

Developing Great Cycle Rides for a Prosperous and Sustainable Future

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ABSTRACT

To encourage economic development through tourism, the government established a \$50M fund for the development of great cycle rides in New Zealand as an outcome of the 2009 Job Summit. Venture Southland was ahead of the field having already instigated investigations to develop two trails in Southland.

The Ministry of Tourism guidelines and Venture Southland's vision set the direction for the projects. Both routes have a combined length of 310 km. These cycle routes brought together technical staff from civil, structural engineering, transportation designers, planners, ecologist through a multi discipline approach of project management. Bringing these technical staff together needed a strong scope to maintain focus of delivery.

To support user enjoyment, key elements considered during the route development were gradients, track standards, structure standards, sign and toilet requirements.

Consenting and land ownership issues were key project risks. The development of any great ride needs a clearly defined planning pathway to ensure that the economic, social, cultural and environmental attributes are optimised, and the benefits to cyclists, the community and the economy can be realised. Global consents across five councils and concessions from DOC provided the means to address key concerns and realise the positive effects that can come from cycling assets.

INTRODUCTION

Cycle tourism already contributes to the local economy with potential for strong growth. Calvert (2005) has reported “that the average per person expenditure within the Otago Central Rail Trail region was \$92.80 per day (including accommodation) with the average length of stay 3.8 days”. Of the businesses surveyed in 2005, “82.5% of survey respondents believe that the Otago Central Rail Trail has had a positive economic impact on their communities”. Tourism Resource Consultants (2009) have identified the annual expenditure by cycle tourists is \$305 million. With small increases these figures can be doubled.

An outcome of the 2009 Job Summit was the announcement by John Key to provide \$50M in funds for the establishment of great rides in New Zealand. A key driver was to promote economic development. Venture Southland was ahead of the field having already instigated preliminary investigations into two cycle trails in Southland: The Round the Mountain Cycle Trail (180 km) and the Kingston to Bluff Cycle Trail (130 km). The challenge was to define the routes in a short timeframe (9 weeks) while identifying and addressing the issues.

Land ownership was identified as a significant project risk. The Round the Mountain route had fewer landowner issues and thus was the route that would be progressed first to a stage suitable for a funding application. The Lumsden to Bluff route required a higher number of negotiations with private landowners and hence was expected to take longer to finalise.

Unlocking remote settings to a range of user groups including the adventure junkies and recreational cyclists comes with risk. The development of a great ride needs a clearly defined planning pathway to ensure that the economic, social, cultural and environmental attributes are optimised to the benefit of the cycling public and the local communities. The planning process used involved applying for global consents from two Regional Councils (Otago and Southland) and two District Councils (Queenstown - Lakes and Southland) and one City Council (Invercargill). Figure 1 illustrates the routes and council boundaries.



Figure 1: Map showing cycle routes and district boundaries

ROUTE DEVELOPMENT METHODOLOGY

To assist with route selection from Lumsden to Bluff, six main design principles have been developed which are as follows:

1. Minimise risk due to underlying land ownership by utilising public land, including road and rail reserves as far as practicable.
2. Follow the original rail alignment where practicable.

3. Maximise enjoyment by including areas of interest, both scenic and cultural as well as the townships.
4. The route should be rideable by novice cyclists. The main target audience is those in the 40 years plus age bracket. Therefore gradients should be minimised, difficult intersections and busy roads avoided as much as possible.
5. Enable ease of construction and maximise value.
6. Create opportunities for economic growth by providing a desirable route that attracts visitors and brings them to the townships.

Often the above criteria will conflict with each other, requiring a balanced approach.

THE PROCESS

The challenging process involved deploying resources onto the project to evaluate 310 kms of potential track within 9 weeks.

Each project was managed separately, involving staff across three MWH branches (Christchurch, Queenstown and Invercargill) plus a sub-consultant (Mike Barnett and Associates). Managing the geographic spread required the project to be split into the following defined tasks:

- route selection
- track engineering
- structures
- planning/consultation
- landscaping/amenities
- GIS

However the tasks were not independent of each other and therefore an iterative process was required with regular discussions and workshops held throughout the project. The most efficient means of evaluating the 310 km combined track was to fly the route by helicopter. Adopting a preliminary route before the flight involved analysis of Venture Southland's earlier investigations. Use of previous reports supplemented by consultation with councils assisted to identify the preliminary route. The route was video taped which provided a useful resource.

