

**HWP WAITOHI IRRIGATION
AND HYDRO SCHEME**

ARCHAEOLOGICAL ASSESSMENT

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**Report for Heidi Crawford
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1. EXECUTIVE SUMMARY

The Hurunui Water Project Limited has proposed The Waitohi Irrigation and Hydro Scheme. This development would consist of dams, canals, a pipeline and a tunnel. Much of the project area has the Maori greenstone trail to Mt Sumner passing through it, as well as the later 1860s goldrush track. There has also been early pastoral activity throughout the area, and early historic buildings associated with it.

No archaeological or historic sites have been recorded in the project area, or were found by a field visit except for the historic woolshed # H44 in the Waitohi gorge which will not be affected by the proposed development. However, there is the potential for sites which are buried or covered by grass to be present and to be affected by the proposed development.

The recommendations arising from this assessment are as follows:

1. Historic archival research is needed to locate old survey plans and early documents, as well as oral history to identify the location of historic sites. Field visits are also needed for ground truth. This is important for the planning process so that these sites can be avoided.
2. An HPT Authority is needed because of the potential impact on archaeological and historical sites.
3. Maori consultation with the appropriate runanga has been completed and can be found in the Cultural Impact Statement.

2. INTRODUCTION

This is an assessment of potential archaeological impacts by the proposed The Hurunui Water Project Limited (Figure 1). The proposed development is an irrigation scheme to take water from the Hurunui River and transfer it to a water storage facility at Hurricane Gully on the Waitohi River (Figures 2 & 3). In addition there are other dams and canals proposed (Figure 2). According to the information provided the project is described as follows:

The proposed Waitohi Storage Site project involves the following base case components:

- The water will likely be taken out of the Hurunui River at or near RL 383.5, incorporating a sediment pond, and infiltration gallery and then a pump station
- It will be pumped up through a 2km rising main to a height at or near 475RL
- It will then be sent through a tunnel (diameter to be advised) into the top of Hurricane Gully
- The water will be released at or around 475RL
- The main dam will be sited on the main stem of the Waitohi, just below Hurricane Gully – options for the dam type are still being considered but are likely to be CFRF, subject to land survey
- There will be three other dams below the main dam for reregulation and additional hydro generation options.
- The height and storage capacity of the dam is still being determined
- Hydro generation options downstream of the base of the dam and down to the lower gorge are being investigated
- Infrastructure associated with taking irrigation water to farm gate will not be included in this stage of the consent process, other than for general costing purposes

Associated with the storage dam will be access ways, construction areas and other ancillary structures and buildings. Hydro generation opportunities in the gorge below the dam would also have infrastructure associated with it, including transmission lines.

Water stored in the Waitohi Storage reservoir will be discharged during the irrigation season to supply the take below the Mandamus confluence. The take structure will feed water to a canal or pipeline which would then be taken for irrigation with any bywash (overflow) potentially discharging across to the Waipara catchment.

The area to be flooded begins with a dam in the lower Waitohi gorge (Figure 3), about 1 km up from the bridge. The next proposed dam is just above the Jacks Stream at Inches Road, and another is just above Seven Hills. These are relatively small dams, flooding the valley bottoms. The main dam is just below Hurricane Gully on the Waitohi River. This creates a large flood pool which goes up the valley but not as far as Virginia further up the valley.

The proposed development is located in mountainous terrain in the Lake Sumner area, mostly in open tussock vegetation.

3. STATUTORY REQUIREMENTS

3.1 Regional Plan

The following is taken from the Canterbury Natural Resources Regional Plan, June 2011 Chapter 6 – Beds of Lakes and Rivers, Pages 6 – 17. The relevant issue in the plan is one which is focused on the beds of the rivers and lakes, but also includes the associated land. The archaeological features are not expected to be located in the Waitohi River bed, but would belong to the related floodplain. The plan states:

Issue BLR1. Activities within the beds of lakes and rivers and land adjacent to the bed

- (1) Activities within the beds of lakes and rivers and land adjacent to the bed

Objective BLR1. Activities within the beds of lakes and rivers and land adjacent to the bed. Activities within the beds of lakes and rivers and/or land adjacent to the bed are able to be undertaken while:

- (h) providing for the relationship of Ngai Tahu and their culture and traditions with their ancestral lands, water, sites, wahi tapu, and other taonga;
- (k) protecting historic heritage from inappropriate use and development.

Policy BLR1. Effects of activities within the bed of lakes and rivers and/or land adjacent to the bed. Control land use activities, including:

- (a) the use, erection, reconstruction, placement, alteration, extension, demolition or removal of structures;
- (b) excavating, drilling, tunnelling or other disturbance;

These provisions make explicit reference to any Maori and historic sites which might be on the Waitohi River flood plain. Any development which would impact such sites would be controlled activities.

3.2 District Plan

In the Hurunui District Plan, Chapter 2 reference is made to heritage values as follows:

C1.2.1 Assessment of land use consents. The matters contained in sections 104 to 104D, and in Part II of the Act apply to the consideration of all resource consents for land use activities. In addition to these above matters, the Council shall apply the assessment matters, where relevant, as set out below:

(k) The extent to which any ecological, heritage, conservation and landscape values of the area will be maintained and enhanced.

C1.2.4 Specific criteria for assessing land use consent applications - District-wide matters. In addition to any other relevant matters, Council will consider the following criteria, where appropriate:

(g) Heritage. Note: Refer to Section A8 – Heritage and Issue 8 – Heritage Resources

- The category in which the feature is scheduled and the reasons for which it has been scheduled;
- The nature, form and extent of the proposed development, the effect of these factors on the character of the scheduled feature;
- The architectural design and appearance of any proposed alterations or additions, including assessment of how these will protect and enhance the heritage values of the feature;
- Any conservation plan or environmental impact assessment submitted with the application;
- The written consent, where necessary, of the relevant heritage protection authority where the feature is the subject of a heritage order;
- The outcome of any consultation with any relevant body or individual, such as the Historic Places Trust, the Department of Conservation or local iwi;
- The degree to which the proposal reflects the conservation principles contained within the ICOMOS NZ charter for the conservation of places of cultural heritage value;
- The registration (if applicable) and the reasons for this registration of the heritage resource under the Historic Places Act 1993;
- The importance (if any) of land surrounding the heritage resource;
- The impact the proposal has on the integrity/value of the heritage resource; and;
- The importance attributed to the heritage resource by the wider community.

