

Boffa Miskell



# McFetridge Lane & Awaiti Place Stormwater Remediation

Landscape & Visual Effects Assessment & Natural Character Assessment  
Prepared for Tauranga City Council



## Document Quality Assurance

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Cover photograph: View of proposed dam and spillway site from McFetridge Lane, Boffa Miskell 2020

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# 1.0 Introduction

## 1.1 Scope of the report

Boffa Miskell Limited (BML) has been engaged by Tauranga City Council (TCC) in September 2020 to undertake a Landscape and Visual Effects Assessment (LVA) for a proposed stormwater remediation measures and associated structures at four locations:

- **‘McFetridge Lane Stormwater Detention Dam’** – 365 Ohauti Road, Ohauti (Lot 3 DPS 15952 Block XIV Tauranga SD);
- **‘McFetridge Lane Stormwater Outfall’** – 8 McFetridge Lane, Ohauti (Lot 5 DPS 372010);
- **‘Awaiti Place Stormwater Detention Pond’** – 68 Awaiti Place, Ohauti (Lot 9 DPS 92263);
- **‘Poike Road Stormwater Outfall’** – 51 Harrisfield Drive (Lot 51 DPS 44671).

These areas that form the geographical scope of this assessment are otherwise referred to as ‘The Site’ in this report. The Site is zoned Passive Open Space, Green Belt and Suburban Residential within the Tauranga City Plan.

The following Landscape and Visual Effects Assessment & Natural Character Assessment assesses the landscape, visual and natural character effects of the proposed stormwater detention measures on the immediate and surrounding environment’s character.

## 1.2 Project background

Boffa Miskell have been involved in the project since 2018, across a range of disciplines and workstreams, including planning, ecology, landscape design and landscape planning. Work relating to The Site and the proposal undertaken by Boffa Miskell include:

### ***Awaiti Place Flood Hazard Management: Planning Assessment Report***

Boffa Miskell were engaged in 2018 to highlight the resource consent requirements likely to be associated with the implementation of a preferred flood hazard mitigation option and to provide recommendations to TCC in relation to consenting strategy.

### ***McFetridge Lane & Awaiti Place Stormwater Remediation: Ecological Impact Assessment***

Boffa Miskell have been engaged to undertake and an assessment of the ecological impacts resulting from the proposed stormwater remediation works. This is to form part of the application for Resource Consent.

### ***McFetridge Lane & Awaiti Place Stormwater Remediation: Landscape Design***

Boffa Miskell have been engaged to provide hard and soft landscape design relating to the proposed stormwater remediation works. This includes the application of appropriate planting (in response to to ecological and landscape assessment recommendations), landscape materials, access and amenity that align with the purpose of the Green Belt and Passive Open Space zones.

## 1.3 Assessment Process

This assessment has been undertaken with reference to the Quality Planning Landscape Guidance Note (Boffa Miskell Limited)<sup>1</sup> and its signposts to examples of best practice<sup>2 3</sup>. A full methodology is outlined in **Appendix 1** of this report. In summary, the effects ratings are based upon a seven-point scale which ranges from very low to very high. A site visit was undertaken during lightly-overcast weather by Blair Clinch (Boffa Miskell) on Thursday 10<sup>th</sup> September 2020, to assess the landscape and visual environment, confirm the visual catchment and photographically document views of The Site from a variety of representative viewpoints. Abiotic, biotic and experiential factors of The Site were observed and noted, to inform the assessment of existing natural character.

## 2.0 Existing Environment

### 2.1 Landscape Context

Ohauti and the wider landscape is defined by a series of ridges and gullies containing watercourses that run south to north, from the Pāpāmoa Hills to the Waimapu Estuary, Welcome Bay and beyond to the greater Tauranga Harbour.

Collector roads traverse the ridgelines that contain the various catchments, with residential development extending along the ridgeline and upper slopes the typical land-use and development pattern of the south-eastern suburbs of Tauranga.

Juxtaposing this typical development pattern are the natural gully systems, which comprise native and exotic vegetation-clad streams, tributaries and watercourses at the base of moderately sloping landform. Gullies and mid-slopes provide recreational open space opportunities in areas, with networks of walking tracks along gully edges and open space areas of varying scales adjoining.

The south-eastern Tauranga area has steadily transitioned from a rural-fringe, productive landscape to a suburban residential land use. This is evidenced in continued greenfield residential development, such as at Quail Ridge, currently under development and adjoining The Site.

The vegetated gullies and open space areas that bisect development areas serve as an important feature in reducing the perceived density of development patterns. These provide a sense of connection to the natural patterns and processes of the otherwise modified landscape.

For the urban environment, the watercourses within this gully and ridge landscape provide a vital role in managing stormwater volumes and flows within the increasingly developed catchments. This is evidenced by existing stormwater management infrastructure along many of these watercourses.

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<sup>1</sup> <http://www.qualityplanning.org.nz/index.php/planning-tools/land/landscape>

<sup>2</sup> Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, 2013

<sup>3</sup> Best Practice Note Landscape Assessment and Sustainable Management 10.1, NZILA

## 2.2 Site Description

The Site is divided into four areas; '**McFetridge Lane Stormwater Detention Dam**', '**McFetridge Lane Stormwater Outfall**', '**Awaiti Place Stormwater Detention Pond**' and '**Poike Road Stormwater Outfall**'.

**McFetridge Lane Stormwater Detention Dam** is located to the west of Ohauti Road and adjoins McFetridge Lane, which is located to the immediate north of this portion of The Site. The Site contains a watercourse at the base of the gully that flows from south to north, feeding to a constructed wetland area, surrounded by native and exotic vegetation, including large exotic trees, such as pine, cedar and eucalypts. Recreational pathways extend through The Site. The Site adjoins an Active Open Space Reserve (Ohauti Reserve) to the east, existing residential properties to the north and east, and a new residential subdivision (Quail Ridge), currently under development, to the west. The Site forms part of a broader vegetated watercourse and gully system, that extends to the south.

**McFetridge Lane Stormwater Outfall** is located on the northern side of McFetridge Lane, to the immediate north of the dam portion of The Site. This area of The Site comprises a stream environment, with steeply sloped margins, fed by the existing stormwater outlet that flows from the existing constructed wetland area and under McFetridge Lane itself. The initial 20m of the stream margin is covered in grass, transitioning to mid-tier native and exotic vegetation. A post and rail fence lines the top edges of the steep gully margin.

**Awaiti Place Stormwater Detention Pond** is located to the south-western end of the Awaiti Place cul-de-sac. The Site is 8964m<sup>2</sup> and is accessed via the right-of-way connecting to 70-94 Awaiti Place and is comprised of native and exotic vegetation and lawn surrounding an existing stormwater pond that is filled by a watercourse and catchment, flowing from south to north. The Site adjoins residential properties to the south (Ruba Way), east (Awaiti Place) and north (Poike Road).

**Poike Road Stormwater Outfall** is located between Harrisfield Drive and Austen Way, at the lowest-lying point of Poike Road, as it descends from Ohauti Road. The Site is set approximately 4m below the road level, with steeply sloped grass embankments leading down to the existing stormwater outlet and base of the gully. The existing stormwater outlet is surrounded by 1.8m high chain link fence. The Site is bordered by residential properties to the east and west, with a series of retaining walls contained within the western properties being a dominant feature.

## 2.3 Visual Catchment

The visual catchment of the four portions of The Site is confined as a result of the gully landform, existing vegetation and residential development.

