

isthmus

PROPOSED WAITAHA HYDRO SCHEME

LANDSCAPE AND URBAN DESIGN EXTERNAL REVIEW

Client: Westpower Limited
Project: Proposed Waitaha Hydro Scheme
Report: Landscape and Urban Design External Review
Status: Final to issue
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INTRODUCTION

- 1 Isthmus were engaged by Westpower to review the 'Landscape and Visual Amenity Assessment' ('**Assessment**') prepared by Boffa Miskell Ltd for the proposed Waitaha Hydro Scheme.
- 2 The Scheme is a 'run of river' project entailing a weir that will divert part of the flow of the Waitaha River through a 1.5km tunnel feeding a small power station on the opposite side of a foothill range of the Southern Alps. Water from the power station will discharge back to the Waitaha River approximately 2.6km downstream of the intake. The section of river in which the flow will be reduced (the 'abstraction reach') includes the 1km Morgan Gorge, a wild and barely accessible chasm through the range.
- 3 The main potential natural character, landscape and visual amenity issues are:
 - Effects resulting from structures and works at (i) the intake site, and (ii) the power station site;
 - Effects resulting from changes to natural flow of the 2.6km section of the Waitaha River;
 - Effects of these matters on the values of the broader catchment; and
 - Temporary effects during construction.
- 4 A visit was made to the site as part of the review. It included a helicopter overview of the upper catchment and ground inspections of the intake and power station sites. An inspection was also made of the intake and power station sites of the existing Amethyst Hydro Scheme near Hari Hari which is similar in scale to the proposed Waitaha Scheme.
- 5 The following sections of the review cover:
 - the methodology;
 - appraisal of the existing landscape;
 - analysis of effects, assessment against the relevant statutory documents; and
 - the measures to avoid, remedy or mitigate adverse effects.¹

METHODOLOGY

- 6 In summary, the methodology is sound. The Assessment's structure covers the matters listed in the RMA Fourth Schedule (including description and evaluation of existing environment, description of proposal, relevant statutory context, identification of issues, appraisal of the nature and magnitude of effects, and recommended measures to avoid, remedy or mitigate adverse effects), and follows the NZILA Best Practice Guide 2010 ('**Best Practice Guide**'). The methodology is outlined as an appendix, and terms are defined with reference to the Best Practice Guide or case law where relevant. The methodology has been appropriately applied in the context of the project.

DESCRIPTION AND EVALUATION OF EXISTING ENVIRONMENT

- 7 The existing landscape is **described and evaluated** in a sound manner. The description covers all the relevant scales including the individual sites for the proposed works, the catchment as a

¹ The review brief is attached as Appendix 1.

whole², and the broader regional context. It addresses biophysical, perceptual and associative aspects of the landscape (in line with the Best Practice Guide and recent case law), and cross-references to other disciplines including reports on recreation, ecology and river processes.

