of events based around short easy loops and skills areas provided in main centres around New Zealand. The Wellington round of the series, held at Trentham Park in Upper Hutt, has grown steadily and now attracts 800 children aged between 5 and 12 years.

Smooth tracks with gentle gradients and frequent bermed corners have proved to be extremely successful. Skills areas with jumps and wooden obstacles are of particular interest to young riders.

The popularity of flat or rolling mountain bike tracks and skills areas is well demonstrated at mountain bike parks like Woodhill, Whakarewarewa and Bottle Lake.

There is potential for a kids' skills area on the farmland just south of Whareroa Road, or just off the end of Tilley Road. The park soil is ideal as the sand offers a soft surface for any falls. We imagine that a skills area at the end of Tilley Road would be popular with families camping at the Paekakariki campground.



PHOTO: This flat area at the end of Tilley Road is well suited to a beginners skills area.

5. PROPOSED TRACKS

Introduction

Well designed cycling tracks at Queen Elizabeth Park will create a range of recreational opportunities for both local and out-of-town visitors.

All new tracks should provide loops or links. This ties in with current recreational planning in New Zealand and with the Queen Elizabeth Park Management Plan's goals for networked tracks. It will increase the range of opportunities available for cyclists and walkers.

The two main tracks – an easy recreational mountain bike track and a cycle commuter route run the length of the park, but are quite different in nature.

- An easy mountain bike track is designed primarily for fun on a fat-tyred bicycle. It should be twisty, with many small humps, and occasional gentle climbs. To achieve the essential element of 'flow' it is important that there be no steep slopes or tight corners.
- The commuter route is designed for transport by any sort of bicycle – fat tyres and skinny tyres, single speeds to multi-gear bikes. The five main requirements for a cycle commuter route are:
 1. Coherence (continuous, recognisable, a useful link)
 2. Directness (based on desire lines)
 3. Attractiveness (provide a pleasant experience)
 4. Safety
 5. Comfort (smooth surface, gentle slope).

(source: VIASTRADA Fundamentals of Planning and Design for Cycling)

The proposed routes are:

- Easy Recreational Track (see page 19)
- Poplar Ave Shared Path (see page 24)
- The Cycle Commuter Route (see page 25)
- Farm Road Connector (see page 31)
- Skills Area (see page 32).

A map showing the proposed routes is provided overleaf.

LEGEND

- Park boundary
 - Sealed road
 - Gravel road
 - Existing track
 - Railway/tram line
 - Trees and coastal shrubland
 - Open areas
 - Pond or water body
 - Building
- | | |
|-------------------|------------------|
| Parking | Mountain biking |
| Information point | Horse riding |
| Toilets | Camping |
| Picnic area | Swimming |
| Walking track | Wildlife habitat |

- POTENTIAL RECREATION CYCLE ROUTE
- POTENTIAL COMMUTER CYCLE ROUTE
- POTENTIAL ROADSIDE PATH
- POTENTIAL CONNECTOR



Map B
Cycle Routes Concept Plan 2008
Queen Elizabeth Park

Easy Recreational Mountain Bike Track

SPECIFICATIONS

Grade 1+, 30–60 minutes, 5.92 km (Note: 2.5 km follows existing roads, tracks or the cycle commuter route)

Track width: 800–1000 mm

Average gradient: 5% (3°)

Maximum gradient: 15% (8°)

Minimum radius of turns: 3 m

Track surface: compacted basecourse (or similar material)

The rough route for this track was originally shown on the Potential Future Development map in the management plan. We have recommended several changes to ensure that the maximum sustained gradient of the track is kept below 10%. This is crucial to the success of the track as a beginner route. Young children, especially those on single geared bikes, cannot ride up sustained gradients over 10%.

The proven construction method used on the sand dunes at Bottle Lake involves marking out a route, then laying down 1.2 m wide strips of Geotextile 2002 weed matting, followed by a 100-mm-thick layer of stabilised aggregate (compacted when wet). This results in a hard-wearing track.

The easy recreation track could be developed in four distinct stages.

Stage 1: Tilley Road to Whareroa Road

This stage is 2450 m long. There are 5 sections to this stage.

000–350 m: This section follows an existing track from the end of Tilley Road to a farm gate. The first 200 m is already up to easy standard. The last 150 m follows a farm track that needs surfacing. There is a short boggy section that may require a boardwalk (it is currently dry). This section would also be part of the commuter route.