Views of the **McFetridge Lane Stormwater Detention Dam** and **McFetridge Lane Stormwater Outfall** is distributed across private residential, public roads and public recreational open space viewers. Views look downwards towards The Site, with some public and private viewers in close proximity to The Site, namely along McFetridge Lane, Hass Drive, Mearns Way, Smylie Close, and recreational users of Ohauti Reserve and of the walkways within The Site itself. Other more distant views of The Site are obtained from Ohauti Road and from some residential properties at the end of Albero Drive and Emmerdale Place. Views are typically limited by the gully landform and obscured by existing vegetation, that includes large, exotic trees along the incised gully edge.

Views of the **Awaiti Place Stormwater Detention Pond** are limited to private residential viewers that front The Site on Awaiti Place, Ruba Way, Poike Road, and from the Carmel Country Estate Retirement Village on Hollister Lane. Views look downward towards The Site and are typically obscured by existing vegetation that define the Green Belt zone, in which The Site is located.

Views of the **Poike Road Stormwater Outfall** are confined to residential properties immediately adjoining The Site on Poike Road, Harrisfield Drive and Austen Way, and pedestrians and road users confined to the area from the section of Poike Road between Harrisfield Drive and Austen Way, and including the southern ends of these roads.

### 3.0 Relevant Statutory Provisions

As part of this assessment, there are a number of planning provisions that are relevant to this project. Specifically, they include:

- The Resource Management Act – notably Section 6 matters (Natural Character and Outstanding Natural Features & Landscapes).
- Bay of Plenty Regional Natural Resources Plan.
- Tauranga City Plan.

#### **Tauranga City Plan**

The proposal is classified at a Restricted-Discretionary Activity under the Tauranga City Plan, as the proposal exceeds the permitted earthworks threshold for areas within 15m of a permanently flowing river, stream or wetland, as outlined under Rule 4C.2.6:

#### *4C.2.6 – MHWS or a Permanently Flowing River or Wetland*

*In addition to Rule 4C.2.2 – All Zones, earthworks undertaken on land within 15m of mean high water springs or a permanently flowing river or stream or wetland shall not:*

- (a) Exceed more than 50m<sup>3</sup> in a 6 month calendar period;*
- (b) Raise or lower the ground level by more than 1 metre.*

As a result of the exceedance of the permitted earthworks threshold, Rule 4C.3.1 applies and gives direction for a landscape, visual and natural character assessment to be undertaken:

#### *4C.3.1 – Standards and Terms*

*Restricted Discretionary Activities shall comply with the following standards and terms:*

- (a) For earthworks that do not comply with Rule 4C.2.6 – Mean High Water Springs (MHWS), Permanently Flowing River or Stream or Wetland:*
  - (i) A qualified landscape architect shall prepare a landscape and visual assessment for any application for resource consent;*
  - (ii) The assessment shall have particular regard to the open space character and factors, values and associations that contribute to the areas landscape and natural character, including its interface with the Coastal Marine Area, permanently flowing river or stream or wetland.*

## 4.0 Proposal Description

The overall stormwater attenuation proposal consists of the following:

- Construction of a stormwater detention dam upstream of McFetridge Lane. Approximately 10m high x 45m Ø (6000m<sup>3</sup>);
- Construction of a spillway and concrete weir to the east of the detention dam. Spillway approximately 20m wide x 150m long x 4.5m high (at highest point);
- Construction and upgrade of stormwater outfalls, energy dissipation structures and fish passage structures at McFetridge Lane and Poike Road outfalls;
- Upgrade of the Awaiti Stormwater Detention Pond outfall;
- Construction of a new stormwater pipeline between the Awaiti Stormwater Detention Pond and the Poike Road outfall (not relevant to this assessment).

This assessment considers these components of the proposals, including related elements such as retaining, access routes, barriers and erosion protection.

## 5.0 Assessment of Effects

Landscape and visual impacts result from natural or induced change in the components, character or quality of the landscape. Usually these are the result of landform or vegetation modification or the introduction of new structures, facilities or activities. All these impacts are assessed to determine their effects on character and quality, amenity as well as on public and private views.

In this study, the assessment of potential effects is based on a combination of the landscape's sensitivity and visibility together with the nature and scale of the development proposal.

Particular effects considered relate to the following:

- Natural Character effects;
- Landscape / rural character effects;
- Visual amenity effects from public and private locations;
- Potential cumulative effects; and
- Effects in relation to statutory provisions.

The principal elements of the proposal that will give rise to landscape, natural character and visual effects are:

- Clearance of existing vegetation;
- Detention dam;
- Spillway;
- Concrete Weir;

- Outfall structures;
- Earthworks;
- Erosion protection and retaining structures;
- Service access.

## 5.1 Natural Character Assessment

In terms of natural character, the highest degree of naturalness occurs where there is the least amount of human induced modification. Structures, such as stormwater detention dams and spillways can adversely change and alter the natural character of an area. The significance of this effect is dictated by the size, location and sensitivity of the receiving environment.

Identified natural character areas are not identified in this area; however, Section 6(a) of the Resource Management Act gives direction that the preservation of natural character of wetlands, lakes, rivers and their margins from inappropriate use and development shall be recognised and provided for. It is recognised that natural character occurs on a continuum and can change over time; either an improvement or worsening of the condition.

As with the coast, the natural character values of rivers, wetlands and lakes in any given area, district or region form an integral part of Section 6(a). There is, however, no specific statutory requirement to 'map or otherwise identify areas of high natural character' for lakes, rivers or wetlands and their margins' as there is for the coast under the NZCPS. However, there is a requirement to undertake a natural character assessment of these waterbodies and watercourses inland of the coastal environment as part of Section 6(a) of the RMA.

This natural character assessment has been undertaken with reference to the Boffa Miskell Terrestrial Natural Character Evaluation Matrix<sup>4</sup>, with The Site being assessed through desktop analysis and during the site visit, to understand the general extent of the environment for consideration, identify the abiotic, biotic and experiential values and assess any effects on these values as a result of the proposal.

As this assessment is for the Resource Consent application, the geographical areas subject to natural character assessment have been limited to those environments contained within the proposed extent of works, and any other adjoining areas directly impacted as a result.

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<sup>4</sup> Refer to Appendix 2

## McFetridge Lane Stormwater Detention Dam & Stormwater Outfall

The geographical extent of natural character assessment for this portion of The Site is confined to the gully area contained within the 365 Ohauti Road and 8 McFetridge Lane properties. The following provides an assessment of the abiotic, biotic and experiential aspects of the existing wetland environment and its margins within The Site.

Natural Character Component	Natural Character Description	Degree of Natural Character
<b>Abiotic</b>	<p>The Site contains a variety of modifications that impact abiotic values, including the online stormwater wetland, believed to have been created to assist in attenuating stormwater flows. The stormwater wetland has been created at the base of the gully which would have once likely been stream habitat.</p> <p>A raised concrete inlet located at the downstream end has created a longitudinal stormwater wetland approximately 350m in length and varying in width between 10-40m. Stream habitat is present upstream of the stormwater wetland, however, no obvious channel is present through the created wetland area. The natural stream processes have been highly modified and are less dynamic as a result of the wetland creation.</p> <p>Landform has been modified, most evidently in forming McFetridge Lane and the crossing of the stream environment. Wider landform has been altered incrementally in the development of the surrounding residential properties.</p>	Low-Moderate
<b>Biotic</b>	Land cover is comprised of native and exotic terrestrial and aquatic vegetation, including a variety of pest species. As at Awaiti Place,	Low-Moderate

	<p>native flora and fauna are present, however, the prevalence of exotic species is evident, with reed sweetgrass (<i>Glyceria maximus</i>) providing almost complete cover of the wetland. Large exotic trees serve as the dominant landcover of the gully edge.</p> <p>Stream habitat in this area is highly modified, as a result of the stormwater wetland construction. Although modified, the stormwater wetland provides aquatic habitat to native and exotic fauna, although the natural populations and ecosystem structure is altered.<sup>5</sup></p> <p>Existing vegetation provides habitat and some food sources for native and exotic birdlife, which is evident on site.</p>	
<b>Experiential</b>	<p>Surrounded by residential development, amongst what is a highly-modified watercourse, there is no real sense of remoteness or wildness. The Site does, however, provide a reprieve within the typical urban, built character of the area.</p>	Low

<sup>5</sup> Refer to the Ecological Impact Assessment for more detail on plant species and distribution.

