Longford Shared Path Bridge

Landscape and Visual Impact Assessment

Prepared for Gore District Council

Drafted by Align Limited

August 2020

Align

PREPARED BY ALIGN Limited

DOCUMENT DETAILS

Outline	Details	Date	Commentary
Document	Landscape and Visual Assessment	Feb 2020	
Produced by	Align Ltd		Align Landscape Architect
Produced For	Gore District Council		Hashem Ramezan-zadeh
Document No.	**Revision History**		**Author + Sign-off**
Draft	0.1	14/02/20	Mike Pentecost
For consent	0.2	24/02/20	Mike Pentecost
RFI Response	3.0	04/08/20	Mike Pentecost

Document Use:
This report has been prepared by Align Ltd on the specific instructions of our client. It is intended for the sole use of our client for which it is intended, in accordance with the agreed scope of works. Align does not accept any liability or responsibility in relation to the use of this report contrary to the above.

Contents

1 Introduction 4
1.1 Scope: 4
1.1.a Focus 4
1.1.b Project description 4
1.1.c Location 5
1.2 Landscape issues 5
1.3 Key Stakeholders / Affected Parties 9
1.3.a Private 9
1.3.b Public 9
1.4 Methodology 9
2 Existing Landscape 11
2.1 Landscape 11
2.2 Description 11
2.2.a Biophysical 14
2.2.b Sensory qualities 14
2.2.c Spiritual, cultural, social associations 15
2.3 Characterisation 15
2.4 Evaluation 16
3 Condition and effects: 18
3.1 Landscape Effects 18
3.1.a Physical Effects 18
3.1.b Perceptual Effects 18
3.1.c Amenity Effects 19
3.1.d Cultural / Heritage Effect 20
3.2 Visual Effects 20
3.2.a Visual Effects 20
3.2.b Visibility Analysis: 20
3.2.c Visual Influences: 26
4 Change management: 27
4.1 Values 27
4.1.a Enhancement 27
4.2 Alternatives 27
4.3 Design and Mitigation 32
4.3.a Avoid 32

4.3.b Remedy 32
4.3.c Mitigate 32
5 Conclusion 33

Summary of Abbreviations:

NZILA	New Zealand Institute of Landscape Architects
LINZ	Land Information New Zealand
LVIA	Landscape and Visual Impact Assessment
GPS	Global Positioning System

1 Introduction

1.1 *Scope:*

This Landscape and Visual Impact Assessment (LVIA) report has been prepared for the client and can be relied upon as an attachment to the resource consent application. This report provides an expert Landscape Visual Assessment with regards to the existing landscape and proposed activities on site as defined within this report. The report has been prepared using plans and documents supplied by Landpro Ltd, DC Structures Studio and Gore District Council, as well as information gathered during site visits carried out on 9th and 10th February 2020.

1.1.a Focus

This Landscape and Visual Impact Assessment (LVIA) report focuses on the landscape and visual effects of the proposal as defined in the following pages. The report aims to identify landscape and visual issues and assess the proposal against the relevant policies and plans.

1.1.b Project description

Gore District Council proposes to construct a shared pedestrian and cycle bridge spanning the Mataura River as part of the Longford shared path connecting the residential area of East Gore to the other side of town including the CBD and schools. The bridge structure is proposed to span the Mataura River in the vicinity of the intersection of Huron Street, Church Street and River Terrace to a new embankment on the opposite side of the Mataura River. A shared path would then traverse the grassed floodplain; at the time of writing the exact location of the shared user path is yet to be finalised.

The bridge structure itself consists of a tall mast, which serves as the support for steel cables which are attached along the length of the bridge deck. The bridge also has associated earthworks and deadman structures which anchor the cables as they rise to the top of the mast.