350–850 m: This section follows a cattle track through a paddock. It passes over a small sandy saddle (Col de Vache) that is currently eroding and will require imported fill to support increased traffic. The planned commuter route branches off at the saddle. We recommend this paddock be retired and planted in trees.

850–1350 m: This 500-metre section is on the coastal dunes side of the fence and passes through mostly blackberry vegetation. Weed control and native forest restoration will enhance this section. Part of the track could follow a secondary walking track.

1350–1850 m: This section crosses easy terrain through a paddock. We recommend fencing off the required section and adding it to the coastal dunes zone, or retiring the whole paddock and planting it in trees.

1850–2450 m: Again, the track would leave the farmed area and climb gradually through low vegetation that includes some native trees.



PHOTO: The proposed route from Col de Vache towards Paekakariki.



PHOTO: The recreational track would go across this paddock and into the vegetation in the background.

Stage 2: Whareroa Road to Whareroa Stream

This stage is 770 m long. There are two options:

Option A: In the short term the easy recreation track could simply follow the Inland Track for 770 m. This section of the Inland Track has only one short steep section (next to the photo shown below) and one or two sandy sections that do not meet IMBA's 'easy' standards. The sandy sections could be surfaced, and the 20-metre-long steep section could be rerouted.

Option B: Ideally, in the long term, the easy recreation track and the Inland Track will be two separate and distinct opportunities. It would not be difficult to build 770 m of new track for this stage. A small amount of farmland would have to be used to ensure that the gradients complied with easy standards (less than 15%).



PHOTO: In the short term, this section of the Inland Track could be included in the easy recreation track.

Stage 3: Whareroa Stream to Rainbow Court

This stage is 1350 m long.

The first 80 m follows the Inland Track to cross a bridge over the Whareroa Stream. From here the Inland Track is far too steep (up to 26%) in places to fit the easy track standards.

A new track will have to head north through paddocks and possibly follow a secondary cattle race for 300 m. There is plenty of scope for different options in this section. The northern half passes through a flat paddock that is ideal for fun turns and small jumps (see below).



PHOTO: Stage 3 would pass through this paddock or the cattle race to the left, because parts of the Inland Track are too steep and it generally lacks the desired features found in purpose-built mountain bike tracks.

Stage 4: Rainbow Court to Poplar Ave

This stage is 1350 m long. It follows a farm track for the first 750 m, as it skirts around the back of the old disused milking yards. No work is required on this part of the track.

The route then passes through a paddock and traces the edge of the new wetland. There is the potential for the track to be either just outside the wetland area, or just inside it.



PHOTO: Stage 4 of the easy recreational track would skirt around the side of these disused milking yards (this facility no longer meets Fonterra standards).

Concluding Notes: Easy Recreational Track

- The easy recreational track can be built in four stages.
- On the ground design should be checked by experienced mountain bike track builders so ensure flow is incorporated.
- The track should be built during the wettest six months of the year, and the track edges hydro-seeded.
- The track could be built with assistance from volunteers.
- Tree planting is required for the track to reach full potential.

Poplar Ave Shared Path

SPECIFICATIONS

Grade 1, 5 minutes, 600 m or 1000 m

Track width: absolute minimum 2000 mm (desirable minimum is 2500 mm)

Maximum gradient: 10.5%

Minimum radius of turns: 5 m

Track surface: 20mm basecourse (compacted). Asphalt in the long term

Poplar Ave is a busy road with no footpath, and in places virtually no shoulder, to the southern side of the road. A path connecting the easy recreational track and the commuter route will be needed beside Poplar Ave. The distance will be 600 m or 1000 m, depending on where the commuter route starts.

It may pay to leave the design of this section until plans for the Western Link Road at Raumati South are more certain.



PHOTO: A 37-metre-long retaining wall will be required where this sand dune meets Poplar Ave.