The helicopter was essential to confirming the route, as it allowed evaluation of options, identification of existing rail corridors, floodbanks and other tracks, identification of existing bridges and if new bridges would be required, assessment of gradients, assessment of amenity value, and assessment of vehicle access and parking locations.

The helicopter assessment was supplemented by on the ground inspections at key locations to better identify ground conditions, structural requirements and space requirements. Less accessible ground involved site walkovers where ecology assessments and complex waterway crossings needed conceptual designs.

GIS was extensively used, not only to provide a visual representation of the route, but it was also essential to process the large volumes of information. This included comprehensive databases on land ownership, land tenure, easements and conservation areas all of which was used to minimise project risks and refine the cycle routes.

DESIGN CONSIDERATIONS

At the outset it was important to identify the target audience. The Ministry of Tourism identified the target users as 40 year olds and older, who have discretionary income, and are looking for holiday activities with a difference. This influenced our design criteria, particularly the gradient with a desirable maximum gradient of 5%.

The Round the Mountain route lends itself to being predominantly a single direction track starting at Walter Peak and ending at Kingston. It is recognised that some users will want to travel in the opposite direction. The design track width is 2 m, which will allow social cycling and passing opportunities. The Lumsden to Bluff cycle route is expected to be bi-directional and a design track width of 2.5 m has been used.

In general structures are 1.5 m wide, which provides single directional flow at a time. This helps to minimise high value items and reduce the environmental impacts. The exception is the boardwalk alongside the Bluff highway in Invercargill. At this location a boardwalk width of 2.5 m was recommended to cater for expected commuting cyclists. At 2.5 m the width is sufficient to allow for slow speed passing manoeuvres. Given that the commuting cyclists flow is expected to be tidal, this width is expected to be adequate.

In determining suitable information sign locations, access/exit points were identified along the track. Each of these locations was identified as either a major or minor node. Figure 2 shows an example of a sign and shelter option to be used at identified minor nodes.



Figure 2: Example information sign and shelter for a minor node.

As indicated by Ryan et al (2004), good sign posting achieves a high importance rating for recreational and touring cycle routes. The proposed finger board sign as shown in Figure 3 is a good example of this and is based on sign 2602.1 from the UK



Figure 3: Example route finger board

Department for Transport (2002). It indicates the route direction, it is clear that it is a cycle route and it provides distance information to the next destination. The example leaves a small blank space on the left hand side to allow for route markers to be added at a later date.

Toilet facilities were based on the forecast number of track users. Existing toilet facilities were used where possible. The spacing of toilets was set at a maximum of 25 km with a desirable spacing of 10 to 15 km. The maximum spacing equates to 1 hour and 40 minutes based on a cycling speed of 15 km/h.

PLANNING STRATEGY

The planning strategy is to seek global consents¹, bundled for all consenting authorities, and use as much information for all statutory applications to councils and the Department of Conservation. The refinement of global consents in New Zealand is being tested more regularly than before, as infrastructure budgets are being challenged to deliver more at lower costs. Currently the applications have been drafted and await lodgement, pending funding.

To assist with the design parameters, an evaluation of the planning rules was undertaken. The rules assessment enabled designs to avoid consents where possible, and formed the basis of what consents were needed. Between each consent authority we accumulated common consent requirements to provide one global assessment. A comparison of the 'global' approach could be taken with applications made to unitary authorities, or linear

¹ "Global consents" are also referred to as "blanket consents". Global consents usually relate to an organization with interests across a local authority, or geographical feature, rather than one site. They can cover a variety of activities which are similar enough or relevant to the activity to consider consent conditions

projects such as roading or transmission lines. The 'global' approach extended into understanding the consent requirements and developing mitigation measures and management plans that would assist the mitigation of actual and potential effects on the environment. The process of developing 'global' consents as a bottom up and top down approach leverages off two opportunities, being:

1. Sets the scale and significance framework of the Assessment of Environmental Effects (AEE) and level of tests within the Resource Management Act (RMA).
2. What conditions of consent the applicant can give effect to within their budget and expectations of construction.