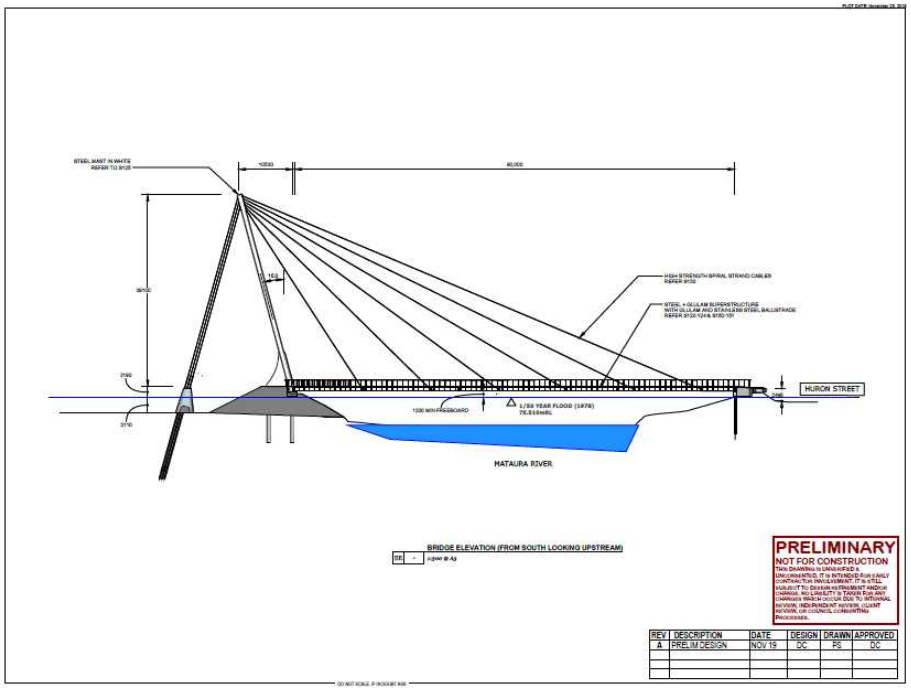

Figure 1: Elevation of the proposed bridge structure. Source: DC Structures Studio

This report focuses on the bridge structure and associated landform and assesses the landscape and visual effects these will have on the local and surrounding landscape.

1.1.c Location

The proposed bridge structure crosses the Mataura River at a point located between Huron Street, Church Street at the north western end and River Terrace at the southern end, extending north-west to the opposite bank of the Mataura River, Gore.

The site is within the rural and residential zone, as well as the Mataura River 20 metre buffer zone.

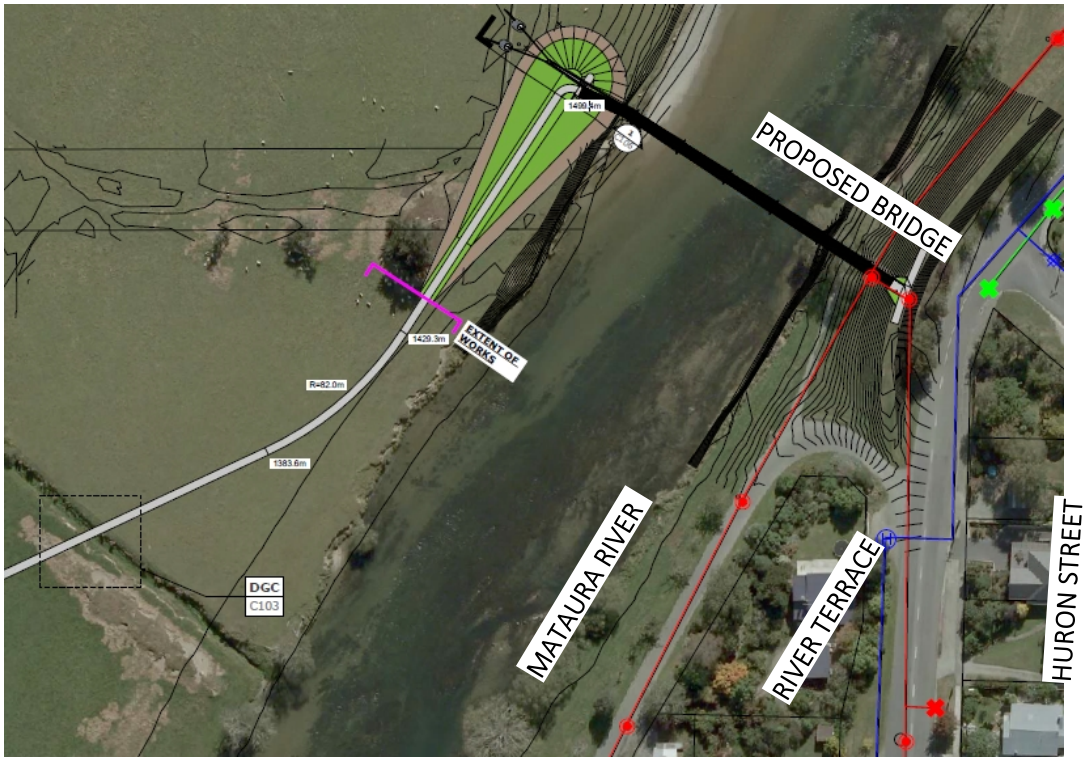

Figure 2: Location Plan – showing the location of the proposed bridge structure. Source: DC Structures Studio