- 8 It is thorough and focuses on aspects relevant to the proposal. The only obvious matters on which further comment might be provided are:
- Cross-references to the recreational assessment where there is a direct overlap with landscape, specifically the role of landscape wilderness values for recreation; and
 - References to any historical or tangata whenua associations. (At the least the Assessment should be explicit that these aspects of the landscape have not been addressed and would need to be factored in by some other means).
- 9 I agree with the **delineation** of the upper and lower catchments as two distinct 'landscapes'. The upper catchment is a natural landscape while the lower catchment is settled and farmed. However, a case could be made for the boundary between the two landscapes to be drawn a little further upstream in the vicinity of the power station site rather than at Macgregor Creek. The range pierced by Morgan Gorge separates a wilderness upstream catchment from a settled landscape. While the immediate surroundings of the power station site are natural, the site is only approximately 1.5km upstream of farmland and is topographically part of that lower catchment. In any event, I agree with the Assessment that the area downstream of Morgan Gorge, including the power station site, has a different character and value.
- 10 I agree with the Assessment's **evaluation** of the upper catchment as having a degree of **natural character** that is 'very high, almost pristine'. The Assessment does refer to aspects that detract from natural character including tracks, huts, the swing bridge and the lack of animal pest control. In my view such matters should not be overstated: The structures are incidental and they are associated with wilderness recreation. Animal pests are ubiquitous in mainland New Zealand's natural areas.
- 11 **Outstanding natural features and landscapes** have not been identified in a systematic manner in either the Westland Regional Policy Statement or the West Coast District Plan. The Assessment consequently has taken the appropriate step to evaluate the Waitaha River catchment for this purpose. It concludes that the upper catchment would likely meet the requirements of an 'outstanding natural landscape' and that it contains 'outstanding natural features' including Morgan Gorge. I agree with these appraisals. In my view it quickly becomes apparent that the upper catchment is an outstanding natural landscape taking into account such attributes as its dramatic topography, the sequence of landscape types from ice and snow covered mountains to lowland forest, the variety of river features, and the wilderness-like³ character.
- 12 The Assessment comments that such landscapes are not uncommon on the West Coast. While that is one factor that might be taken into account when considering whether an activity is 'appropriate', it is worth noting that the number and extent of such landscapes is one of the things that make the West Coast special and should not detract from considerations of 'outstandingness'. While 'outstanding natural features and landscapes' are assessed in the context of a region or district, they are not to be assigned in terms of quota.

² The Assessment includes the Kakapotahi River as part of the Waitaha Catchment. The Kakapotahi River joins the Waitaha River only some 3km above its mouth, well downstream of the proposed Waitaha Hydro Scheme. For most landscape intents and purposes it can be regarded as a separate catchment in terms of this proposal. However, this is a technical distinction that makes little difference to the Assessment.

³ I use the term 'wilderness' in its general sense rather than the more specific 'wilderness areas' as defined by the Department of Conservation.

DESCRIPTION OF PROPOSAL

- 13 The Assessment provides a brief overview of the project in the Introduction (Section 1.1), and otherwise describes aspects of the project in more detail in the relevant sections of the effects assessment (for instance the details of changes to river flow are described in the section dealing with natural character effects).
- 14 In my view the description is adequate in most cases to understand the effects. I consider further detail could be provided in relation to the intake site, and particularly construction works at that location, where potential adverse effects are greatest. These matters are discussed further below in paragraph 34.

ASSESSMENT OF EFFECTS

- 15 In my view the Assessment correctly identifies the main potential natural character, landscape and visual effects, and analyses them in a thorough and methodical manner.

Effects from reduced river flow

- 16 The Assessment provides the relevant data on changes to river flow which can be paraphrased as follows:
- The Waitaha River has large fluctuations in response to both seasonal cycles (spring thaw) and weather;
 - Floods and freshes are frequent;
 - Median flows range between 10.3 cumecs in July and 31.8 cumecs in December;
 - Median **low** flows range between 8.2 cumecs in July and 17.8 cumecs in December;
 - The project will take up to a maximum of 23 cumecs (depending on option);
 - The project will maintain a residual flow (within the abstraction reach) of 3.5 cumecs, which will occur between 208 – 241 days a year (depending on option);
- 17 The Assessment concludes there will be a 'moderate' level of effect within the abstraction reach based on the following factors:
- That effects on 'abiotic' and 'biotic' components of the landscape would be minor - sediment transport and geomorphological processes will continue, and ecological effects will be low (the Assessment relies on other reports in this regard);
 - That the residual flow will have a naturalistic appearance and that flows will continue to fluctuate in a naturalistic manner, with floods and freshes;
 - That research suggests people find it difficult to appreciate differences in flow rates.
- 18 I accept these conclusions, but make the following additional comment: While the reduced river flow will still have a natural appearance, the project will change perceptions of the Morgan Gorge as a natural wilderness river for those people who pass the power station and/or the intake (for instance those people following the track or crossing the swing bridge). Such people will understand that the river flow is modified.
- 19 The Assessment concludes that the effects of the Scheme on the values of Morgan Gorge as an Outstanding Natural Feature will be 'low' and that the Scheme will not change its 'outstandingness'. This conclusion is based on the continued naturalistic appearance of river flows, and the continuation of the geomorphological processes responsible for forming the gorge. The Assessment also notes that few people can experience the gorge.