These provisions outline the requirement to account for any heritage and archaeological values which may be adversely affected by development

Section A8 in the Hurunui District Plan is concerned with heritage as follows.

A8.1 Permitted activities. Unless specified as a non-complying activity, any activity affecting a feature listed in Schedule A8.1 or Schedule A8.2 that complies with the conditions within Section A8 is permitted provided it also complies with all other district-wide rules and the rules for Environments of Special Concern in Section B. Note: All archaeological sites (whether recorded or unrecorded) are protected under the provisions of Section 10 of the Historic Places Act 1993 and cannot be destroyed damaged or modified without the consent to the Historic Places Trust.

A8.2 Conditions for permitted activities. Note: Refer to Policies 8.1, 8.2 and 8.6

A8.2.1. No feature listed in the Schedule of Heritage Features (A8.1) may be altered, modified, (unless provided for as a minor work), removed or destroyed. Note: Refer to the definition of 'minor work' in Section D of the Plan

A8.2.2 No archaeological feature or site listed in the Schedule of Heritage Features (Appendix A8.2) may be altered, modified, damaged or destroyed. Note: Refer to Policies 5.1 and 8.8

A8.3 Discretionary activities (unrestricted). Any activity that does not meet the conditions for permitted activities and that is not listed as a non-complying activity. In assessing applications for resource consent, Council will consider the relevant criteria in Section C1.2, in addition to any other relevant matters.

A8.4 Non-complying activities The demolition or removal of a heritage feature with a Category I classification under the Historic Places Act 1993 is a non-complying activity. In assessing applications for resource consent, Council will consider the relevant criteria in Section C1.2, in addition to any other relevant matters.

Appendix A8.1 – Schedule of heritage features. This provides a list of heritage sites recorded by the district. One of these is within the impact area (although not in the inundation area):

H44 17 3747 Woolshed Lake Sumner Road, Mt Noble

Although apparently not affected by the Waitohi project, other registered historic sites in the area include:

H36 17 3745 Truss Bridge – Seaward River Lake Sumner Road, Mt Noble

H14 19 3675 Esk Head Station – homestead Esk Head Road, Upper Hurunui River

H14 17 3746 Esk Head Station – woolshed Lake Sumner Road, Upper Hurunui River

Appendix A8.2 – Schedule of recorded archaeological features. The following list represents those known recorded archaeological sites – this does not represent all archaeological sites within the Hurunui District, much of the District has not had archaeological surveys undertaken. This list did not include any archaeological sites in the project area.

Objective 8. This is the protection of sites, buildings places or areas which have significant heritage value for the community. Following this there are a series of policies which include:

Policy 8.2. To support local initiatives in the identification and protection of the District's heritage values.

Policy 8.6. To protect scheduled heritage features from destruction, deterioration or inappropriate change.

Policy 8.8. To protect and preserve those features which are of special significance to tangata whenua. This needs to include consultation, District Plan rules to restrict activities which could adversely affect sites of significance, and heritage protection provisions of the Historic Places Act.

Policy 8.9 To recognise the relationship a heritage resource may have with the land surrounding the resource. This may be by negotiation with landowners, District Plan rules, District Plan maps showing the surrounding curtilage, and advocacy to promote good subdivision and development design to protect heritage resources.

In summary the District Plan contains a comprehensive and detailed program for the protection of heritage values.

3.3 Historic Places Act and the RMA

The Historic Places Act 1993 provides protection for archaeological and heritage sites up at a national level. Under this legislation any potential impacts from proposed development require an archaeological assessment. An archaeological site in this case is defined as any place that was associated with human activity that occurred before 1900. It includes:

The purpose of the assessment is determine if an Historic Places Trust Authority is required for any work that may damage, modify or destroy an archaeological site, or if any other actions are needed.

The Historic Places Trust has provided a set of guidelines (Historic Places Trust 2006) for the preparation of an archaeological assessment and as an Assessment of Environmental Effects under the Resource Management Act (1991). Under the RMA historic heritage is defined as follows:

- Historic sites, structures, places and areas.
- Archaeological sites.
- Sites of significance to Maori, including wahi tapu.
- Surroundings associated with the natural and physical resources (RMA section 2)

Section 88 in the RMA requires an Assessment of Environmental Effects which includes historical heritage. The HPT guidelines for an archaeological assessment are designed to satisfy the RMA requirements,

4. BACKGROUND

The proposed project is located at the start of the mountains west of the road to Lewis Pass near Lake Sumner (Figure 4). The terrain consists of the mountain ranges on the eastern side of the Southern Alps (Figure 5). The Waitohi River Valley flows easterly, roughly parallel to the Hurunui River.

The area is well behind the coastal zone where most of the Maori oral history takes place (see Stack 1898, Taylor 1950, Brailsford 1996), and where the greater part of archaeological sites are recorded (Challis 1995). It is notable however for being on a major greenstone trail for transporting pounamu from the West Coast up the Taramakau River over the Harper Pass.

European settlers began entering the area in the 1850s, and in 1857 Leonard Harper (son of the Bishop) and others crossed Harper Pass in (McRae 2001:15). The land was extensively used for sheep pasturage, and in the 1860s the old Maori greenstone trail became a major travel route to the West Coast gold field until Arthur's Pass was opened up.

The nearest archaeological work is in the Weka Pass area (Figure 4) where there are limestone caves and rock shelters. Some of these have produced deposits with moa bone. They are particularly notable for a substantial amount of rock art (Challis 1995).