1.2 *Landscape issues*

This report considers the broader policy context as outlined below:

RMA provision	
S5 Purpose and Principles	
S6(a) Natural Character of Coastal Environment, Wetlands, and Lakes and Rivers	Effects on natural character (biophysical and perceptual) of Rivers and streams
S7(c) Amenity Values	Effects on landscape character Effects on streetscape

	Effects on recreational experience in a park Effects on landscape context of an historical site Effects on views Effects on visual amenity from private property Temporary visual effects during construction
S7(f) Quality of the Environment	Effects on landforms Effects on vegetation
Gore District Plan - Objectives	
Objective 2.2.3 Outstanding natural features and landscapes.	1. To protect the Districts outstanding natural features and landscapes
Objective 2.4.3 Margins of Rivers and Streams	1. To preserve the natural character of the margins of the Mataura River. 2. To provide public access along the margins of the Mataura River where this is practical and can be safely undertaken without adversely affecting the use of adjoining land.
Objective 3.3 Land Use Activities	1. Maintain and enhance the amenity values of the various localities within the District whilst respecting the different values and characteristics that exist within each area. 2. Ensure that the effects of land use activities do not adversely affect the quality of the environment and are compatible with the characteristics and amenity values of each locality. 7. Ensure that the effects of earthworks and other land disturbance are avoided, remedied, or mitigated.
Objective 7.3 Utilities	2. To ensure that the location and design of utilities avoids significant adverse effects on:

	a) The natural character of wetlands, and lakes and rivers and their margins. b) Outstanding natural features and landscapes. c) Areas of significant vegetation and significant habitats of indigenous fauna. d) The maintenance and enhancement of public access along lakes and rivers. 3. Subject to objective 2, to avoid where practical, remedy or mitigate the adverse effects of the provision of utilities.
Gore District Plan - Policies	
2.2.4 Outstanding natural features and landscapes	1. While recognising that the Hokonui Hills is a working rural landscape subject to ongoing change as a result of farming activities, protect the Hokonui Hills from development and use that results in adverse effects on landscape values. 2. Avoid the erection of structures that project beyond the ridgelines of the Hokonui Hills when observed from areas, sites or land other than that on which the structure is being built. 3. Avoid activities that could compromise the visual values or geological significance of the strike ridges of the Hokonui Hills. 4. Ensure that any domestication of the Hokonui Hills landscape that may be required is undertaken, as far as practical, in locations away from public view.

	5. Liaise with Environment Southland on all RMA processes to ensure that the natural values of the Mataura River are protected. 6. Adopt non-regulatory methods to educate users of the Mataura river and adjoining land as to actions they can take to protect and enhance the values of the river.
2.4.4 Margins of Rivers and Streams	1. Control the adverse effects of land use on the margins of the Mataura River. 2. Maintain and enhance public access to and along the Mataura river except where this will affect public health or safety, or where site security would be compromised.
3.4 Land Use Activities	2. Control the adverse effects of land use activities on the environment. 11. Ensure that the effects of earthworks and other land disturbance are avoided, remedied, or mitigated.
7.4 Utilities	4. To protect: a) The natural character of wetlands, and lakes and rivers and their margins. b) Outstanding natural features and landscapes. c) Areas of significant indigenous vegetation and significant habitats of indigenous fauna. d) Public access to and along lakes and rivers. 5. To encourage a design and location of utilities that minimises adverse visual effects, where this can be achieved without compromising operation or efficiency.

Table 1: Policy context

1.3 *Key Stakeholders / Affected Parties*

1.3.a Private

The proposed bridge structure will be visible from a range of locations and as such, there will be many affected parties – with effects varying in scale depending upon the location, proximity, and orientation of the viewing audience. There are several existing dwellings located near the proposed bridge structure at the intersection of River Terrace and Huron Street which have a direct visual link with the proposed bridge. The dwellings located at the intersection of Huron Street and Woolwich Street may also have a visual link with the proposed bridge structure, with these influences depending on property layout, orientation, and distance from the subject site. Dwellings in the hillside areas of Gore which look towards East Gore are at higher elevations and look down towards the Mataura River and will have a visual link with the proposed bridge structure (from a distance in the order of 1 – 1.5 kilometres).

Industrial/ commercial properties located adjacent to the proposed bridge structure on Richmond Street, Surrey Street, Avon Street and other connecting streets to the south and west of the subject site will also have a visual link with the proposed bridge structure. The occupants and / or owners of these dwellings and industrial buildings would be stakeholders due to any possible effects of the proposal as assessed within this report. Gore District Council are also key stakeholders given their role as initiators of the project.