The Cycle Commuter Route

SPECIFICATIONS

Grade 1, 30 minutes, 6 km

Track width: absolute minimum 2000 mm (ideal width is 3000 mm)

Maximum gradient: 10.5%

Minimum radius of turns: 10 m

Track surface: 40 mm basecourse topped with 20 mm topcourse (compacted). Asphalt surfacing in the long term

Key Design Points of the Commuter Route

- It could be built in two or three stages.
- It would be shared by walkers and runners.
- It must be wide enough to accommodate two-way traffic. With a flat grass verge of 500 mm, the absolute path minimum of 2000 mm would be acceptable.
- Between Poplar Ave and Whareroa Road, there could be a horse track running beside the commuter path. This would connect the two horse areas.
- Barriers will be required at the entrances to the park to prevent motorised transport using the commuter route.

This commuter route is likely to be popular with both cyclists and walkers. We feel that it is impractical to restrict use to cyclists only and therefore recommend that it is designed to be a 'shared path'. Scooters, roller bladers and even wheelchairs may also use the path.

The path between Plimmerton and Pukerua Bay is a shared path. It is generally 3000 mm wide, but does narrow to 2000 mm in places. The path from Pukerua Bay to Paekakariki is less than 1500 mm for most of its length. This makes it quite scary when passing cyclists coming from the opposite direction. Cyclists (and walkers) are cramped between a sea wall and a busy highway.

Technical specifications from Sustrans and Austroads are supplied in Appendix B. These show different path widths for different types and numbers of users, ranging from 2000 mm to 3000 mm.

August 2007 figures from Land Transport NZ indicate that a 2500-mm-wide off-road cycle path costs \$100,000 per kilometre. Approximately 1.5 kilometres of the suggested commuter route at Queen Elizabeth Park is on existing road formations and this will offer considerable savings.

Stage 1: Paekakariki to MacKays Crossing, 2050 m

The first stage of the commuter route is from Paekakariki to MacKays Crossing. It starts on the first 600 m of the easy recreational track and then veers east to cross a low ridge of sand dunes for 700 m to connect with an old road formation that heads northeast for a further 750 m to meet Whareroa Road.

This section has a total length of 2050 m. The maximum gradient is 10.5%. Apart from enabling southbound cyclists to avoid the dangerous Paekakariki highway intersection, this section has the advantage of providing recreational cyclists with a 6.5 km loop by following the Commuting Route, the Recreational Track and then back on Whareroa Road. This is an ideal length for younger riders.

This stage also provides Paekakariki residents with good cycle access in to the park.



PHOTO: This image shows the flattest route through the southern dunes. This route is marked on a contour map at the end of the report.

Future Option

The flattest and most direct route for this section would cross a triangle of private land at the south-eastern end of the park as shown on previous management plan maps.

The private landowners are not interested in allowing a track across their land at this point in time. If in the future this became an option, the advantages would include a flatter and more direct route.

Stage 2: Poplar Ave to Whareroa Road, 3950 m

The second stage is from Poplar Ave to Whareroa Road. There are three distinct options listed below, each with their own advantages and disadvantages.

Stage 2, Option A

From Poplar Ave (halfway between the farm road and the highway) follow a farm track past three large pine trees and then continue south on a cattle track through a long narrow paddock full of gorse. One stream must be crossed. This leads to an old road that no longer joins the highway. This road could be followed to connect up with the cycle commuter route where it runs parallel to the highway.

Advantages: This is the more pleasant option for cyclists as it removes them from the traffic on State Highway 1 and Poplar Ave. Parts of this option already exist.

Disadvantages: It cuts through a paddock that could be farmed.

Work required:

000–200 m: This section is already a gravelled road. In the long term, it would need asphaltting.

200–850 m: A track needs to be bulldozed, roughly following the cattle track. Basecourse would then be laid down and compacted.

850–1200 m: This section would follow a disused gravel road towards the Highway.



PHOTO: This farm road off Poplar Ave provides a good start to the commuter route.

Stage 2, Option B

From the corner of Poplar Ave and State Highway 1, follow a route south parallel to the highway.

Advantages: This route has the least impact on the farming operation.

Disadvantages: This corner of the park has been identified in the management plan as a potential wetland. It comprises peat bog and can be very wet for much of the year. For financial, ecological and road engineering reasons it is not suitable for a cycle commuter path.

Work required: We cannot provide advice on the work required for this option. We understand there were considerable difficulties building MacKays Crossing because of the peaty soil. If this option is chosen, advice from a qualified roading engineer will need to be sought.



PHOTO: The paddocks at the north-east corner of the park are peat bog soil. They are shown as future wetland in the management plan. This area is not well suited for a commuter route.