- 20 In my view the Morgan Gorge and that section of the Waitaha River are one and same when considering the Gorge as an outstanding natural feature. While I agree Morgan Gorge will remain an outstanding natural feature, there will be nevertheless be some effect on the 'intrinsic' naturalness of the Gorge and perceptions of it as an unaltered wilderness chasm. While the experience for most people is likely to be limited to the view from the swing bridge at the top of the gorge, the gorge is an 'intrinsic' feature that people are aware of, and it is a challenging wilderness for a small group of adventurers. Therefore I consider the effects would be greater than 'low'.

Effects at the intake and power station sites

- 21 The Assessment concludes there would be 'high' effects (natural character, landscape and visual) at both the intake and power station sites. Such effects would arise from the introduction of 'industrial-style' modifications in what are essentially natural wilderness settings, and related construction disturbance. The area within which such effects would be considered 'high' would be restricted to the immediate vicinity.

- 22 I agree with this analysis and make the following additional observations:

- 22.1 While the works will have an industrial appearance, they will be in keeping with a tradition on the West Coast of such relatively small scale works juxtaposed against a wild landscape.
- 22.2 In my view the degree to which such a feature might be accepted will depend on how 'surgical' the insertion of the structures into the landscape is, and the extent to which disturbance is minimised.
- 22.3 Of the two sites, the intake site is the more critical because (i) it is part of the remote and wild upper catchment landscape, and (ii) because it is in a more prominent location at a river cliff adjacent to the picturesque entrance to the Morgan Gorge chasm. The details of how the intake is constructed are likely to significantly influence the extent to which people find the works acceptable in this location.
- 22.4 By contrast, the power station site is less sensitive in that (i) it is part of the lower catchment valley, and (ii) it is in a less prominent location where the river terrace topography and vegetation could more readily accommodate such works.

Effects on the broader landscape

- 23 The Assessment concludes that the effects on the broader landscape (as an 'outstanding natural landscape') will be 'low' mainly because of the small footprint of the Scheme in relation to the upper catchment as a whole. It concludes the catchment will remain an outstanding natural landscape. Several additional factors are listed that would reduce the significance of the effects including (i) that the site is not within a National Park, (ii) the existing huts and tracks, (iii) the lack of animal pest control, and (iv) that the location of the works toward the modified end of the catchment away from the truly wild and more remote areas further upstream
- 24 I do not wholly agree with the 'dilution' analysis in this case. The intake site is at a strategic location that people are likely to pass either entering or leaving the upper Waitaha Catchment. As a result the effects cannot be wholly compartmentalised. Similarly, I do not consider the existence of tracks, huts and lack of animal control make much difference to the significance of

effects. Rather, in my view, whether the landscape effects are acceptable and the Scheme appropriate would entail consideration of the landscape matters **as a whole** including (amongst other things):

- The nature of the Scheme itself (i.e. that it is a run-of-river scheme that avoids damming the river, and there has been landscape input to the shape of the project),
- The extent to which the duration and level of residual river flows are acceptable, and
- Details of the intake structures, and how intrusive they are in the immediate vicinity.

25 In a similar vein the Assessment provides a matrix of degree of effects of the different project components in relation to natural character, landscape and visual effects. The degree of effects ascribed in the matrix ranges from 'high' effects in the vicinity of the intake and power station (and therefore 'more than minor'), to 'low' on the catchment as a whole. As above, while breaking the Scheme down in this way is a useful analytical tool, it is the landscape effects of the Scheme as a whole that are relevant.

Photosimulations

26 The 10 viewpoints used for photosimulations are fair and representative, and more than adequate to illustrate the Scheme.

- There are 4 viewpoints of the intake including 3 views from upstream, and one from downstream looking across the weir.
- There are 6 viewpoints of the power station including views upstream and downstream from varying distances, and from the opposite river bank.