Table 1 provides an example (bridge structures and associated earthworks) of the common rules assessment between Council requirements. The approach to the 'global' consents prepared for the cycle trails focused heavily on the positive effects and relevance of Part II matters under the RMA. The positive effects of the proposed cycle trails are from individual and community wellbeing. The positive effects transpire directly and indirectly towards economic growth and prosperity. Benefits can be realised through tourism activities such as the commercial support businesses (e.g. B&B's, accommodation and food and drink outlets, transport transfers). Economic gains in Kingston, Mossburn, Queenstown, Lumsden, Dipton, Winton, Bluff and smaller settlements enroute can benefit.

Table 1: Example of Rules Assessments to guide designs for Bridges

2	Paraphrased Rules	Assessment and conditions
SRC	Rule 26 – Bridge Rules <ul style="list-style-type: none"> • No support structures in the bed • No increase in risk of flooding surrounding land • No impediment to river channel flows • No hazard to river navigation • No storage of hazardous substances • No impediment to fish passage 	Bridges that do not require support structures in the bed - permitted, however some of the larger bridges will be a restricted discretionary activity.
SDC	Rule PRA.6 <ul style="list-style-type: none"> • Erosion and instability (ground slope exceeding 30°), soil compaction and nutrient loss • Spread of undesirable weeds • Formed surfaces with inwards crossfall to be drained • Prevent scour, gulying, or other erosion with cut-offs or culverts • Avoid fill being placed over woody vegetation • Fill batters shall be constructed and vegetated • Spoil shall be disposed of by end-hauling 	Vegetation removal within five metres of water courses is a restricted discretionary activity.
ORC	Rule 13.2.1.7 <ul style="list-style-type: none"> • Limit the size of the upstream catchment > 50 hectares • Not cause any flooding, nor erosion of the bed or banks • Leave the site tidy following the works. 	The size of most of the catchments is generally more than 50 hectares in area, thereby a complying activity.
QLDC	Rule 5.3.3.2 <ul style="list-style-type: none"> • Earthworks where bare soil exposed is between 1000m² and 2500m² per site within a 12 month period. • Earthworks where the maximum volume of earth moved is between 300m³ and 1000m³ with 12 month period. 	Works will exceed the area or volume specified within one consecutive 12 month period, thereby being a non complying activity.

² Councils are: Southland Regional Council [Environment Southland](SRC), Otago Regional Council (ORC), Southland District Council (SDC), Queenstown Lakes District Council (QLDC)

Conditions addressing this rule included the submission of design plans for certification prior to construction and construction management programmes, erosion and sediment control and timing conditions relevant to spawning seasons and rehabilitation plans. An exhaustive table assessing all relevant rules was provided in the appendix of the consent applications outlining the typical activities that require consent, including:

- Development of track/trail
- Vegetation clearance and earthworks
- Car parking and stormwater discharges
- Stormwater discharges
- Culvert and bridge installation
- Signs
- Public toilets and discharge permits
- Ancillary construction activities

CONCLUSION

Cycle tracks can be used to provide a prosperous and sustainable future through tourism. Tourism Resource Consultants (2009) indicated that with small increases, cycle tourism can yield significant returns to local communities and the national economy.

A balanced approach was essential to minimising risks, particularly land ownership risks, while developing a cycle route that was affordable, provided variety and user enjoyment while meeting the government objectives of developing economic opportunities.

Successful delivery of global consents and gaining approvals can be achieved by inclusion of stakeholders, and multi discipline input into the design guided by rules assessment.

Use of effective site inspection techniques, deployment of the right staff onto the job, equipped with meaningful information has assisted Venture Southland's planned great rides. The economic gains will be fruitful as tourism operators integrate and leverage from the cycle tour operations bringing economic growth deep into the regions and townships.

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ACKNOWLEDGEMENTS

Rex Capil at Venture Southland for his vision in undertaking preliminary cycle route investigations enabling detailed investigations to be progressed quickly and efficiently.

Mike Barnett for providing us his previous reports, valuable local knowledge and guidance developing suitable routes.

Alix Newman for his project management of the Round the Mountain cycle route enabling large volumes of information to be analysed within tight timeframes.