



15 April 2016

Marie Long  
Director, Planning, Permissions and Land for Director-General  
Department of Conservation  
P O Box 10420  
Wellington 6143

Dear Marie

**RE: Waitaha Hydro Scheme – Revised Landscape Proposal**

As discussed with you previously, Westpower has undertaken additional work, utilising a range of specialist skills and experience, on design and mitigation to improve the integration of the intake and powerhouse into their respective environments.

Further mitigation has been developed using the iterative design process as described in *Natural Character, Landscape and Visual Amenity Assessment* (p 4 Appendix 9 of the concession application) and employed in preparing the Amended Headworks Proposal submitted to DOC in March 2015.

Involved in this process were: Boffa Miskell (environmental planning and design); Westpower representatives; engineers - Stephen Matheson (Mitton Electronet Ltd); and Ian McCahon (Geotech Consulting Ltd) – all of whom have been integral in developing the proposal in a comprehensive manner to ensure that the proposals are both practical and feasible, and appropriate to the location.

To further assist in this process and provide an additional and alternative perspective, Westpower engaged the expert services of Di Lucas (Lucas & Associates Landscape Architects) who has extensive experience in landscape and design matters.

The resulting attached material is a result of this collaboration. New photo simulations of the headworks and powerhouse site have been prepared, and commentary provided to outline the changes.

Attachments:

1. Letter (13.4.2016) Di Lucas
2. Memo (14.4.2016) J Bentley, Boffa Miskell – Waitaha Hydro: Revised Headworks and Powerhouse Proposal
3. Revised Photographic Simulations (April 2016)

*West Coast's Locally Owned Electricity Distributor*

Westpower Limited  
146 Tainui Street  
PO Box 375, Greymouth  
Telephone 03 768 9300  
Facsimile 03 768 2766

It is considered that these further iterations to the intake and powerhouse design and layout will better assist in integrating this proposal into this environment taking into account the landscape values and that the provision of more detail will further assist the decision maker.

If you have any questions about the attached material please do not hesitate to contact me.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'R Griffiths', written in a cursive style.

**Rodger Griffiths**  
General Manager - Assets and Engineering Services



Marokapara  
351 Manchester Street  
Christchurch 8013  
Aotearoa New Zealand  
03 365 0789  
theteam@lucas-associates.co.nz  
www.lucas-associates.co.nz

Landscape Planning  
Urban & Landscape Design  
Resource Management  
Heritage Conservation  
Landscape Ecology

13 April 2016

TO WHOM IT MAY CONCERN

### *Westpower Waitaha Hydro Proposal*

Beginning in 2013 with addressing the powerline design, I have been variously consulted to review the design of the infrastructure for the hydro development proposed on the Waitaha River. Last month I was invited by Westpower staff to review the proposed intake and powerhouse designs. I expressed concern at their forms and finish. The designs were revised and then further reviewed in efforts to improve their sensitivity to the highly natural landscape context.

The revised designs provide an improved response.

The vertical intake components in the bank would be of organic, integrated forms and set at lower elevation; their concrete surfaces roughened to quickly weather.

The in-stream intake components would form a complementary group with rusted-steel capped horizontal surfaces suitably recessive.

Downstream, rather than a stark gable building placed at right angles out in the river corridor, the Powerhouse has been completely redesigned. The form has been modulated vertically and horizontally to both step down from the bank and also step downstream. Fussy detailing has been removed. Walls would be rough, dark-coloured concrete of low LRV. The raw bunker form would be nestled down with a river island bund and local native plantings.

I have not undertaken a landscape assessment of the proposed scheme. However in reviewing infrastructure components, the iterative processes have resulted in design improvements that I consider would enable their greater integration into this gorge landscape.

A handwritten signature in purple ink, appearing to read 'Di Lucas'.