## Awaiti Place Stormwater Detention Pond

The geographical extent of natural character assessment for this portion of The Site is confined to the cadastral boundaries of 60 Awaiti Place. The following provides an assessment of the abiotic, biotic and experiential aspects of the wetland environment and its margins within The Site.

Natural Character Component	Natural Character Description	Degree of Natural Character
<b>Abiotic</b>	<p>The Site contains a variety of modifications that impact abiotic values, including the stormwater pond, outlet structures and rip-rap rock batter slope. These modifications are the latest to what was once a vegetated watercourse, with the pond construction occurring approximately c.2005. These stormwater attenuation and detention measures have altered the natural, dynamic hydrological processes of the network of watercourses within this catchment.</p>	Low
<b>Biotic</b>	<p>Land cover is comprised of open lawn areas, and a combination of both native and exotic terrestrial and aquatic vegetation, including a variety of pest species. Native plant species, likely planted at the time of the stormwater pond construction include <i>Phormium spp</i>, <i>Carex spp</i>. and <i>Juncus spp</i>. Other native species within The Site are <i>Cordyline australis</i> and <i>Cyathea dealbata</i>.</p> <p>Native fauna is present within The Site, including pukeko, tui, fantail and kingfisher, amongst others. Pest fauna (rabbits) were also observed on The Site. Terrestrial habitat is limited in diversity.</p> <p>Stream habitat in this area is highly modified, as a result of the stormwater pond</p>	Low

	construction. Although modified, the stormwater pond provides aquatic habitat to native and exotic fauna, although the natural populations and ecosystem structure is altered. <sup>6</sup>	
<b>Experiential</b>	Surrounded by residential development, amongst what is a highly-modified watercourse, there is no real sense of remoteness or wildness. The Site does, however, provide a reprieve within the typical urban, built character of the area.	Very Low

### Poike Road Stormwater Outfall

The Poike Road Stormwater Outlet portion of The Site is of Very Low Natural Character, with Very Low abiotic, biotic and experiential values as a result of the highly modified nature of The Site.

#### 5.1.1 Natural Character Effects

All portion of The Site are considered to be highly modified, where constructed online stormwater attenuation devices and structures have altered the natural stream habitat and dynamic processes. The prevalence of exotic and pest plant species as a dominant land cover within what is an increasingly urban context results in the different areas of The Site being of low natural character.

The proposed stormwater detention dam, spillway and outlet structures will introduce further modification to what is an already highly modified stream network and catchment. The proposal has the potential to introduce improved biotic outcomes in particular, through the application of suitable native planting and measures that will increase native species prevalence and diversity, improve habitat quality and ecosystem function.

As The Site is already highly modified and of low natural character, measures that improve the functional abiotic, biotic and experiential outcomes may not necessarily mean an increase in natural character in this context, as The Site is likely to still be perceived as a modified environment, as opposed to 'natural'.

Natural character effects resulting from the proposed stormwater detention dam, spillway and outfall proposal are considered to be moderately positive, in that the proposal, when applying the recommendations contained within this assessment and the *Ecological Impact Assessment* will improve the current condition and function relating to the abiotic, biotic and experiential values of the already highly modified watercourse network.

<sup>6</sup> Refer to the Ecological Impact Assessment for more detail on plant species and distribution.

## 5.2 Landscape Effects

### 5.2.1 Landscape Character Effects

Landscape character is derived from the distinct and recognisable pattern of elements that occur consistently in a particular landscape. It reflects particular combinations of geology, landform, soils, vegetation, land use and features of human settlement. It creates the unique sense of place defining different areas of the landscape.

*Refer to 2.1 Landscape Context* for description of the wider landscape context, character and patterns.

#### **Landscape Sensitivity**

##### Ability to Absorb Change

The Site comprises a modified landscape, where topography and hydrology has been altered previously to establish an online wetland and stormwater pond in what was likely stream habitat. Vegetation cover is a mixture of native and exotic plant species in both the aquatic and margin environments. In some locations there is a monoculture of pest species, such as that within the McFetridge Lane Stormwater Detention Dam, where reed sweetgrass (*Glyceria maxima*) provides almost total cover of the wetland.

The existing vegetation cover, particularly the stands of large exotic trees contribute to the visual enclosure of the landscape and The Site, especially at the McFetridge Lane Stormwater Detention Dam portion. Sloping topography further contributes to this visual enclosure of the landscape and reduced distribution of the viewing audience.

The Site is adjoined by existing residential development, including new residential development at the Quail Ridge subdivision, part of the wider development pattern that typically extends along the ridgelines and mid-slopes that flank the stream networks and their margins, located at the base and lower slopes of the gullies.

The portions of The Site are fairly typical in use to those intended within the zoning. The McFetridge Lane Stormwater Detention Dam is in the Passive Open Space zone, while the Awaiti Place Stormwater Detention Pond and Poike Road Stormwater Outfall are in the Green Belt zone; managing diffuse water discharge through the constructed stormwater attenuation devices and providing green corridor links and physical links for community use via public tracks through existing stands of native and exotic vegetation.

The Site has the ability to absorb the change brought about by the proposed stormwater detention and attenuation devices as a result of the existing degree of modification, existing land use for stormwater attenuation and relative visual enclosure. Appropriate mitigation measures are considered necessary to ensure the suitable integration of the proposal into the receiving environment.

##### Value of the Landscape

As identified in the assessment of natural character, The Site does not contain any important biophysical or sensory attributes. This is supported by The Site not being the subject of any statutory protections or classifications relating to the landscape, natural character and ecological condition, such as SEA or ONFL. A landscape can, however, have value even if it is not recognised under these classifications, with value also derived from sensory and associative attributes. The Site is recognised by the community as having recreational and scenic value, while also associating The Site with aquatic ecological value.

The Site does not contain any identified Significant Māori Areas, however, it is recognised that awa hold cultural value for tangata whenua.

With consideration of the recreational, scenic and cultural characteristics of The Site, the value associated with the landscape is low-moderate.

As a result of the existing characteristics and qualities of the landscape and the values associated with The Site, the landscape is considered to be of a low-moderate sensitivity to the type of change brought about by the proposed stormwater detention and attenuation structures.

### **Magnitude of Change**

The geographical extent of landscape change is considered to be confined to the extent of works areas. The proposed stormwater detention and attenuation structures will result in a change to the landform, landcover and hydrology within The Site and effect an increased visual openness.

The size and scale of change varies across the different portions of The Site, relative to the size and scale of the proposed works and stormwater detention and attenuation structures. The proposed dam and spillway structures at the existing McFetridge Lane stormwater wetland present the largest scale of change, with extensive changes to landform, hydrology and vegetation patterns.

Although The Site is already highly modified, the removal of vegetation within the works area, particularly large exotic trees, presents a loss to the existing landcover feature, while the establishment of the dam and spillway result in extensive changes to the landform feature, resulting in a moderate degree of change.