5. METHODOLOGY

A literature review was undertaken for both Maori and pre-1900 references, and this was extended by the use of the internet. A field visit to the area was made on 7 September 2011. The purpose of this visit was to evaluate the ground cover and potential for buried archaeological materials as well as to note any standing or obtrusive archaeological/historical features. It also was an opportunity to talk to local people about their historical knowledge.

The New Zealand Archaeological Association site recording system was consulted to determine if any archaeological sites had been registered in or near the subject area. No Maori or pre-1900 sites were to be found close to the project area.

6. RESULTS

6.1 Document Review

A sequence of activity has taken place in the subject area from Maori times to the early European.

6.1.1 Maori

References in the literature to Maori activities or places were investigated. Work by Stack (1898), Taylor (1950) and Brailsford (1997) were reviewed, but had relatively little comment about Maori in North Canterbury, and no reference to the Waitohi River or vicinity. In Challis (1995) maps were shown of the Weka Pass area (p. 12 & 31) where moa bone in sites had been found and where there were ovens. In the limestone outcrops of Weka Pass, Timpendean, and Gowan Hill, rock art has been found (p. 41). This area however is over 10 km from the Waitohi River, and the geological map shows that there are no suitable limestone outcrops for similar rock shelter sites in Waitohi River valley (Ratenbury et al 2006).

Brailsford (1997:99, 120) describes the greenstone trail going from Lake Sumner, past Loch Katrine and Lake Taylor, over the south branch of the Hurunui and into the main Hurunui. From there it went past the Seaward River to Maori Gully where there was a rope ladder to climb out of the Hurunui gorge and go over Jacks Saddle (Figures 4 and 6). McRae (1993:42) also mentions Maori rope ladders made of "supple jack" at Maori Gully. This route then goes over Jack's Saddle and down Jacks Stream to the Waitohi Gorge, following the Waitohi River out onto the Hawarden Plains and then towards Weka Pass (Figure 6).

However when I visited the area on 7 September, I was informed by both Jack Inch and Mrs. Spencer that the Maori trail did not go over Jacks Saddle. Instead of going up Jacks Stream as the modern road does, it crossed from the Hurunui valley to the Waitohi River by way of Hurricane Gully. From there it went up Hurricane Gully and over into the Hurunui valley. This also is the route for the proposed dam, reservoir and tunnel. This would seem to be a much more feasible travel route. The western slope at Jacks Saddle is extremely steep, and it would be most arduous to carry a heavy load of greenstone up it. This route was later used for sheep droving. The track mainly used during the goldrush however was Blakes Road built in 1865 which went over Jacks Saddle, but on the south side of the gorge (McRae 2001: 42,43).

6.1.2 Pastoral Runs

Historic references were also consulted for pre-1900 European sites. The earliest homestead on the Hawarden Plain was at Horsley Down 1852 (Figure 4) which extended into the mountains as far as the Seaward River (McRae 1993:48. Ackland 1975:280). It had 100 workers in 1859, but the focus of activity at this time seemed to be more on the open plains than in the mountain ranges. The Esk Head run was established 1859 on the South Branch of the Hurunui. This extended as far into the ranges as the Seaward River (Ackland 1975:283). The sheep were driven out to the Waitohi Gorge for shearing.

Kanuka between the Waitohi and Hurunui Rivers was established in 1880s having once been part of Horsley Down. Also nearby, a settlement formed at The Peaks shortly after 1887 (McRae:52-53). The Lakes was another early high country run located at Lakes Taylor and Sheppard near Lake Sumner, and dates to 1887 (Ackland 1975:284). None of these places are on the Waitohi River, but they show that there was considerable activity in the area at the time.

6.1.3 Gold rush

The West Coast goldrush of the 1860s meant considerable traffic over the Harpers Pass, with 400 travellers per month (McRae 1993:41-2). This followed the Maori greenstone trail, going up the Waitohi Gorge but using Blakes Road up Jacks Stream and over Jacks Saddle at Maori Gully to get to the Hurunui (Figure 8). At start of the Waitohi Gorge was Leiths Black Hotel built in 1865 (Figure 8) on the gold rush trail. Associated with it was a butchers shop and two stores (McRae 1993:51). This is where the present bridge is and where the four inch pipes begin for the Hawarden – Waikari district. Also located in the vicinity was a settlement of Lancashire weavers in 1865 because of the stands of flax locally available. Details of the goldrush trail are described by Caroline Chevalier in 1865, and she is shown in a sketch by Nicholas Chevalier (McRae 2001:8).

6.1.4 Settlement

As mentioned above a settlement began to develop at the entrance to the gorge with the goldrush. A considerable amount of detail was found on the internet by Hewett (1970). His family arrived at The Peaks settlement in 1887 when the sections were first taken up. There were a series of sections running down the road down to the Hurunui River, and others along the foothills. The school opened in December 1891 which later became the local hall. The settlers had a horse team to do contract ploughing, and some were carpenters and others did various labouring work. There also is the mention of a survey in 1891.

Peter Hoban lived in a hut just over the Waitohi Gorge bridge. There also used to be a pub on a small flat between the road and the river about 200 yards after crossing the bridge over the Waitohi. When it was pointed out to him all he could see was "a bit of a heap of dirt and one or two broken bricks".

He also referred to Lankey Town which was an early settlement in the Waitohi Gorge, and "... the small flat where it was built has been cultivated there should still be signs to trace it by. When I first remember it there was a street about five or six chains long with the remains of buildings on both sides and a few others scattered about; there was also a hotel a short distance away from the other buildings". He attributes the name to it being a settlement of weavers from Lancashire to weave the flax which was abundant in the area.

6.2. Field Investigation

During the field visit on 7 September, the old woolshed #H44 in the Mt Selfe area on the District Plan was noted (Plate 1). This large woolshed sits high over the Waitohi River. It will not be affected by dam construction or flooding. The Hurunui flats upstream of Jacks saddle where the proposed pipeline is to be located was noted to be heavily grassed, and with negligible surface visibility (Plates 2 and 3). The lower gorge and the Domain were then inspected, but the heavy grass cover prevented any ground visibility, and there were no above ground features (Plates 4 and 5). Attention was given to the details provided by Hewett above, but there were no indications of bricks, black porter bottle glass, ceramics or other evidence of early settlement. According to local sources however, the locations of Lanky Town and the Waitohi Peaks Settlement were mainly on the open land at the entrance and north of the river. It was not possible to assess any potential impact from dam construction or the route of the proposed canal storage to distribution would have on these historic sites.