Di Lucas

B Sc, MLA, Fellow NZILA  
Director, Lucas Associates  
[di@lucas-associates.co.nz](mailto:di@lucas-associates.co.nz)



# Memorandum



Boffa Miskell

- Auckland**  
P O Box 91250  
Level 3, IBM Centre  
80 Wyndham Street  
Tel: 64 9 358 2526 | Fax: 64 9 359 9300
- Wellington**  
P O Box 11340  
Level 4, Huddart Parker Building  
1 Post Office Square  
Tel: 64 4 385 9315 | Fax: 64 4 384 0889

- Tauranga**  
P O Box 13373  
Level 2, 116-66 Cameron  
Cnr Cameron Road & Wharf Street  
Tel: 64 7 571 5511 | Fax: 64 7 571 3333
- Christchurch**  
P O Box 310  
Ground Floor  
4 Hazeldean Road  
Tel: 64 3 356 8901 | Fax: 64 3 356 7629

---

|              |  |
|--------------|--|
| Attention:   | Sue Cotton   |
| Company:     | Westpower  |
| Date:        | 14 April 2016  |
| From:        | James Bentley  |
| Message Ref: | Waitaha Hydro: Revised Headworks and Powerhouse Proposal |
| Project No:  | C12108   |

---

This memorandum describes further revisions made to the headwork and powerhouse sites following internal discussions at Westpower. The changes have been reflected in the accompanying illustrative material which accompanies this memorandum and includes revised photo simulations and an updated Planting Rehabilitation Plan. As outlined in the original application the photo simulations represent the site at 5 years post construction.

## Power House Site

Essentially the following design changes have occurred to the powerhouse site:

1. The built form of the building has been stepped slightly to provide relief to the longer façade. The building height has been reduced by 2 m and now stands at 8 m. Furthermore, an angled mono-pitched roof sloping towards the river has also assisted in reducing the utilitarian appearance of the original powerhouse design (which had been based on the Amethyst scheme) in this landscape setting. Window, trims and other ancillary building treatments have been minimised or removed to further improve visual coherence.
2. The building along with all of its associated architectural components have been painted 'ironsands', as proposed in the new draft conditions currently being developed by DOC. The walls being rough, dark-coloured concrete will also have a low reflectance value. This will assist in reducing the prominence of the building allowing the building to better recede into the landscape.
3. The switchyard has been relocated to the upstream side of the building reducing visual prominence of the powerhouse when viewed from down-stream. The reconfiguration of the layout is illustrated on the *Powerhouse Site, Planting Rehabilitation* (p 4 Revised Photo Simulations).
4. The transmission tower in the switchyard has been removed entirely and the transmission line will be undergrounded for approximately 200 m downstream of the powerhouse.
5. The extent of hardstanding around the powerhouse has been reduced to allow for more landscaping and revegetation, which will assist visually soften the appearance of the building.
6. The bund has been designed to allow for a maximum 1 m profile above existing ground level, as outlined on the updated Planting Rehabilitation Plan. Undulations (along with planting) on the top of the bund will also assist to further blend this feature into the landscape. The bund will appear naturalistic in form, where river-side boulders and rocks will be arranged on the river side, which will blend with existing river material. A small cross section through this feature is also included.
7. A proposed planting strategy and planting schedule for the powerhouse site is also included on the Planting Rehabilitation Plan.



Five updated photo simulations illustrating the changes made to the powerhouse site are attached to this memorandum. Photo simulations are essentially a method of illustrating a proposal and do not convey real-life. The photo simulations represent a typical outcome of the proposal five years after construction. These replace the photo simulations PH2, PH3, PH4, PH5 and PH6 in the original application document (*Appendix 9 – WHS – Photo Simulations Supplement*).<sup>1</sup>

The realignment of the walking track as described in the material submitted to DOC on 19.1.2015 means walkers can avoid the powerhouse site. *Waitaha Hydro Scheme - Response to DOC request for further information - Recreation 15.1.2015*

## Intake Site

The changes that have been made to the intake site are included below.