### 5.2.2 Direct Landscape Effects

There are a variety of direct landscape effects to the receiving environment resulting from the proposal. These effects are predominantly focused around the McFetridge Lane Stormwater Detention Dam portion of The Site.

The establishment of the proposed dam and spillway will require the removal of existing native and exotic vegetation, including some large exotic trees that line the gully edge. Substantial cut and fill earthworks to create the spillway and form the dam will present a distinct change in the landform within The Site. In establishing the dam, the existing modified wetland aquatic and marginal habitat will also be altered.

Mitigation measures are required to address the effects associated with vegetation clearance, changes to landform and the introduction of a variety of built structures. These direct landscape effects present a distinct change to the current environment; however, the proposal has the potential to provide beneficial landscape outcomes, induced by these changes to landscape features. Appropriate mitigation measures centred around provision of diverse native planting, integration of landform and built elements and improved habitat and hydrological processes will mitigate any direct adverse effects to be low.

### 5.2.3 Summary of Landscape Effects

The Site is already highly modified, with online stormwater wetlands and ponds being established previously. The enclosure of The Site and coherence with wider landscape patterns and land use results in The Site having the ability to absorb the change brought about by the proposal.

This ability to absorb change, coupled with The Site being of a low-moderate associative landscape value, results in The Site being of a low sensitivity to the changes brought about by the proposal.

The size and scale of change across the different portions of The Site varies, with the largest magnitude of change being at the McFetridge Lane Stormwater Detention Dam portion of The Site, where the loss of existing vegetation and substantial alterations to landform in the area presenting a moderate magnitude of change.

Direct landscape effects resulting from the proposal include vegetation removal, substantial cut and fill earthworks and alteration to the existing aquatic and marginal habitat and hydrological processes. These effects can be mitigated through the application of mitigation measures which will improve landscape patterns in the current reserve environment by; increasing native plant species prevalence and diversity, improving modified hydrological processes, water quality and enhancing aquatic and terrestrial habitat.

With the application of necessary mitigation and design measures which address the identified direct landscape effects, the overall adverse landscape effects resulting from the proposal will be low.

## 5.3 Visual Effects

Visual amenity effects are influenced by a number of factors including the nature of the proposal, the landscape absorption capability and the character of the site and the surrounding area. Visual amenity effects are also dependent on distance between the viewer and the proposal, the complexity of the intervening landscape and the nature of the view.

*Refer to Appendix 3: Visual Analysis for photographs of representative views from relevant public and private vantage points.*

### 5.3.1 Effects from public vantage points

Public viewpoints affected by the proposal comprise road users and recreational users in various locations, including:

- Ohauiti Reserve;
- Ohauiti Road;
- McFetridge Lane;
- Mearns Way;
- Awaiti Place;
- Harrisfield Drive;
- Poike Road.

### **McFetridge Lane Road User Viewing Audience**

Views of the McFetridge Lane Stormwater Detention Dam portion of The Site are obtained from a variety of public road locations to the north, east and west. Road users are considered a transient viewing audience, where views of The Site are often incidental.

Views of The Site from Ohaiti Road to the east are distant and obscured by existing vegetation and landform. Views of The Site from Hass Drive and Mearns Way to the west are also obscured by existing vegetation, with landform and built form also serving as visual barriers and detractors. Views towards The Site are mostly open for McFetridge Lane road users.

Value is attached to these views, although transient in nature, with The Site serving as a visual green corridor amongst the surrounding residential built form. Existing large exotic trees provide scale to this visual feature of The Site. As a result, the sensitivity of the transient road user audience is low.

The proposal will see the removal of some of these key visual features, such as large-scale exotic vegetation, resulting in a change in the visual outlook from these public road locations. Vegetation removal will result in an increased visual openness towards The Site and of the proposed dam and spillway.

The size, scale and geographical extent of change is relatively confined, where changes to the visual outlook centre around the extent of works area, being approximately 100m in length. The retention of large-scale trees surrounding the works area and inclusion of planting within The Site will re-establish the visual green corridor valued by these viewers, following the construction period. As such, the magnitude of visual change for this viewing audience is considered to be low.

### **Poike Road Outlet Road User Viewing Audience**

The establishment of a constructed stormwater outlet and energy dissipation structure introduces a visual change to what is currently a grass swale. Views are limited and highly transient, with The Site being set down below the road. Views of The Site are not typically recognised or valued by the community, due to the relative visual enclosure and presence of existing built structures within the reserve area, resulting in a viewing audience of a low sensitivity.

The size, scale, and geographical extent of visual change is confined, with the stormwater outlet and energy dissipation structure being visually discrete, of a low-profile and at grade with the surrounding ground level that is set below the road and the associated viewing audience, resulting in a low magnitude of visual change.

### **Ohaiti Reserve Recreational Viewing Audience**

Ohaiti Reserve is comprised of an open sloping lawn area (Active Open Space zone) and the vegetated gully and watercourse, in which the McFetridge Lane Stormwater Detention Dam portion of The Site is located (Passive Open Space zone). Users of The Site typically include walkers, runners, cyclists and informal sport and passive recreation, such as for picnicking or similar passive enjoyment activities.

For these users of the active open space lawn area, The Site contributes to a wider large-scale vegetated outlook along the gully edge. For users of the walkways within The Site itself, existing vegetation provides visual enclosure from the surrounding suburban residential area, increasing the sense of isolation and visual amenity.

These recreational users are of a moderate sensitivity to change as their focus is more typically focused on The Site and the elements within it, with value being placed on the recreational values, visual seclusion and relative scenery.

The size, scale and geographical extent of visual change for this viewing audience is relatively confined, however, with the majority of vegetation to be retained being located outside of the proposed works area. There will be a large scale of visual change within the works area, as a result of vegetation removal and landform alterations in forming the dam and spillway. The magnitude of visual change for these viewers will be moderate due to their use and proximity to The Site and the scale and extent of change.

### 5.3.2 Private Effects from private vantage points

Private viewpoints affected by the proposal comprise residential viewers in various locations, including:

- Smylie Close;
- McFetridge Lane;
- Hass Drive;
- Mearns Way;
- Awaiti Place;
- Harrisfield Drive;
- Poike Road;
- Austen Way.

Visual effects from private views of the McFetridge Lane Stormwater Outfall and Poike Road Stormwater Outfall are considered to be low, as a result of the limited viewing audience, confined views and existing degree of modification.

At the Awaiti Stormwater Detention Pond portion of The Site, there is considered to be negligible visual effects, with proposed remedial planting works considered to enhance the visual outlook.

#### **McFetridge Lane Stormwater Detention Dam Residential Viewing Audience**

Residential views of The Site are obtained from a variety of residential properties to the north (McFetridge Lane), east (Smylie Close and Ohaiti Road) and west (Hass Drive and Mearns Way). Views vary in proximity, visual openness and a focus of views towards The Site.

#### Ohaiti Road Residential Viewing Audience

Views of The Site from Ohaiti Road residents are distant (approximately 200m minimum), overlooking the Ohaiti Reserve open space area. The Site serves as part of the wider vegetated visual outlook that the gully area provides. Value is placed on these 'green corridor' views which break up the visual density of development.

The proposal would see some of the existing large-scale exotic vegetation removed, changing the visual outlook for these viewers. Views of the proposed spillway and dam would be less prominent, where visual proximity, landform and residential dwellings (Smylie Close) conceal views of the total proposal, resulting in the ability for viewers to absorb the change brought about by the proposal, having a lower sensitivity to change.