Stage 2, from Option A/B to Whareroa Road

From the disused farm road down to MacKays Crossing the commuter route would run roughly parallel to the highway. It is generally agreed that this is the best route for this section.

We recommend a minimum 20-metre-wide strip is fenced to allow the commuter path to have some slight turns in it. This width would also accommodate a potential horse track and the tree planting that is recommended in the management plan. The tree

planting will provide shelter from sun and wind for the track users as well as improving landscape values.

Work required:

1200–2100 m: This section, starting from the disused farm road and heading south to Waterfall Road, is all on farmland. It has to run along the inside of the Queen Elizabeth Park boundary fence, as there is no room on the outside. A new farm fence will have to be built the length of this section.

2100 – 3950 m: This section, from Waterfall Road to Whareroa Road, has been largely fenced off already, and an average width of 20 m is available. Two more paddocks need to have fences moved to accommodate the commuter route, and access around or through a silt pond paddock needs to be investigated.



PHOTO: Running parallel to State Highway 1 and within a metre or two of each other is a line of shrubs, a ditch and the farm boundary fence.

There is an option available to use the side of the slipstream for 500 m. This has the advantage of reducing the cycle path budget, but is not ideal. It takes cyclists from the scenic, car-free environment of the park out onto the exposed road reserve. In doing so, it would be contrary to two of the five requirements for a commuter route – continuity and attractiveness.

The last section to Whareroa Road follows an old gravel road. There is a ford to be crossed, which should be bridged. This is a particularly pleasant end to this section.

Farm road option

The most obvious option for a cycle commuter route is the existing gravel farm road that runs down the centre of the park from Poplar Ave to Whareroa Road.

Advantages: This road is wide and flat and pleasant to ride. It is completely separate from State Highway 1. It is also close to the north end of the easy recreation track, and therefore only a 300-m-long connector track would be required beside Poplar Ave.

Disadvantages: The central farm road is used as the main stock race. If the public also used this road the farm operation would be compromised. As long as the northern half of the park is heavily stocked, this road is not suitable for a cycle commuter route (for this reason it is not highlighted on the concept plan map).

Work required: The road is already suitable for all types of bicycle except road racing bikes (any commuter route will have to be sealed to suit road racing bicycles). Re-routing a couple of tight bends and providing roadside amenity planting would improve the road for public use. Farm management methods would have to change to accommodate the public.



PHOTO: The central farm road could provide an easy, safe commuter route.

Farm Road Connector

Some members of the public are already riding down the farm road that runs across the middle of the park near Waterfall Road (see map between page 18 and 19). The farm manager has suggested that this could be made into an official link by building a track between the farm road and Whareroa Stream. This could be kept out of sight of the cattle yards.

Total riding length would be 800 metres. The amount of existing road that could be used, versus new track needing to be built, has yet to be determined.

Connecting links such as this add great value to the track network by adding to the variety of different trips available in the park.

This particular loop also provides the opportunity to build the cycle commuter route in three different stages.



PHOTO: This farm road is opposite Waterfall Road. It would make a good connector track across the middle of the park, from the commuter route to the easy recreational track, the Whareroa Stream Track and the Inland Track.

Skills Area

Most mountain bike parks have a skills area, preferably close to a car park, which incorporates challenges such as jumps, twisty boardwalks, seesaws, and rocks. These are popular areas for children and young adults. Kids socialise together and repeatedly practice a range of obstacles or jumps. It is essentially a playground for cyclists, usually aged between 10 and 25. A skills area should be sited on flat open ground. The area at the end of Tilley Road would be perfect.

A skills area need not be expensive. A few truckloads of dirt, some boulders, a wooden plank sea-saw and some other wooden structures are all that is needed. Some trees to provide shade and shelter and a picnic table or two would make it a popular area.

Gates and Flow of Visitors

Where possible the number of gates for visitors to have to open and close should be kept to a minimum. In the case of the cycle commuter route there should be no gates at all across the path.

The number of gates could be reduced for example on the Whareroa Stream Track. When cattle are not around that part of the farm, the gates that have been installed could be fixed open. This would be especially good during weekends and public holidays.



PHOTO: The number of gates should be kept to a minimum by installing cyclist cattle stops or configuring gates so that they are only closed while stock is being moved. For example, the cattle shown in the photo above could easily be fenced into their paddock, rather than visitors being fenced into sections of the Whareroa Stream Track.