The Waitohi valley upstream from Seven Hills was also visited (Plates 6 and 7). About 2 km before Hurricane Gulley I came on to a paddock with ewes and lambs, and did not go further. However, this much of a view of the Waitohi valley indicated that the grass cover would prevent any meaningful ground visibility, and the flats did not seem to have any indications of early stock yards or musterer's huts. A close examination of Google Earth imagery has also indicated no built structures on the valley flats.

Up one of the side valleys a rockshelter was noted (Plate 8). This was about 13 metres long with a 2 metre wide floor (grid reference NZ Transverse Mercator E1555991 N5254371). There were no artefacts seen or any other indication of use. This rockshelter is probably well away from any potential effects from the proposed development. However it indicates that there may be other rockshelters in the project area, and if so, some may have been occupied.

6.3 Summary

The issues which have come out of these investigations are as follows:

1. Maori greenstone trail. Approximately 14 km of the greenstone trail passes through the project area. This includes the section from the bridge crossing the Waitohi River at the bottom of the gorge, up the

Waitohi River to Hurricane Gully and over into the Hurunui. This therefore has the potential to have sites related to relatively heavy prehistoric use, and may be affected by the proposed development. There is the chance of the remains of Maori camping places, most likely indicated by ovens and scattered fire-cracked rock, stone flakes, and possibly greenstone manufacturing by-products. There is even a chance a cache of greenstone blocks. About half of this route goes through tussock and matagouri covered river flats and hill slopes, and over a landscape which was similar to early Maori times. As a landscape therefore it may have a cultural value to tangata whenua.

There also is the possibility of an alternate route avoiding the Maori Gully climb by continuing along the Waitohi River and crossing further up-stream, such as Surveyors Stream. If so, there may be greenstone trail sites further upstream on the Waitohi River.

2. Gold rush trail. In the 1860s the entrance to the Waitohi Gorge was a staging point for the push up past Lake Sumner and then over the Harper Pass. Blake's Road which was built at this time and went up the Waitohi Gorge and Jacks Stream and over at Jacks Saddle to the Hurunui valley. The entrance was readily accessible by wheeled vehicles so that supplies could be brought to a pub and other facilities there. Evidence for the location of the Leith Black Hotel and other buildings was not found although there should be artefacts and perhaps foundations remaining.

The 3 km of the lower gorge may therefore have camping places or huts belonging to this time, possibly indicated by fireplaces, glass and ceramics. However, most of the evidence would be at the entrance. The presence of abundant broken black porter bottles is a likely indication of a pub, and there also may be foundations for a fireplace, stump, post holes and other evidence for the structure. Any ground disturbance in the area is likely to produce such evidence. The modern road up the north side has probably been built over the 1860s road, but there may be some of it still remaining. It appears that the earlier track through the gorge was on the south side of the river (McRae 1993:43). Helpful details may be available in the descriptions by Caroline Chevalier's "Reminiscences" in the Alex Turnbull Library.

3. Lankey Town and The Peaks. These settlements were in the 1860-1890s, though more concentrated on the plains at the base of the mountains north of the gorge. This is the area crossed by the proposed canals. These sites are likely to be conspicuous for the presence of blue on white china, early glass and bricks in the event of any ground disturbance. The descendants of some of the original inhabitants are still in the area, and it may be possible to obtain oral history or diary information about where some of the buildings were. The 1891 survey plans also should be consulted for the locations of buildings and other structures.

4. Pastoral runs. Sheep grazing in the area began with the establishment of Horsley Down in 1852 about 10 km east of the Waitohi Gorge. Since then there have been stockmen ranging over the area and setting up camps in innumerable locations. Frequently used locations would have resulted in fireplaces and shards from drink bottles or other materials may have accumulated, and there may have been temporary yards. There also may have been early musterer's huts and stock yards. The Waitohi valley is also part of the "Virginia country" which is mentioned in Acland (1975:281), apparently being grazed in the 1880s.

7. VALUES

No archaeological or historical sites have been identified in the area indicated for the proposed development. This is assuming that the woolshed H44 is not threatened. However, the project area has been the scene of considerable activity in both prehistoric and historic times. All of the present archaeological evidence would be buried or on the surface covered by grass. There is a very high likelihood that such evidence exists, especially the Lower Gorge and entrance (Figure 8).

The proposed flooding itself is not likely to cause further damage to the archaeology. The main potential for impact is the ground disturbance related to the construction of dams, canals, pipeline, tunnel, and various other activities. The main potential to affect archaeological and heritage values are as follows:

1. The area most likely to be affected is at the gorge entrance (Figure 8). This is where a dam is proposed and a canal is planned. It may have been a stopping place on the Maori greenstone trail, and was a major historic area between 1860 and 1900. Although no locations have been recorded, the remains of historic sites have been mentioned, and it is likely that documentary information or local knowledge can be used to help to locate them.
2. The proposed dam at Hurricane Gully is also where there may have been camping by Maori on the greenstone trail. There also may have been pastoral camping and use there. This is a landscape which has been little changed since the time it was used by Maori. This may be of special interest to Maori and requires consultation.
3. The proposed dam construction at the start of Inches Road would have to ensure that the H44 woolshed was not damaged.
4. The proposed canal construction may encounter some of the 1860-1900 historic sites.

8. RECOMMENDATIONS

The provisions in the regional and district plans quoted above, as well as the HPA and RMA are relevant to the findings of this assessment. In order to protect archaeological and historic heritage the following is recommended:

Recommendation 1. Archival study. Historic archival research is needed to locate old survey plans and early documents, including the Caroline Chevalier account as well as the recovery of oral history (see McRae 2001:6) is needed as part of the planning of the project. This is to identify the location of historic sites, and for field visits to be made for ground truth so that the historic sites can be avoided. This process is important to complete before the final planning.