As a result of the size, scale and geographical extent of change visible from this viewpoint, the magnitude of visual change for Ohauti Road residents is low.

#### Smylie Close Residential Viewing Audience

Residential properties in Smylie Close directly adjoin The Site to the east. Views from the main outdoor living areas of many of these properties are focused towards The Site, with value placed on the large-scale vegetated visual outlook that is provided for within The Site, that makes up a portion of the wider vegetated gully landscape pattern. Because of the focus of views being primarily towards The Site, this visual context has a lesser ability to absorb visual change and has a greater sensitivity to visual change.

The clearance of areas of existing large-scale exotic vegetation would result in visual change for this viewing audience. This visual change would be confined to the geographical extent of the works area to establish the dam and spillway, where large-scale exotic vegetation outside of this area is proposed to be retained, including in the area between the dam and spillway.

The alterations to landform will provide the most distinct visual change from this viewpoint. The dam will be visible, but with existing vegetation providing a degree of visual screening. The spillway will constitute the largest scale of visual change for this viewing audience. The establishment of the spillway would see the area of open lawn space immediately adjoining Smylie Close properties to the west subjected to cut earthworks, resulting in a finished spillway at approximately 4 metres below the current ground level, at the highest point. Cut slopes are proposed to be a combination of stepped gabion baskets in the lower slopes, with the upper portions to be a 1:2 grade, planted slope. The base of the spillway is proposed to be reinforced lawn.

The proposed dam and spillway would introduce elements of a constructed nature into the immediate view of this viewing audience, in contrast to the more 'naturalistic' patterns of landform and landcover that comprise these viewers current outlook. As a result of the visual proximity of the dam and spillway and the scale of landform change within the immediate visual outlook of the Smylie Close properties, the magnitude of visual change for this viewing audience will be moderate.

#### McFetridge Lane Residential Viewing Audience

Similar to the Smylie Close viewing audience, value is attached to views of the existing large-scale exotic vegetation that define the gully margins in this area. Views are sometimes focussed towards The Site, but to a lesser extent than that of the Smylie Close residents. Other visual detractors, such as existing vegetation also contribute to these viewers being less sensitive to visual change and having a greater ability to absorb change of the nature proposed.

The loss of vegetation and changes to landform to construct the proposed dam and spillway are visible from this viewing audience, in particular 28 / 28A McFetridge Lane, that are positioned in elevated positions. Other properties that are low-lying, including 10, 12 & 20 McFetridge Lane will see some visual change to their outlook, resulting from vegetation removal. However, changes to landform will be less visually evident, where the existing rising landform obscures views of the dam and spillway.

The size and scale of visual change will be of a similar nature but to a lesser degree to the Smylie Close residential viewing audience, due to a more restricted extent of views as a result of existing vegetation to be retained and landform that confines views and serve as visual detractors in the wider visual outlook. Because of this more confined geographical extent and scale of visual change, the magnitude of visual change for this viewing audience is considered to be low-moderate.

### Quail Ridge Estate Residential Viewing Audience

This audience comprised those residential properties located to the west of The Site, located on Hass Drive and Mearns Way. These properties are recently developed as part of this greenfield residential subdivision, with some properties yet to have a dwelling built. Views of The Site are screened by existing vegetation that borders these properties, with views into The Site generally considered to be obtained from 1,2 & 6 Hass Drive and 4 & 6 Mearns Way.

Like other residents that surround The Site, value is placed on views of the large-scale vegetation, however, as these residents are recently settled into the properties, they are likely to have a lesser attachment to these views than those that have lived in their properties for a longer period of time. As a result, this viewing audience is considered to have an increased ability to absorb change and are of a low-moderate sensitivity to visual change.

The proposal would see the retention of the majority of large-scale vegetation along the western edge of The Site, that serves as a vegetated buffer between the residential viewers. This vegetation to remain will provide visual screening of the dam and spillway from the majority of the western viewing audience. Large-scale vegetation is proposed to be removed where the dam is to meet the western side of the gully. This will open up a narrow channel of views along the top of the dam from 1,2 & 6 Hass Drive properties. Existing vegetation to the eastern side of the dam will screen views of the spillway for these viewers.

As a result of the confined geographical extent of visual change and minimal loss of the existing vegetation feature from this vantage point, the magnitude of visual change is low.

### 5.3.3 Summary of Visual Effects

Visual effects as a result of the proposed McFetridge Lane Stormwater Outfall and Poike Road Stormwater Outfall would be low, as a result of the limited viewing audience, confined views and existing degree of modification, while at the Awaiti Stormwater Detention Pond portion of The Site there would very low adverse visual effects, with proposed remedial planting works considered to enhance the visual outlook, generating a positive effect on the visual amenity.

There are visual effects from both public and private viewpoints resulting from the proposed works at the McFetridge Lane Stormwater Detention Dam portion of The Site. Those most affected comprise viewing audiences in closer proximity to The Site, and with views typically focussed towards The Site as a result of their occupation, in particular Smylie Close residents that adjoin The Site.

The most affected public viewing audience are the recreation users of the Ohauti Reserve, comprising the active open space lawn area and the pedestrian / cycle trails that traverse along the edge of the vegetated gully environment. The most affected private viewing audience are those Smylie Close residents that adjoin The Site to the east. For these audiences, views are typically focused on the vegetated environment in which The Site is situated, with value placed on the scenic and vegetated character of these views. Due to the residential and recreational occupation of these viewers, they have a lower ability to absorb change. Because of the proximity and occupation of these viewing audiences to The Site and the value that these audiences attach to view of The Site, as part of the wider vegetated gully landscape, these viewing audiences are of a moderate visual sensitivity.

The establishment of the proposed dam and spillway requires vegetation clearance, including large-scale exotic tree species within the extent of works area, and extensive cut and fill earthworks to form the dam and to cut the spillway into the existing lawn slope that adjoins the Smylie Close residents. Vegetation clearance alters the visual outlook and opens views into

The Site for these viewers. The earthworks introduce changes to landform of a composition contrasting the 'naturalistic', gradually sloped lawn area and vegetated gully margin that exists. Erosion protection measures and other hard structures, including; stepped gabion baskets, reno mattresses and the concrete weir contribute further to the human-modified, infrastructural character of the proposal. Because of the size and scale of change and the geographical extent of visual change for the most affected viewing audiences, the magnitude of change is considered to be moderate.

As a result of the moderate visual sensitivity of the viewing audience to change and with regard to the magnitude of change resulting from the proposed dam and spillway being moderate, the overall visual effects are considered to be moderate, without any mitigation measures applied.

Visual effects can be reduced to a low level by applying the mitigation measures as outlined in 6.0 Recommendations of this assessment. These measures focus on appropriately integrating the proposed dam and spillway structures into the receiving visual environment through the application of mitigation planting, controls on hard structures, retention of existing large-scale trees and provisions to ensure the suitable establishment, protection and maintenance of mitigation planting.

## 6.0 Recommendations

In order for the proposed stormwater detention and attenuation structures to be suitably integrated into the receiving landscape and visual environment, the following mitigation measures are recommended.