1. Both the design of the intake and portal structures have been further refined to ensure that there is a visual connection between them which has been achieved by the symmetry provided by the arch. Concrete surfaces will be textured and faceted which will assist in colonisation by moss and lichens, further weathering the appearance of the structures and blending the appearance of the structures into their natural environment. Where possible the retention of as much natural rock formation around these structures will be kept insitu.
2. The tunnel portal has been designed so that it will now sit flush with the face of the bank rather than protrude out from the bank. This will further assist in reducing the engineered appearance of the portal.
3. To ensure that the proposal reduces its footprint further, the level of the tunnel portal has been lowered by approximately 1 metre. This lowering has allowed for the small track access to the river at its base, to be removed (as shown in the previous photo simulations provided in the Amended Headworks Proposal – March 2015). The removal of this access track to the river will visually reduce the overall footprint of the proposal and avoid further engineering works and disturbance to the river edge.
4. Through conversations with the engineers, a steel-capped lip will be required along the top of the weir and will be used on the upper surfaces of the intake wall structures. Whilst this is a further element that has been introduced to the intake structure, it is not considered that this will change or alter the visual effects already assessed. Any capping will be seen and read as part of the collective infrastructure of the intake and will, as time advances, reduce in colour to more muted brown/black tones as the steel rusts. This has been added to the revised Photo Simulations.
5. Two updated photo simulations of the intake structure have been prepared following the amendments. These are attached to this memorandum. These photo simulations have been illustrated with the river flowing a relatively low-flow (approximately 10 cumecs). Throughout periods of higher flows and during floods, most of the intake structure will be submerged. These replace Photo Simulations IN1a and IN2a in the Amended Headworks Proposal – March 2015.

## Suggested amendments to Conditions

Regarding the requirements under item 10 – Landscape Management Plan within the new draft special conditions proposed by DOC, the following comments can be made, most noticeably within the 'added parts' highlighted in yellow in that list:

- (a) All structures and activities associated with the Scheme are to be constructed (and coloured) in a manner that is in keeping with their surroundings.

*Comment: Yes, agree.*

- (b) Further to condition 10.3 (a) the Concessionaire must ensure the power house building including the doors and trim is coloured 'ironsand'.

---

<sup>1</sup> Note that the model illustrated under the panoramic image on PH2 shows the incorrect alignment of the small track extending from the powerhouse to the tunnel portal. It is illustrated correctly on the photo simulation.

*Comment: Yes, agree.*

- (c) The Concessionaire must 'face' the visible parts of the intake, weir, portal and any walled retaining type structures with site rock to ensure these structures achieve a better compatibility with the surrounding environment.

*Comment: As outlined earlier, additional design work has been undertaken with respect to the intake structures to further integrate them into the natural environment.*

*Through further discussions with the engineers and landscape experts, it is considered impractical to 'face all the visible parts' 'with site rock'. This is principally due to the high-energy environment and the likelihood of something looking very obviously unnatural if placed incorrectly.*

*There may be opportunities to place site rocks to some disturbed areas, for example above the high level intake to reduce any potential disturbance that may occur during the construction phase. The extent and practicalities of doing this will need to be determined after the site disturbance has occurred.*

- (d) The Concessionaire must provide a cross section and longitudinal elevation of the form of the bund (for the flood protection bund at Alpha Creek) and a suitably detailed planting plan around the powerhouse/ bund area as part of the proposed 'Construction Management Plan' for approval prior to construction.

*Comment: A cross section through the bund has been provided on the updated Powerhouse Site, Planting Rehabilitation Plan (p 4 Revised Photo Simulation). Some further notes on planting have also been provided. Instead of a longitudinal section of the bund, its approximate alignment has been illustrated on this figure.*

## **Conclusion**

It is considered that these further refinements to the scheme will better assist in integrating this proposal into this highly natural environment taking in to account the landscape values. An iterative design-led approach involving Westpower representatives, expert landscape planning and architectural advisers has been 'tested' by the engineers and the best probable result achieved, in this very challenging environment.

It is considered that this further iteration of the visual aspects of the scheme has provided further clarity to the components of the scheme, further assisting the decision maker.

**James Bentley**

Principal Landscape Planner

14 April 2016

Attachments: Revised Photo Simulations PH1, PH2, PH3, PH4 and PH6  
Revised Photo Simulations IN1a and IN2a  
Revised Powerhouse Site, Planting Rehabilitation