Recommendation 2. HPT Authority. Because of the potential impact on archaeological and historical sites, an Authority from the Historic Places Trust is required.

- This authority should include a monitoring program for all ground disturbance activities. This would require an on the ground observer.
- Where possible any sites found should be avoided from further damage.
- If damage or destruction is not avoidable, mitigation in the form of archaeological excavation is needed.
- The results of this work and analysis of the information recovered need to be compiled into a report

Recommendation 3. Maori consultation. Maori consultation with the appropriate runanga is needed, and it is possible that a Cultural Impact Statement would be requested. The potential effects on the landscape may be a particular concern.

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FIGURES

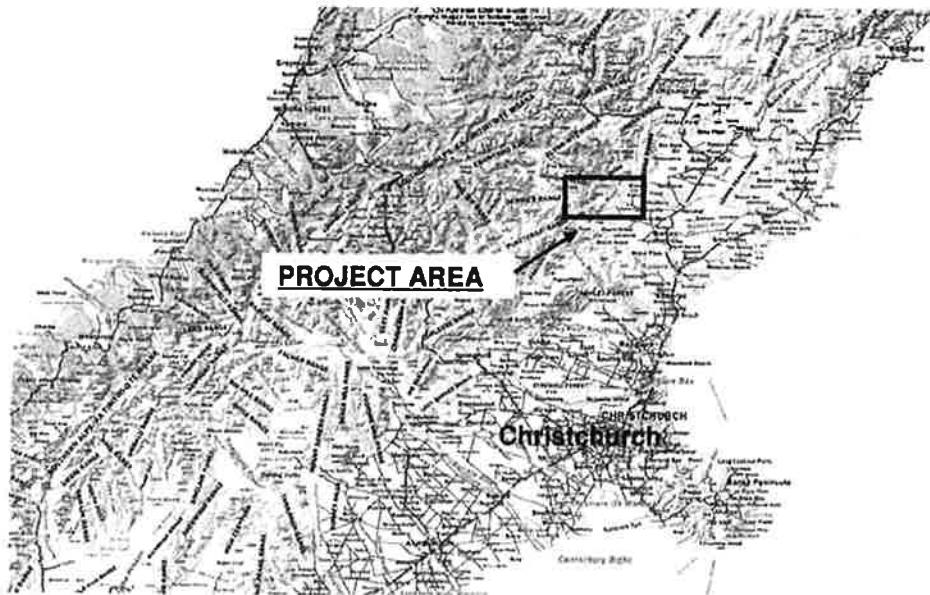


Figure 1. Location of project area.

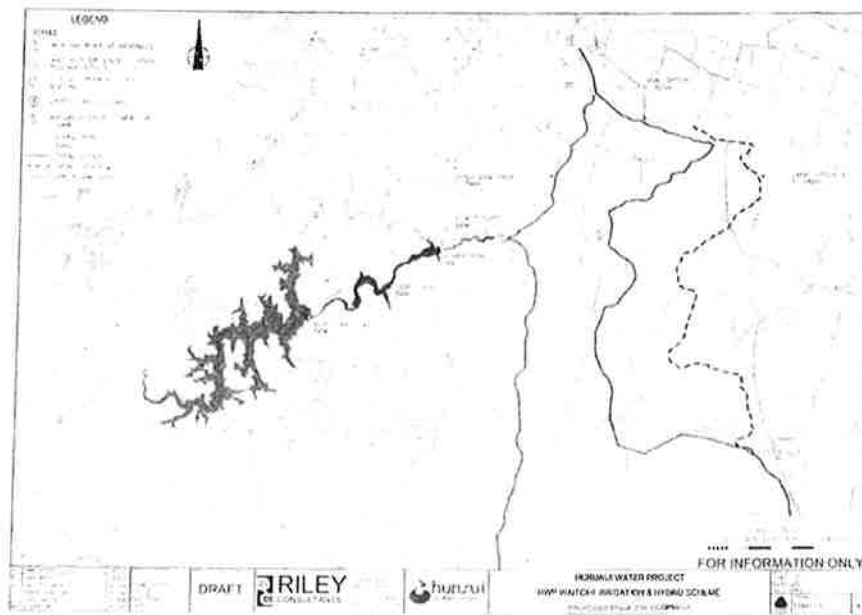


Figure 2. Map showing water storage and details of the HWP Waitoхи Irrigation and Hydro Scheme