### Mitigation Planting

1. Native planting, of appropriate species selection to be implemented on the detention dam embankments. To provide a minimum 90% cover by the end of the 24-month maintenance period.
2. Native planting, of appropriate species selection to be implemented on the spillway embankments. To provide a minimum 90% cover by the end of the maintenance period. Where gabion baskets are used, BiorCoir Logs (or similar) are to be used and fixed to the top face of the gabion baskets and planted into. To provide a minimum 70% cover of gabion top and front faces by the end of the 24-month maintenance period.
3. Native planting, of appropriate species selection to be implemented amongst the reno mattress erosion protection areas positioned along the toe of the slopes of the wetland area to the north of the detention dam. To provide a minimum 50% cover by the end of the 24-month maintenance period.
4. Large-scale exotic trees (excluding pest species) and native vegetation to be retained outside of the minimum required extent of works area to establish the stormwater detention dam and spillway structures and associated wetland areas. Trees to be retained to be shown on landscape plans for construction. Should the extent of vegetation to be retained varies to those shown on the Mitigation Plan for this application (*Mitigation Overlay: McFetridge Lane Dam*) this will be reviewed by a suitably qualified Landscape Architect, to ensure that the level of landscape and visual effects mitigation is maintained, or if additional measures are required to be implemented.

5. Existing wetland margins and base within the extent of works to be cleared of exotic plant species and re-planted with native planting, of appropriate species selection. The extent of planting is to be from McFetridge Lane southward to the end of the spillway. To provide a minimum 90% cover by the end of the maintenance period.
6. Native planting, of appropriate species selection to be implemented a minimum of 2 metres surrounding the extent of the stormwater outfalls and energy dissipation structures at McFetridge Lane & Poike Road. To provide a minimum 90% cover by the end of the maintenance period.
7. A detailed Landscape and Planting Plan is to be produced by a suitably qualified Landscape Architect for construction, detailing:
  - Species
  - Locations
  - Grade
  - % Mix
  - Density

Landscape and Planting Plans for construction are to be reviewed against these recommendations and confirmed to ensure that mitigation requirements will be achieved by the proposal.

#### Structures

8. The concrete weir located on the crest of the spillway slope is to be an 8% full-black oxide, exposed aggregate finish, to be visually recessive.
9. Exposed concrete culverts and headwalls to be painted dark grey or black, of a Light Reflectance Value (LRV) of no greater than 25%, applied with a suitable preparation and paint to withstand submersion in water.
10. The finished surface of walkways and access tracks to be a gravel, suitable for this application, such as compacted GAP7 or hoggin. In instances where concrete is required to be used, this should be an 8% full-black oxide, exposed aggregate finish, to be visually recessive.
11. Any barriers required for safety from falling should be visually recessive in colour, with a LRV of no greater than 25%. Where timber is used, this should be stained black, with Resene Woodsman stain, or similar product.
12. Any barriers required for safety from falling should be integrated into garden beds, to reduce their visual prominence. A planting strip of at least 1m either side of any barrier should be provided.

#### Maintenance

13. A soft landscape maintenance period for a minimum of 24 months to be included as part of the contract for soft landscape works. Key outcomes for landscape mitigation are the measures for native vegetation coverage in the different locations, as outline above, which are to be met by the end of the maintenance period.
14. A suitably qualified Landscape Architect shall oversee the maintenance period works over the 24 months and confirm the performance outcomes of native vegetation coverage are achieved at the end of the maintenance period.

## 7.0 Conclusions

The proposal will see a change in the landscape character and visual outlook of the receiving environment, particularly relating to the removal of some existing large-scale exotic vegetation and the alteration of landform to establish the dam and spillway areas.

The proposal will bring about further modifications to what is an already highly-modified landscape. Beyond the improvement to stormwater management that is the primary function of the proposal, there will be benefits to natural character and landscape values as a result of improved aquatic and marginal habitats, increased prevalence of native planting and removal of pest and other exotic flora.

The visual outlook will change most dramatically for those viewers in closest proximity to the McFetridge Lane Stormwater Detention Dam portion of The Site, particularly those adjoining residents at Smylie Close, who are more sensitive to visual change.

By applying the mitigation recommendations above, landscape and visual effects will be suitably addressed, in the context that this is an already highly-modified landscape, with low natural character values. It is considered that at the end of the soft landscape maintenance period, landscape and visual effects will be of a low and in turn equating to a 'less than minor' level.

# Appendix 1: Landscape and Visual Effects Assessment Methodology

11 February 2019

## Introduction

The Boffa Miskell Ltd Landscape and Visual Effects Assessment (LVA) process provides a framework for assessing and identifying the nature and level of likely effects that may result from a proposed development. Such effects can occur in relation to changes to physical elements, the existing character of the landscape and the experience of it. In addition, the landscape assessment method may include an iterative design development processes, which includes stakeholder involvement. The outcome of any assessment approach should seek to avoid, remedy or mitigate adverse effects (see **Figure 1**). A separate assessment is required to assess changes in natural character in coastal areas and other waterbodies.

This outline of the landscape and visual effects assessment methodology has been undertaken with reference to the **Quality Planning Landscape Guidance Note**<sup>7</sup> and its signposts to examples of best practice, which include the **UK guidelines for landscape and visual impact assessment**<sup>8</sup> and the **New Zealand Landscape Institute Guidelines for Landscape Assessment**<sup>9</sup>.

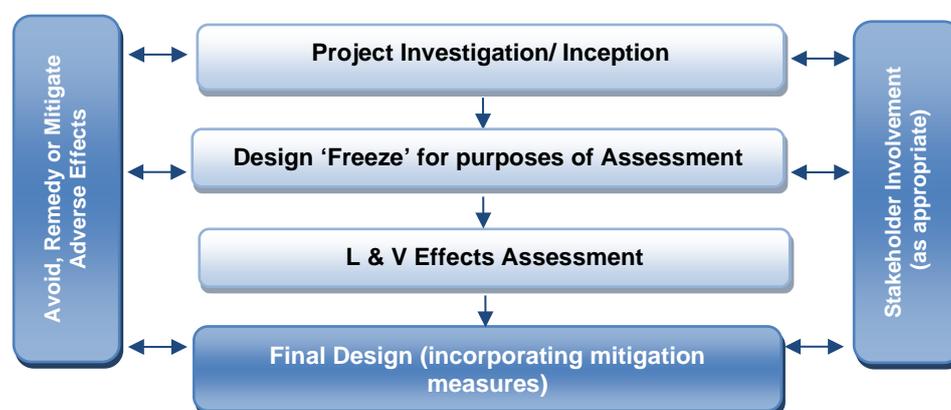


Figure 1: Design feedback loop

When undertaking a LVA, it is important that a **structured and consistent approach** is used to ensure that **findings are clear and objective**. Judgement should be based on skills and experience and be supported by explicit evidence and reasoned argument.

While landscape and visual effects assessments are closely related, they form separate procedures. The assessment of the potential effect on the landscape forms the first step in this process and is carried out as an effect on landscape elements, features and on landscape character. The assessment of visual effects considers how changes to the physical landscape affect the viewing audience. The types of effects can be summarised as follows:

**Landscape effects:** *Change in the physical landscape, which may affect its characteristics or qualities.*

**Visual effects:** *Change to views which may affect the visual amenity experienced by people.*

The policy context, existing landscape resource and locations from which a development or change is visible, all inform the 'baseline' for landscape and visual effects assessments. To assess effects, the landscape must first be **described**, including an understanding of the **key landscape characteristics and qualities**. This process,

<sup>7</sup> <http://www.qualityplanning.org.nz/index.php/planning-tools/land/landscape>

<sup>8</sup> Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)

<sup>9</sup> Best Practice Note Landscape Assessment and Sustainable Management 10.1, NZILA

known as landscape characterisation, is the basic tool for understanding landscape character and may involve subdividing the landscape into character areas or types. The condition of the landscape (i.e. the state of an individual area of landscape or landscape feature) should also be described together with, a judgement made on the value or importance of the potentially affected landscape.