Additional Car Parking

Most recreational mountain bikers will arrive at Queen Elizabeth Park by car. They should be encouraged to enter via MacKays Crossing as this is the safest entrance. However, for various reasons, some will prefer to enter from Paekakariki or Raumati.



If a skills area is built at the end of Tilley Road, then space for 10–15 cars may be needed there. A local art group uses the building at the end of the road. It could be moved to the right to provide better access to the park.



At the northern end of the park, beside Poplar Ave, space for 10 cars may be required.

Tree Planting

A Department of Conservation survey by Gordon Cessford found that mountain bikers preferred native forest to any other recreation setting. The second preference is for pine forest, followed by farmland. This supports the need to plant trees around the new tracks.

Not only are forests a preferred setting from an aesthetic point of view, but trees also provide shelter from sun and wind. They reduce erosion, and a good canopy of trees will suppress weeds, that otherwise become a problem as grazed areas are retired.

The trees that have been successful at Queen Elizabeth Park are:

Myoporum laetum (ngaio)
Cordyline australis (cabbage tree)
Pittosporum eugenioides (tarata/lemonwood)
Pittosporum tenuifolium (kohuhu)
Pseudopanax arboreus (five finger)
Griselinia littoralis (broadleaf/kapuka)
Coprosma repens (taupata)

Phormium tenax (flax) is also a useful landscaping plant

In order to get a shelterbelt installed quickly, it may be worth using a non-native tree. Cupressocyparis Leylandii (Leightons Green) has been recommended.

Suggested Timeline

There are advantages in completing the various stages in a particular order.

1. There seem to be no issues with starting the easy recreation track from Tilley Road to Whareroa Road, other than closing off part, or all, of two paddocks.
2. The next logical step is to build the cycle commuter route from Whareroa Road to Tilley Road, thus completing a significant loop.
3. For both walkers and mountain bikers, the track from Rainbow Court to Poplar Ave is an important extension of the existing track network.
4. The next most important part of the easy recreational track is the section from Whareroa Stream to Rainbow Court.
5. Separating the easy recreational track from the Inland Track between Whareroa Road and Whareroa Stream is the final stage for this track.
6. The Poplar Ave path is needed by walkers and cyclists immediately. However, funding and future roading projects are issues to consider. This path should be completed before the northern end of the commuter route.
7. The middle section of the commuter route and the farm road connector (by Waterfall Road) should come next as this will create another good loop from MacKays Crossing.
8. Funding and future roading plans suggest that the northern third of the commuter route will be the last stage completed in this concept plan.

Essential Infrastructure

Signs and Track Markers

Signs and markers are crucial to the success of any future tracks.

Amenity Planting

To reduce the fire risk and improve the amenity value of the reserve, the area around the car parks and beside the tracks should be planted out in fire-resistant native plants.

Cattle Stops

15 to 20 cyclists' cattle stops will be needed.

Skills Obstacles

Dirt jumps (4 'table tops' ranging from easy to hard)
Seesaws (one easy, and one difficult)
Twisty board walk (15 m long), various logs and large boulders
Two solid wooden seats and a picnic table

Proposed Project Budget Estimates

Easy Recreational Track (3.5 km to be built)	87,500
Poplar Ave Shared Path (600 m, 2 m wide)	50,000
Cycle Commuter Route (6 km, 2.5 m wide)	550,000
Farm Road Connector (approx. 300 m to be built)	7,500
Cattle stops (15)	6,000
Amenity planting (2000 seedlings/year for 3 years)	18,000
Skills area	12,000
Maps and signs	11,500
Bike stands (x2 by toilet at Whareroa Beach)	1,500
<u>TOTAL ESTIMATED COSTS</u>	<u>\$744,000</u>

Project Funding

For Queen Elizabeth Park to fully realise its potential as a recreational asset, it seems realistic that Greater Wellington will have to lead the way in terms of initial funding. However, a project of this sort has the potential to attract additional funding from charitable trusts, events and private business.

Volunteer groups have built most mountain bike tracks in New Zealand. They may considerably reduce the cost of constructing the easy recreation track by providing labour and applying for funding from charitable organizations.

The funding for the cycle commuter route may be shared between KCDC, Greater Wellington, and if works coincide with a major roading project, Transit New Zealand.