1.3.b Public

There are many parties which have visual access to the proposed bridge structure due to its location, scale and form. These are often transitory parties including primary and secondary road users, with Waipahi Highway (State Highway 1) bridge over the Mataura River located approximately 600m south of the proposed bridge structure providing clear views. Users of surrounding roads such as River Terrace, Huron Street, Woolwich Street, Richmond Street and Avon Street are also likely to be affected.

Recreational users along the river including pedestrians and cyclists are also likely to be affected. A significant number of recreational users were observed on the site visit on the 9th of February (runners and walkers), especially on the Gore town side of the river, both walking at road level and on top of the stop-bank.

1.4 *Methodology*

The location of the proposed bridge structure and surrounding area were visited on 9th and 10th February 2020, to assess the proposal and its effects on the greater landscape. The site visit was attended by myself (BLA, Registered NZILA Landscape Architect) and Tim Reed (BLA, Landscape Architect). The report uses imagery obtained via desktop analysis and information provided as part of the resource consent application.

The site and proposal were computer modelled, based on available LINZ site information (https://data.linz.govt.nz/), LIDAR from Gore District Council and CAD files provided by DC Structures

Studio. This model was utilised to create and proof the photomontages and inform the associated visual assessment.

During the site visit, seventeen discrete sites were identified and photographed, as part of an assessment of the greater landscape. The seventeen sites were chosen to test a diverse range of viewpoints from which to assess the visual effects of the proposed bridge and define the receiving environment from which the proposed bridge would be visible. Of these identified sites, four were chosen as base images for photomontages which have been produced to demonstrate the existing landscape prior to development, as well as the proposed structure.

2 Existing Landscape

2.1 *Landscape*

The NZILA charter defines landscape as 'The cumulative expression of natural and cultural elements, patterns and processes in a geographical area'. To this end the proposed bridge structure has been assessed with reference to the cultural aspects as well as the aesthetic.

2.2 *Description*

The site for the proposed bridge structure is situated approximately 800m north east of the main street of the township of Gore. Gore township is contained within an area that extends approximately 3 kilometres from the southwest of the Matura River Bridge (State Highway 1) in a band that is approximately 1.2 kilometres wide. East Gore extends this band a further 1.8 kilometres to the north east.

The subject site is located directly adjacent to the south east of a suburban area. There is an existing stop-bank which runs along the Mataura River providing a separating feature between the river and the suburban area. From this point south, River Terrace follows the Mataura River to the existing Waipahi Highway (State Highway 1) bridge which is located approximately 600m south of the proposed bridge structure. The proposed bridge structure is situated within a floodplain for the Mataura River, which at the time of site visit had experienced flooding due to significant rainfall from higher in the river catchment only days prior. The Mataura River is identified in the Gore District Plan as an outstanding Natural Feature, as are the Hokonui Hills to the north west of the subject site.

Land use within the broader landscape is varied, with three distinct character zones which are influenced by development patterns - suburban/ residential tree-lined streets to the east, rural within the open, expansive area of floodplain being grazed by sheep and industrial to the west. Essentially, the landscape context is changed depending on which side of the Mataura river the viewer is situated and the direction in which they are viewing, with an abrupt change from being on the main street of the township to a rural feel within the river corridor.

The site of the proposed bridge structure forms part of a broader landscape, with landform including stop banks along the river and gently rolling terrain within the floodplains. The immediate area to the west of the proposed bridge structure is relatively flat apart from the flood protection stopbanks, with landform to the east rising more abruptly away from the river, particularly within the areas of Huron Street leading towards State Highway 1. Landform within the wider landscape rises into larger hills and higher topographies, such as the Hokonui Hills to the north-west which form part of the Southland Syncline, a major geological fold system.

The Mataura River and associated floodplains and flood protection stopbanks form a strong feature within the landscape as the grid road pattern is interrupted by it. The floodplain itself is a very significant landscape feature, forming a broad valley floor that helps to define the skyline by providing a visual corridor between the surrounding high ground. This has the effect creating a sense of space, rather than allowing the surrounding hills to enclose the local landscape.

Figure 3: General Landscape – view from the corner of Avon Street and Richmond Street showing the industrial setting on this side of the Mataura River.

Figure 4: General Landscape – view from the Mountain Road looking north-west showing the wider landscape around Gore and varied landscape character.