## Landscape Effects

Assessing landscape effects requires an understanding of the landscape resource and the magnitude of change which results from a proposed activity to determine the overall level of landscape effects.

### Landscape Resource

Assessing the sensitivity of the landscape resource considers the key characteristics and qualities. This involves an understanding of both the ability of an area of landscape to absorb change and the value of the landscape.

#### **Ability of an area to absorb change**

This will vary upon the following factors:

- Physical elements such as topography / hydrology / soils / vegetation;
- Existing land use;
- The pattern and scale of the landscape;
- Visual enclosure / openness of views and distribution of the viewing audience;
- The zoning of the land and its associated anticipated level of development;
- The scope for mitigation, appropriate to the existing landscape.

The ability of an area of landscape to absorb change takes account of both the attributes of the receiving environment and the characteristics of the proposed development. It considers the ability of a specific type of change occurring without generating adverse effects and/or achievement of landscape planning policies and strategies.

#### **The value of the Landscape**

Landscape value derives from the importance that people and communities, including tangata whenua, attach to particular landscapes and landscape attributes. This may include the classification of Outstanding Natural Feature or Landscape (ONFL) (RMA s.6(b)) based on important biophysical, sensory/ aesthetic and associative landscape attributes, which have potential to be affected by a proposed development. A landscape can have value even if it is not recognised as being an ONFL.

### Magnitude of Landscape Change

The magnitude of landscape change judges the amount of change that is likely to occur to areas of landscape, landscape features, or key landscape attributes. In undertaking this assessment, it is important that the size or scale of the change is considered within the geographical extent of the area influenced and the duration of change, including whether the change is reversible. In some situations, the loss /change or enhancement to existing landscape elements such as vegetation or earthworks should also be quantified.

When assessing the level of landscape effects, it is important to be clear about what factors have been considered when making professional judgements. This can include consideration of any benefits which result from a proposed development. **Table 1** below helps to explain this process. The tabulating of effects is only intended to inform overall judgements.

Contributing Factors		Higher	Lower
Landscape (sensitivity)	Ability to absorb change	The landscape context has limited existing landscape detractors which make it highly vulnerable to the type of change resulting from the proposed development.	The landscape context has many detractors and can easily accommodate the proposed development without undue consequences to landscape character.
	The value of the landscape	The landscape includes important biophysical, sensory and shared and recognised attributes. The landscape requires protection as a matter of national importance (ONF/L).	The landscape lacks any important biophysical, sensory or shared and recognised attributes. The landscape is of low or local importance.

<b>Magnitude of Change</b>	<b>Size or scale</b>	Total loss or addition of key features or elements. Major changes in the key characteristics of the landscape, including significant aesthetic or perceptual elements.	The majority of key features or elements are retained. Key characteristics of the landscape remain intact with limited aesthetic or perceptual change apparent.
	<b>Geographical extent</b>	Wider landscape scale.	Site scale, immediate setting.
	<b>Duration and reversibility</b>	Permanent. Long term (over 10 years).	Reversible. Short Term (0-5 years).

Table 1: Determining the level of landscape effects

## Visual Effects

To assess the visual effects of a proposed development on a landscape, a visual baseline must first be defined. The visual 'baseline' forms a technical exercise which identifies the area where the development may be visible, the potential viewing audience, and the key representative public viewpoints from which visual effects are assessed.

The viewing audience comprises the individuals or groups of people occupying or using the properties, roads, footpaths and public open spaces that lie within the visual envelope or 'zone of theoretical visibility (ZTV)' of the site and proposal. Where possible, computer modelling can assist to determine the theoretical extent of visibility together with field work to confirm this. Where appropriate, key representative viewpoints should be agreed with the relevant local authority.

### The Sensitivity of the viewing audience

The sensitivity of the viewing audience is assessed in terms of assessing the likely response of the viewing audience to change and understanding the value attached to views.

#### *Likely response of the viewing audience to change*

Appraising the likely response of the viewing audience to change is determined by assessing the occupation or activity of people experiencing the view at particular locations and the extent to which their interest or activity may be focussed on views of the surrounding landscape. This relies on a landscape architect's judgement in respect of visual amenity and the reaction of people who may be affected by a proposal. This should also recognise that people more susceptible to change generally include: residents at home, people engaged in outdoor recreation whose attention or interest is likely to be focussed on the landscape and on particular views; visitors to heritage assets or other important visitor attractions; and communities where views contribute to the wider landscape setting.

#### *Value attached to views*

The value or importance attached to particular views may be determined with respect to its popularity or numbers of people affected or reference to planning instruments such as viewshafts or view corridors. Important viewpoints are also likely to appear in guide books or tourist maps and may include facilities provided for its enjoyment. There may also be references to this in literature or art, which also acknowledge a level of recognition and importance.

### Magnitude of Visual Change

The assessment of visual effects also considers the potential magnitude of change which will result from views of a proposed development. This takes account of the size or scale of the effect, the geographical extent of views and the duration of visual change, which may distinguish between temporary (often associated with construction) and permanent effects where relevant. Preparation of any simulations of visual change to assist this process should be guided by best practice as identified by the NZILA<sup>10</sup>.

<sup>10</sup> Best Practice Guide: Visual Simulations BPG 10.2, NZILA

When determining the overall level of visual effect, the nature of the viewing audience is considered together with the magnitude of change resulting from the proposed development. **Table 2** has been prepared to help guide this process:

Contributing Factors		Higher	Lower	Examples
The Viewing Audience (sensitivity)	Ability to absorb change	Views from dwellings and recreation areas where attention is typically focussed on the landscape.	Views from places of employment and other places where the focus is typically incidental to its landscape context. Views from transport corridors.	Dwellings, places of work, transport corridors, public tracks
	Value attached to views	Viewpoint is recognised by the community such as an important view shaft, identification on tourist maps or in art and literature. High visitor numbers.	Viewpoint is not typically recognised or valued by the community. Infrequent visitor numbers.	Acknowledged viewshafts, Lookouts
Magnitude of Change	Size or scale	Loss or addition of key features in the view. High degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Full view of the proposed development.	Most key features of views retained. Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Glimpse / no view of the proposed development.	<ul style="list-style-type: none"> <li>- Higher contrast/ Lower contrast.</li> <li>- Open views, Partial views, Glimpse views (or filtered); No views (or obscured)</li> </ul>
	Geographical extent	Front on views. Near distance views; Change visible across a wide area.	Oblique views. Long distance views. Small portion of change visible.	<ul style="list-style-type: none"> <li>- Front or Oblique views.</li> <li>- Near distant, Middle distant and Long distant views</li> </ul>
	Duration and reversibility	Permanent. Long term (over 15 years).	Transient / temporary. Short Term (0-5 years).	<ul style="list-style-type: none"> <li>- Permanent (fixed), Transitory (moving)</li> </ul>

Table 2: Determining the level of visual effects

## Nature of Effects

In combination with assessing the level of effects, the landscape and visual effects assessment also considers the nature of effects in terms of whether this will be positive (beneficial) or negative (adverse) in the context within which it occurs. Neutral effects can also occur where landscape or visual change is benign.

It should also be noted that a change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways; these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use. The aim is to provide a high amenity environment through appropriate design outcomes.