6. CONCLUSION

The *Queen Elizabeth Park Management Plan* and the *Wellington Regional Land Transport Strategy*, as well other Greater Wellington policy documents have identified the need for improved recreational opportunities at Queen Elizabeth Park and/or a cyclists' commuter route between Paekakariki and Paraparaumu.

Easy Recreational Track

Despite mountain bike trails proving to be popular throughout New Zealand, the Kapiti Coast, from Porirua right up to Levin, does not have a single good track for beginners and family groups. Existing mountain bike tracks in the region are typically steep and technically difficult. They do not cater well for the majority of mountain bikers, especially young people or less fit cyclists. This recreation gap is waiting to be filled.

Cycle Commuter Route

There are options for cyclists to avoid riding on State Highway 1 both south of Paekakariki and north of Raumati. Queen Elizabeth Park is the 'missing link'. Greater Wellington and KCDC aspire to increase the number of cycle commuting trips in this area. This cannot be achieved without building the proposed cycle commuter route. Unless the number and speed of motorists using State Highway 1 significantly decreases, this stretch of road will continue to present an unacceptable risk to potential cyclists.

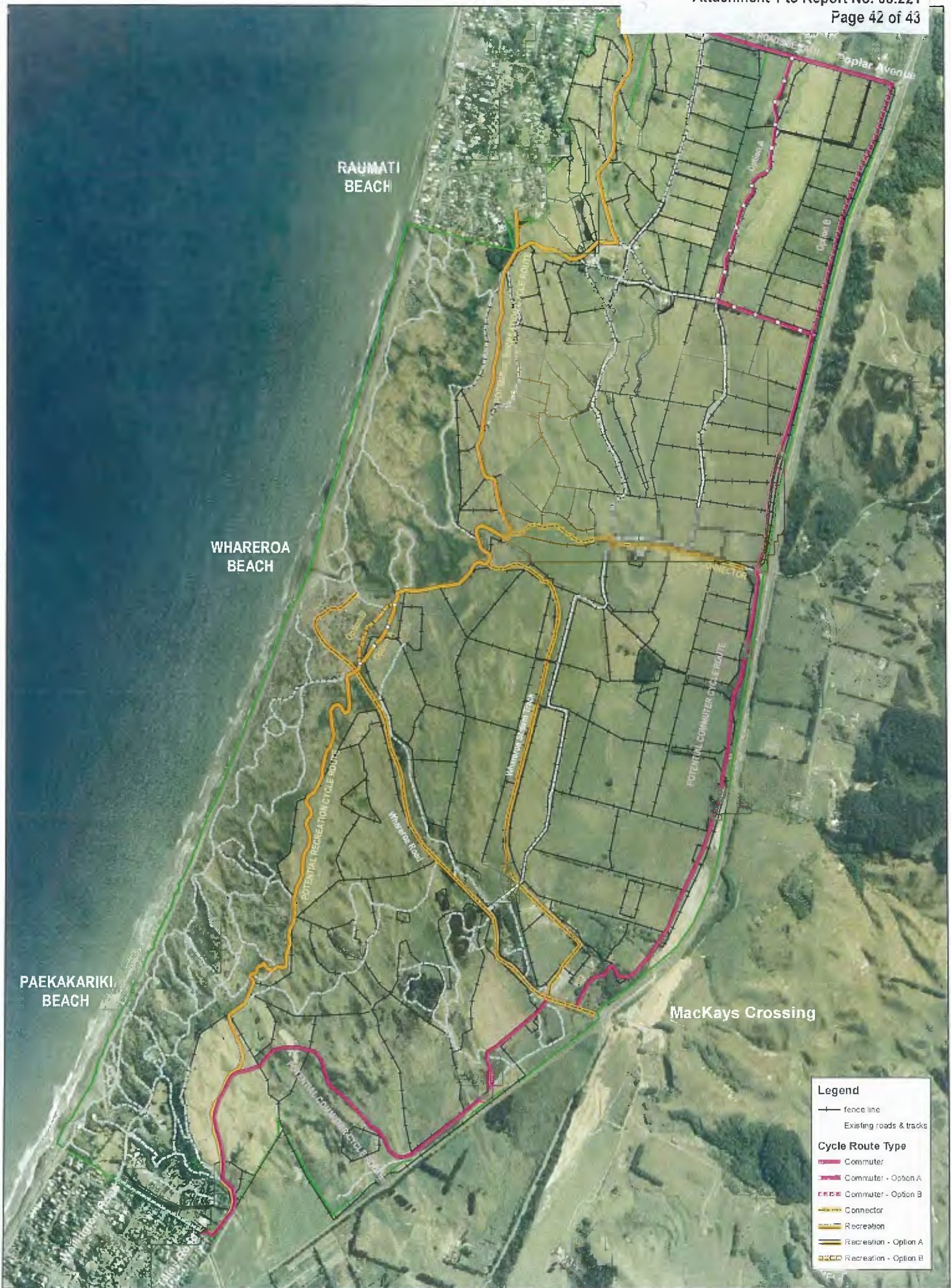
Queen Elizabeth Park is the only location that can provide both an easy recreational track and a commuter route. The track and the commuter route can be connected with a few links, which will increase the number of potential trips available at the park.