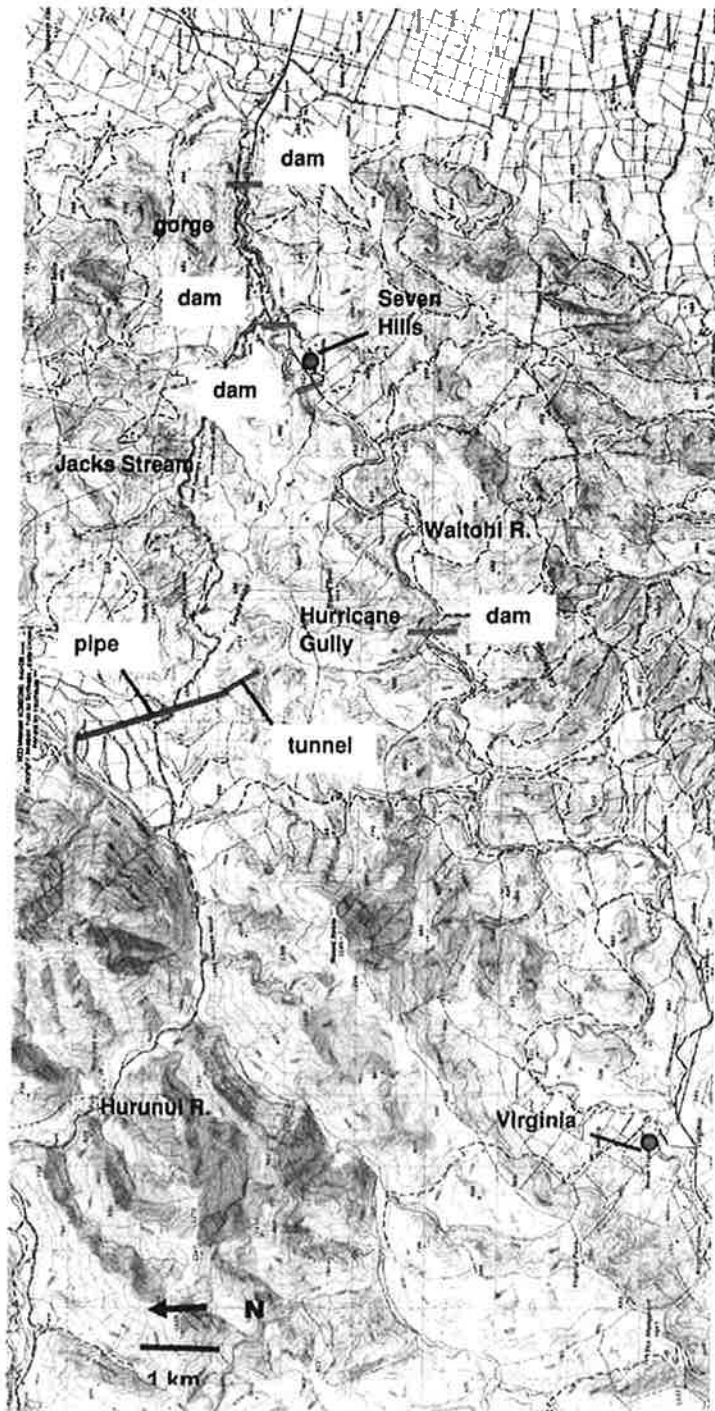


Figure 3. Development sites proposed for the project area.

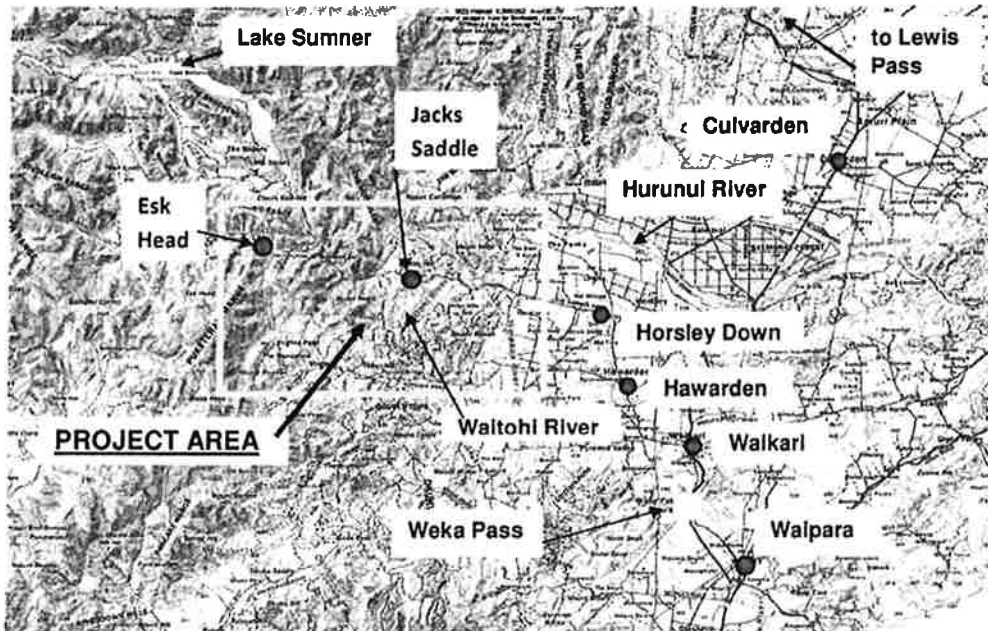


Figure 4. Project area located in the Hurunui catchment.

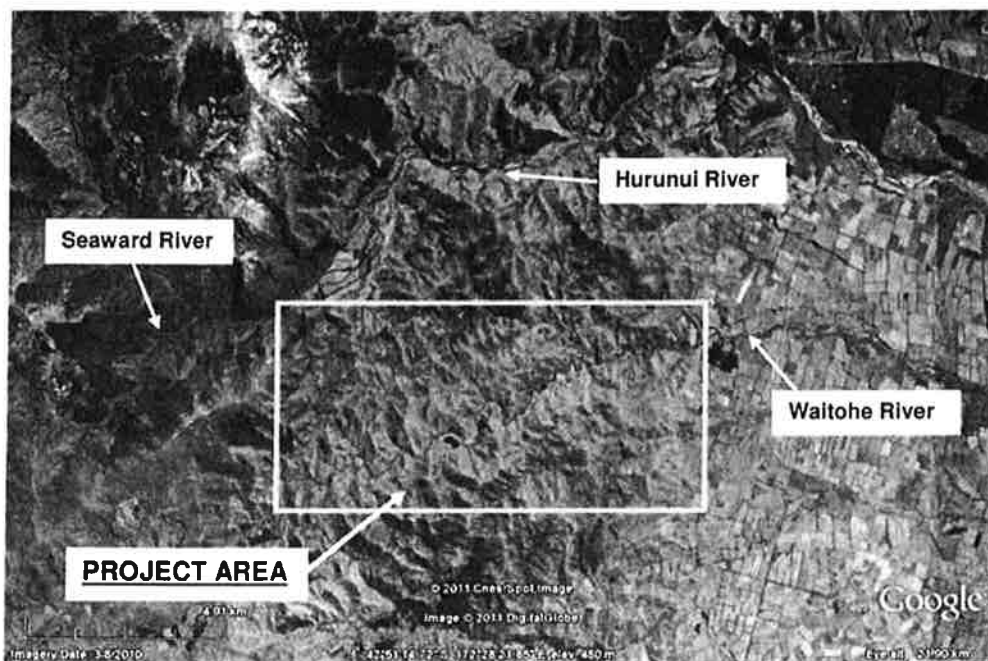


Figure 5. Terrain of project area from Google Earth.