27 The photosimulations have been prepared following 'best practices' including explanation/demonstration of the methodology, comparing 'before' and 'after' views, and including relevant information such as viewpoint location, date, camera and lens detail. The rendering of the structures appears accurate and realistic.

28 It is recommended that information about 'scale' (i.e. correct reading distance) and 'field of view' be recorded on the photosimulation sheets. While the methodology indicates all the images are produced to a reading distance of 500mm, it would assist users if such information was included together with the other parameters on the photosimulation sheets themselves.

29 I note that the photosimulations do not depict any disturbance to the ground outside the actual footprint of the works. Rather they depict a sharp ('clean') transition between works and the existing ground. This is not a criticism of the photosimulations (to do otherwise would involve conjecture given the details for such works have not been determined), but it does highlight the extent to which the visual integration of the structures with their natural landscape setting depends on minimal disturbance of that setting.

Construction effects

30 The Assessment assesses construction effects at both the intake and power station site taking account of construction sequencing (such as tunnelling from the downstream end to avoid the need for an access road between the power station and intake sites), requirements for temporary access and construction yards, and possible rehabilitation. I agree with the analysis in general terms. However, the assessment is constrained by the fact that details have not been finalised. Such lack of detail is not a concern for the power station site which is in a less sensitive location, and where it appears the topography and vegetation could readily absorb the works subject to normal good detail design and construction practice, controlled by conditions of

consent. The intake site, on the other hand, is in a more sensitive location and the potential for adverse effects is greater. This is discussed further below in the discussion on measures to avoid, remedy and mitigate adverse effects.

Measures to avoid, remedy and mitigate adverse effects

Avoidance

- 31 In terms of avoiding potential effects, the Assessment lists the landscape input into the selection of preferred weir location⁴ and the decision not to construct vehicular access to the intake site as effective measures taken to avoid adverse effects. It also refers to the nature of the project itself in that it will only require a low weir (avoiding damming the river) and the underground piping of the water diversion and penstock. I agree with this analysis.

Remediation and mitigation

- 32 The remediation and mitigation measures outlined in the Assessment are general in nature and aspirational rather than providing any certainty of outcome. As discussed, this is less of an issue with the power station site, although conditions would nevertheless be required to convert the aspirations into outcomes.
- 33 The intake site, on the other hand, is more critical in this regard. In my view the acceptability of effects at the intake site will depend on the details of the structures' design and construction. The works will require excavation and stabilisation of a steep river scarp currently supporting a natural assemblage of cliff vegetation. Care will be required to limit the extent of disturbance, to avoid such measures as 'shotcrete' stabilisation, and to facilitate re-colonisation by such vegetation where appropriate. Access roads will also be required on the steep river bank to connect the river bed with the upper portal, and the intake with the construction yard. Such works could potentially result in long term scarring and therefore careful attention is warranted into their alignment (for instance to avoid particular river bed and bank features), design and remediation.
- 34 In my view further information is therefore required of the details of such works or, alternatively, conditions that provide a means of controlling design, construction and remediation sufficient to provide surety of outcome. Without such surety, it is not possible to assess the degree or acceptability of effects for the intake site. Matters that are required to be addressed include (but are not limited to):
- The manner in which the portal is finished and the river cliff stabilised;
 - The 'architecture' of the weir, diversion channel, intake and tunnel portal -in particular the manner in which these structures intersect with the existing topographic features;
 - How the construction footprint is to be contained and effects minimised on the surrounding area;
 - The nature of the access road(s) between the construction yard and different components of the intake site, including how impacts on the river bank and river bed features are to be minimised or might be restored following construction; and
 - The restoration of the construction site.

⁴ Landscape input has helped to shape the project

STATUTORY PLANNING CONTEXT

- 35 The Assessment identifies the relevant statutory documents (RMA Part II, West Coast Policy Statement, Westland District Plan, and the West Coast Te Tai Poutini Conservation Management Strategy), and identifies provisions relevant to a landscape assessment of the Scheme. The Assessment has been framed in such a way to respond to these provisions.