Implementing the proposed plans will help Greater Wellington and Kapiti Coast District Council achieve several stated goals, including:

- *Encouraging greater access to the park for non-vehicular access (QEP Management Plan)*
- *Making cycling in the Kapiti Coast district a viable, safe, easy, direct and enjoyable transport and recreation option (KCDC)*
- *Increasing pedestrian and cycling networks that are convenient, safe and pleasant to use. (WRLTS)*

If you have any questions regarding this proposal, please do not hesitate to contact me. My email is jonathan@kennett.co.nz

Jonathan Kennett
The Kennett Bros



Map C - Aerial Photo
Cycle Routes Concept Plan 2008
Queen Elizabeth Park

0 100 200 400 600 800 1,000 Meters



Relevant Experience

Jonathan Kennett
BSc – Botanical Ecology (1989)

Simon Kennett
BSc – Physical Geography (2001), Dip Environmental Management (1999)
Currently works for Cycle Advocates Network (CAN)

Co-authors of guidebook *Classic New Zealand Mountain Bike Rides* (six editions since 1991, 41,000 copies sold, researched every mountain bike park in the country)

Co-organisers of Karapoti Classic, New Zealand's most prestigious mountain bike race, from 1986 to 2005

Co-organisers of many mountain bike races, from small local events to the 1997 Wellington World Cup and 2006 Rotorua World Championships

Track Development Consultancy:
Greater Wellington (MTB Strategy, 1995)
Wellington City Council (assessment of track potential in Outer Green Belt, 2003)
Auckland Regional Council (assessment of MTB track potential, 2001)
Meridian (Project Westwind recreation plan 2005)

Track design and construction:

Wellington City Council:

- Makara Peak Mountain Bike Park (managers from 1998 to 2003)
- Wellington Skyline Track (three sections designed from 2002 to 2007)
- Hutt River Trail (constructed Birchville section, 2005)
- Maidstone Max MTB track (constructed lower half, 2005)
- Rotorua 2006 World MTB Champs (course design and maintenance)
- Wainuiomata Mountain Bike Park concept plan (2007)
- Totara Park, Auckland, design concept review and track design (2007-08)
- Canaan Downs, Tasman, track network plan (2007-08)

Acknowledgements and Sources

Ross Jackson – Advisor Community Projects, Greater Wellington
Stu Kilmister – Cycleways Walkways and Bridleways Implementation Coordinator, KCDC
Nikki LaMonica – Ranger, Queen Elizabeth Park, Greater Wellington
Brad Jones – Farm manager, Queen Elizabeth Park
Rodney Chambers – Head Ranger, CCC Coastal Parks
Graham Law – Parks Asset Advisor, Greater Wellington
Joe Clarkson and Jan Nesbitt – Friends of Queen Elizabeth Park
Jill Ford – Founder/Organiser of the BikeWise Kids MTB Jams

Queen Elizabeth Park Management Plan (2006)

KCDC – Cycleways, Walkways, Bridleways Strategy (2004)

Wellington Regional Land Transport Strategy (2007)

SPARC – Participation in Sport (2001)

AUSTROADS – Guide to Traffic Engineering Practice – Bicycles (1993)

Outdoors Wellington – A Strategic Plan for Outdoor Recreation, Landscape and Heritage in the Wellington Region (1994)

Classic New Zealand Mountain Bike Rides (2005)

Trail Solutions: IMBA's Guide to Building Singletrack (2004)