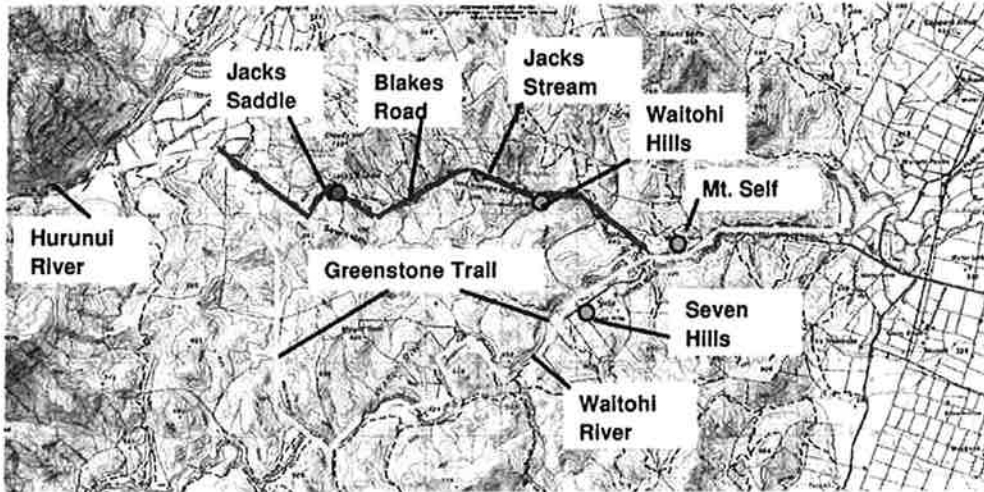


Figure 6. Location of the historic travel route for the Maori greenstone trail and the track used for the goldrush. Modern homesteads shown.

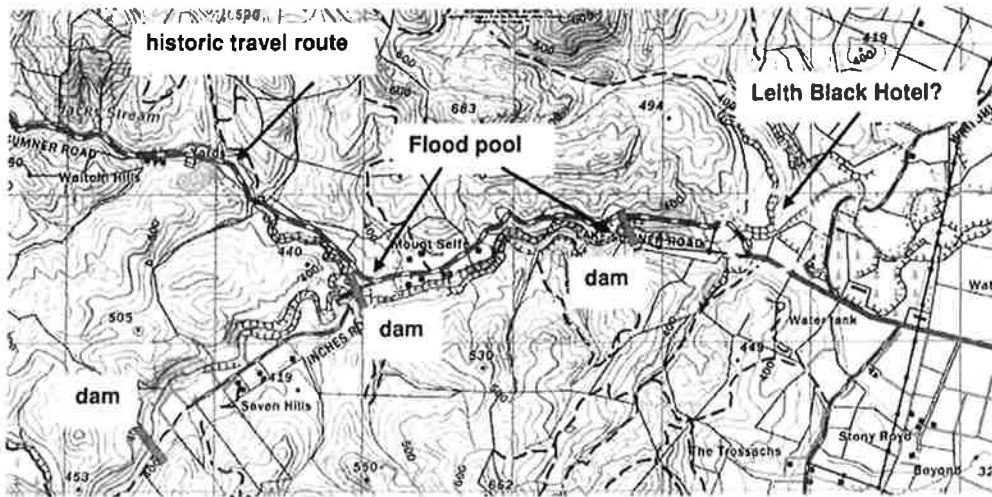


Figure 7. Location of main impact zone from proposed works.

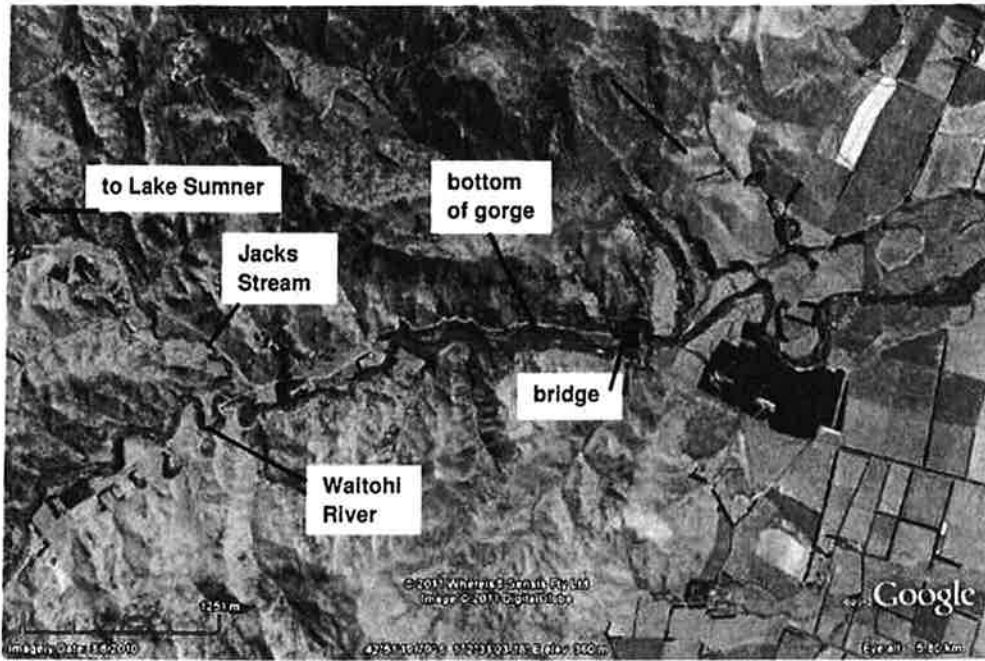


Figure 8. Lower gorge of the Waltohi River, showing ground conditions. This is the area where the most archaeological evidence is likely.