SUMMARY

- 36 The Assessment follows a sound methodology, is thorough, and the findings are fair and credible.
- 37 I agree with overall conclusions, and provide some additional comments on specific matters. In particular, I also recommend further information be provided on the design, construction and remediation of the intake site (including the process and/or mechanisms by which these aspects will be controlled) in order to give decision makers sufficient surety of the effects. Such information is warranted because of the topographic features and strategic location of the intake site.

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26 February 2014

APPENDIX 1: METHODOLOGY FOR PEER REVIEW

Methodology for Peer Review of Natural Character, Landscape and Visual Amenity Effects Report

1. **Desktop review** of Natural Character, Landscape and Visual Amenity Effects Report
2. **Site visit**
3. **Statutory check** to ascertain what key issues have been identified – Conservation Act 1987, Resource Management Act 1991, Regional and District Plans, Conservation Management Strategy, any landscape assessments of the area
4. **Review the documents** to determine whether they have adequately covered the following specific aspects:
 - a. Does the methodology represent best practice and is it repeatable and in doing so would it produce similar results? Are there any 'gaps' in the methodology and, if so, what is needed to address them? Some assessments contain a lot of information and detail but fail to 'join the dots'. That is, does all the descriptive information, field work and graphics, assessment, etc support the outcomes and conclusions?
 - b. Description of the existing environment, natural character, landscape, visual amenity values.
 - c. Identification and description of the nature of the proposed development.
 - d. Has the assessment helped to shape the development of the proposal; did the preliminary / initial findings from the assessment lead to alternatives being explored and then adopted?
 - e. Identification of the visual catchment and viewing audiences.
 - f. Checking whether the viewpoints chosen for photomontages accurately reflect the viewing catchment. Has the methodology for carrying out the simulations been included, is it robust and does it represent best practice?
 - g. Where photomontages are not included, does the description of the visual effects accurately portray them - ie, can the reader form a picture?
 - h. Identification of anticipated natural character, landscape visual amenity and effects. Have all the relevant effects been considered? Has the significance of effects been interpreted correctly?
 - i. Has the assessment identified matters relevant to statutory documents including the Regional Policy Statement, District Plans, Conservation Act, CMS and the RMA?
 - j. Identification of proposed visual and landscape mitigation, options considered and recommendations.
 - k. Conclusions. Does the overall conclusion reflect the findings of the assessment?
 - l. **Feedback on findings** to author of *Natural Character, Landscape and Visual Amenity Effects* and review of any subsequent amendment to that report
5. **Prepare a report** on the findings of the review (of original and any amended report), including using audit matrix

Audit Matrix

The following matrix contains criteria that should be included in and assessment of landscape and visual effects reporting for consent, plan change or designation purposes.

- ✓ indicates an acceptable level of description and detail has been approved.
- ? means that the level of description and detail provided is marginal; and
- X means that no or an unacceptable level of detail and description has been provided.

Recommended Components for Assessment of Natural Character, Landscape and Visual Amenity Effects - Auditing	
a.	Description of the existing environment, natural character, landscape and visual amenity values.
b.	Identification and description of the nature of the proposed development.
c.	Identification of the visual catchment and viewing audiences.
d.	Checking whether the viewpoints chosen for photomontages accurately reflect the viewing catchment.
e.	If photomontages are not included, does the description of the visual effects accurately portray them - i.e. can the reader formulate a picture?
f.	Identification of the changes that are likely to occur and analysis of landscape, visual and natural character effects
g.	Identification of anticipated natural character, landscape visual amenity effects. Have all the relevant effects been considered? Has the significance of effects been interpreted correctly?
h.	Has the assessment identified matters relevant to statutory documents including the Regional Policy Statement, District Plans, Conservation Act, CMS and the RMA?
i.	Identification of proposed visual and landscape mitigation, options considered and recommendations.
j.	Does the overall conclusion reflect the findings of the assessment?