This assessment of the nature effects can be further guided by **Table 3** set out below:

Nature of effect	Use and Definition
<b>Adverse (negative):</b>	The activity would be out of scale with the landscape or at odds with the local pattern and landform which results in a reduction in landscape and / or visual amenity values
<b>Neutral (benign):</b>	The activity would be consistent with (or blend in with) the scale, landform and pattern of the landscape maintaining existing landscape and / or visual amenity values
<b>Beneficial (positive):</b>	The activity would enhance the landscape and / or visual amenity through removal or restoration of existing degraded landscape activities and / or addition of positive elements or features

Table 3: Determining the Nature of Effects

## Determining the Overall Level of Effects

The landscape and visual effects assessment concludes with an overall assessment of the likely level of landscape and visual effects. This step also takes account of the nature of effects and the effectiveness of any proposed mitigation. The process can be illustrated in Figure 2:



Figure 2: Assessment process

This step informs an overall judgement identifying what level of effects are likely to be generated as indicated in **Table 4** below. This table which can be used to guide the level of landscape and visual effects uses an adapted seven-point scale derived from NZILA's Best Practice Note.

Effect Rating	Use and Definition
<b>Very High:</b>	Total loss of key elements / features / characteristics, i.e. amounts to a complete change of landscape character and in views.
<b>High:</b>	Major modification or loss of most key elements / features / characteristics, i.e. little of the pre-development landscape character remains and a major change in views. <u>Concise Oxford English Dictionary Definition</u> <i>High: adjective- Great in amount, value, size, or intensity.</i>
<b>Moderate- High:</b>	Modifications of several key elements / features / characteristics of the baseline, i.e. the pre-development landscape character remains evident but materially changed and prominent in views.
<b>Moderate:</b>	Partial loss of or modification to key elements / features / characteristics of the baseline, i.e. new elements may be prominent in views but not necessarily uncharacteristic within the receiving landscape. <u>Concise Oxford English Dictionary Definition</u> <i>Moderate: adjective- average in amount, intensity, quality or degree</i>
<b>Moderate - Low:</b>	Minor loss of or modification to one or more key elements / features / characteristics, i.e. new elements are not prominent within views or uncharacteristic within the receiving landscape.
<b>Low:</b>	Little material loss of or modification to key elements / features / characteristics. i.e. modification or change is not uncharacteristic or prominent in views and absorbed within the receiving landscape. <u>Concise Oxford English Dictionary Definition</u> <i>Low: adjective- 1. Below average in amount, extent, or intensity.</i>
<b>Very Low:</b>	Negligible loss of or modification to key elements/ features/ characteristics of the baseline, i.e. approximating a 'no change' situation and a negligible change in views.

Table 4: Determining the overall level of landscape and visual effects

# Appendix 2: Terrestrial Natural Character Evaluation Matrix

Terrestrial Natural Character Evaluation Matrix

11 November 2015

Degree of Natural Character	Very High	High	Moderate - High	Moderate	Low - Moderate	Low	Very Low
<b>Abiotic</b>	<ul style="list-style-type: none"> <li>- Rare modification / structures</li> <li>- Dynamic processes virtually intact</li> </ul>	<ul style="list-style-type: none"> <li>- Very small levels of modification / isolated structures</li> <li>- Dynamic processes largely intact</li> </ul>	<ul style="list-style-type: none"> <li>- Small scale modification / limited structures</li> <li>- Dynamic processes generally intact with some interference</li> </ul>	<ul style="list-style-type: none"> <li>- Moderate scale modification / several structures</li> <li>- Dynamic processes still apparent</li> </ul>	<ul style="list-style-type: none"> <li>- Frequent landform modification / several structures</li> <li>- Some natural processes capable of recovery</li> </ul>	<ul style="list-style-type: none"> <li>- Large areas of modification / reclamation and/or structures</li> <li>- Some key natural processes are no longer able to operate</li> </ul>	<ul style="list-style-type: none"> <li>- Very extensive modification / reclamation</li> <li>- Few or no natural elements, patterns, processes remain</li> </ul>
<b>Biotic</b>	<ul style="list-style-type: none"> <li>- Exotic biota may occur but virtually no invasive species</li> <li>- Virtually all expected species present and their population structure virtually unmodified</li> <li>- Contains species and habitats of high conservation value</li> <li>- All ecosystem functions virtually intact</li> </ul>	<ul style="list-style-type: none"> <li>- Exotic biota may occur and invasive biota rare</li> <li>- Virtually all expected species present and population structure is largely unmodified</li> <li>- Very likely to contain species and habitats of high conservation value</li> <li>- Almost all ecosystem functions intact</li> </ul>	<ul style="list-style-type: none"> <li>- Exotic biota common with few invasive species</li> <li>- Virtually all expected species present with slight modification to population structure</li> <li>- Some species and habitats of high conservation value</li> <li>- Most ecosystem functions intact</li> </ul>	<ul style="list-style-type: none"> <li>- Exotic and invasive biota regularly present</li> <li>- Some expected species absent with moderate modification to population structure</li> <li>- A few species and habitats of high conservation value</li> <li>- Some ecosystem functions varying outside natural range</li> </ul>	<ul style="list-style-type: none"> <li>- Exotic and invasive biota common</li> <li>- Many expected species absent with marked modification to population structure</li> <li>- Species and habitats of high conservation value rare</li> <li>- Most ecosystem functions varying well outside natural range</li> </ul>	<ul style="list-style-type: none"> <li>- Exotic and invasive biota very common</li> <li>- Most expected species absent with remnant population structure highly modified</li> <li>- Species and habitats of high conservation value absent</li> <li>- Few original ecosystem functions remain</li> </ul>	<ul style="list-style-type: none"> <li>- Exotic and invasive biota dominate</li> <li>- Expected species virtually absent</li> <li>- Only the most hardy or adaptable species occur</li> <li>- Original ecosystem functions rare or absent</li> </ul>
<b>Experiential</b>	<ul style="list-style-type: none"> <li>- Overwhelming sense of wildness and remoteness</li> </ul>	<ul style="list-style-type: none"> <li>- Predominantly wild and remote</li> </ul>	<ul style="list-style-type: none"> <li>- Frequent sense of wildness and remoteness</li> </ul>	<ul style="list-style-type: none"> <li>- Opportunities to experience wildness and remoteness</li> </ul>	<ul style="list-style-type: none"> <li>- Limited sense of wildness or remoteness</li> </ul>	<ul style="list-style-type: none"> <li>- Rare sense of wildness</li> </ul>	<ul style="list-style-type: none"> <li>- No sense of wildness or remoteness</li> </ul>
<b>Calibration</b>	<ul style="list-style-type: none"> <li>- Rare human influence</li> <li>- Parts within Turakirae Head</li> </ul>	<ul style="list-style-type: none"> <li>- Limited human interference</li> </ul>	<ul style="list-style-type: none"> <li>- Some human interference</li> </ul>	<ul style="list-style-type: none"> <li>- Obvious human influence</li> </ul>	<ul style="list-style-type: none"> <li>- Strong human influence</li> </ul>	<ul style="list-style-type: none"> <li>- Built environment clearly apparent</li> </ul>	<ul style="list-style-type: none"> <li>- Built environment dominates</li> <li>- Wellington Container Terminal</li> </ul>

# Appendix 3: Visual Analysis



View looking south towards dam site from McFetridge Lane



View looking northeast towards dam site from western gully path



View looking south towards dam site from eastern gully path



*View looking west towards dam and spillway site from Smylie Close residential boundary*



View looking east towards dam and spillway site from Hass Drive

### **About Boffa Miskell**

Boffa Miskell is a leading New Zealand professional services consultancy with offices in Auckland, Hamilton, Tauranga, Wellington, Christchurch, Dunedin and Queenstown. We work with a wide range of local and international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, cultural heritage, graphics and mapping. Over the past four decades we have built a reputation for professionalism, innovation and excellence. During this time we have been associated with a significant number of projects that have shaped New Zealand's environment.

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