PLATES

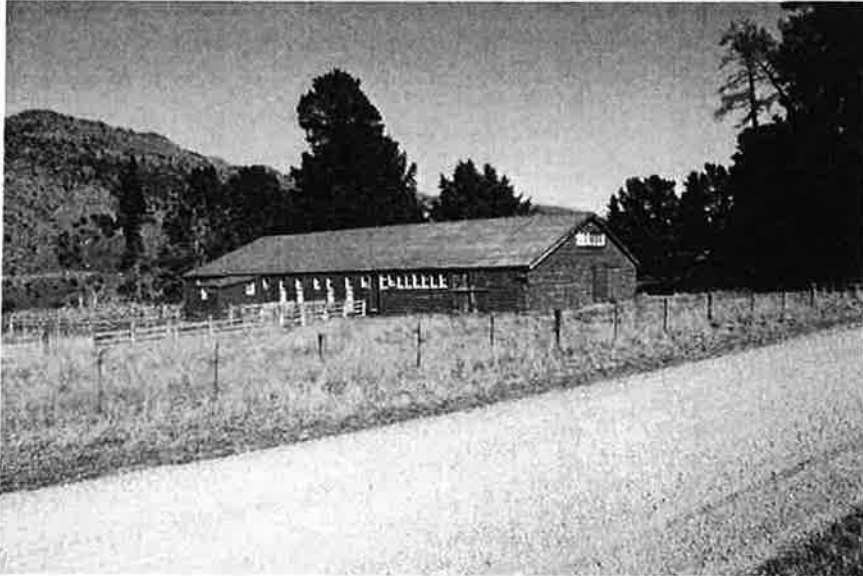


Plate 1. Woolshed, District Plan #H44, in the Waitohi River Gorge.



Plate 2. Hurunui River valley where the water is to be pumped into the proposed Hurricane Gully water storage.



Plate 3. View south up the side of the Hurunui valley in the direction of the proposed pipeline.

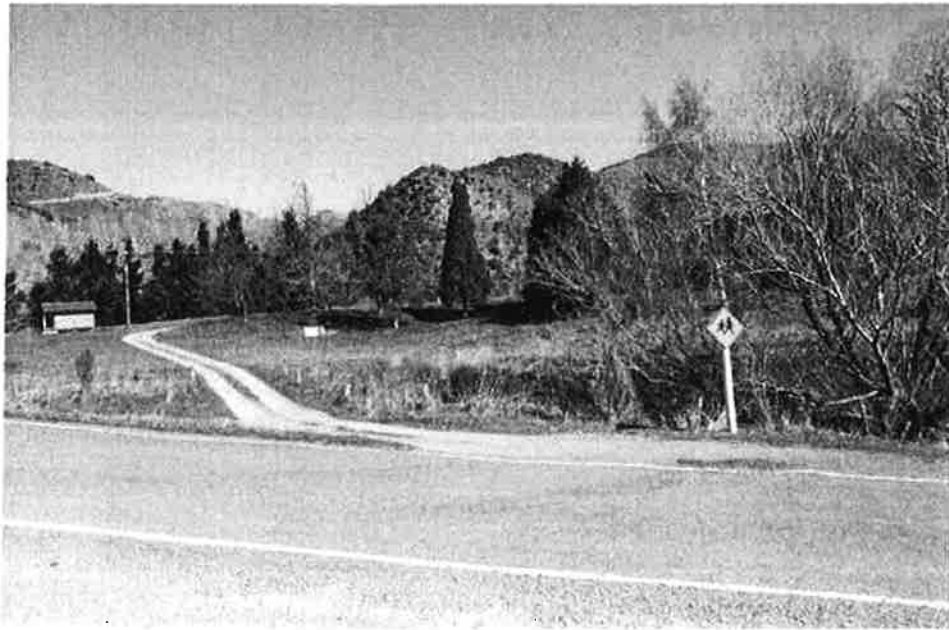


Plate 4. The Waitohi Reserve at the start of the Gorge.



Plate 5. Valley bottom at the start of the Waitohi Gorge.

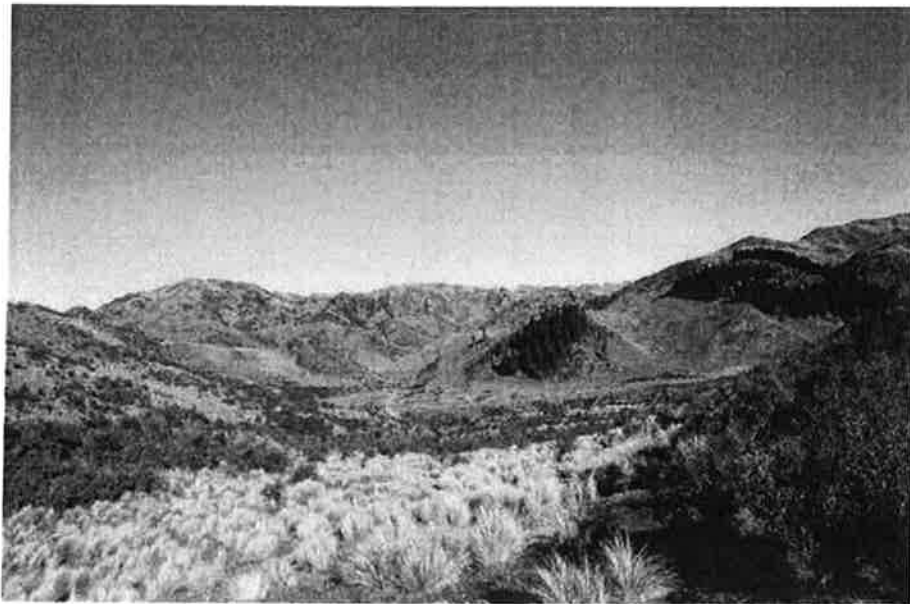


Plate 6. View of the Waitohi valley above Seven Hills.



Plate 7. Waltohi valley below Hurricane Gully.



Plate 8. Rockshelter seen up a side valley of the Waltohi river.