Figure 5: General Landscape – view from the flood protection stopbank along Richmond Street looking north-east towards the site of the proposed bridge location showing the rural character

Figure 6: General Landscape – view from the corner of River Terrace and Huron Street showing the industrial and rural setting as viewed from the residential area. Source: Google Earth Pro.

2.2.a Biophysical

The site of the proposed bridge structure is situated on a floodplain, with distinct residential areas, industrial areas, the Mataura River and an open pastoral landscape creating a varied landscape that changes in character depending upon the viewers orientation The typical features of a rural landscape were prevalent to the north west of the subject site with farm fencing dividing paddocks within a the relatively open valley floor, and a varied backdrop of dwellings and structures to the east. This means that the landscape background varies depending on the location and orientation of the associated viewpoint.

The Mataura River which flows south in a gently winding pattern and the associated floodplains and stop-banks are obvious features within this landscape which have dictated the layout of land-use within the area and contribute to the character of the landscape. This is a dominant feature within the general patterns here, with the structure of the built environment conforming to the natural path of the river and its associated landform (stop banks etc).

The vegetation consists mainly of exotic grass pasture, grassed berms within residential and industrial areas and along stop-banks and trees in clusters within the floodplain. Trees also partially line the riverbanks, visually reinforcing the natural path of the river. Many are also located in private residential properties. These trees and other vegetation along the stop-bank appear predominantly to be exotic species including Prunus spp., Salix spp etc. These tree species are generally deciduous and therefore provide ephemeral qualities to the landscape which will allow filtered views through from surrounding areas in autumn and winter months but will provide a visual barrier and shelter in summer months.

The roading is arranged in a grid pattern which is interrupted by SH1 and 94, with the Mataura River also influencing street layout as explained above.

Residential dwellings are predominantly single -storey, with a small number being two- storeys high. The dominant architectural type is bungalow style dwellings and dwellings from the 1940s to 1960s era in a range of materials. There are also a number of more historic buildings in Gore – with a mix of heritage buildings and more recent styles creating a varied stock of commercial and residential buildings throughout the township.

2.2.b Sensory qualities

As described earlier in the report, the landscape context in the locality is varied. The sensory qualities of the immediate area around the subject site are related to the visual and spatial qualities which the central floodplain area provides. There is a sense of open space, combined with exotic vegetation surrounding the subject site, which is a key factor in the way this landscape is experienced and received – these are all features of an open rural landscape.

The areas explored during the site visit revealed a wide range of sensory experiences – with the township itself providing the typical built environment with strong human influences. The urban and residential areas in Gore provide a sense of history, with the historic buildings and evidence of the rural community adding to the charm of the township.

The greater landscape was often open and exposed, as well as isolated. This gave a sense of exposure and solitude in many areas – which is likely to add to the appeal for walkers, runners and

cyclists. The rural landscape as observed was also lush and green, giving an underlying sense of a rich and productive landscape.

These qualities combine to create a landscape where a sense space and solitude would not be difficult to find, and the compact nature of Gore township would make this accessible to many residents.

2.2.c Spiritual, cultural, social associations

A detailed cultural investigation has not been carried out as part of this landscape and visual assessment.

It is assumed a range of users including tangata whenua will have cultural associations with the area, especially the Mataura River. The Mataura River is a source of brown trout and is popular for fishing, including white baiting.

2.3 *Characterisation*

The site of the proposed bridge structure as outlined above is part of a landscape with three distinct landscape characters. The character of the landscape between the river and stopbanks is largely rural with, open grass area, suburban on the east side of the study area and industrial to the west.

Gore has a 'small town' charm and character typical of rural New Zealand, the business premises observed are often associated with the rural farming practices, and other more subtle visual ques include the prevalence of farming utility vehicles including tractors and trucks including milk tankers. The township has a balance of small-town business as well as the supermarket chains and other businesses often more associated with larger towns and cities. This gives a layer of city amenity which is also supported by cafes and restaurants – which add a layer of visitor amenity to the township – likely to make this a stop for those travelling to and from the tourist destination of Milford Sound. The architectural style of the dwellings and buildings is dominated by early and mid-century bungalow style housing, with the main street facades including heritage buildings dating from early 1900's. The more modern buildings follow the form of the earlier structures, with the streetscape dominated by one or two story (there are some slightly taller) buildings which share an attached street canopy that unifies the street façade. The main street is wide, with a central median, which creates a sense of space that is commonly found in rural towns.

The Mataura River creates a dividing natural feature which separates the Gore and east Gore urban areas. This effect is accentuated due to the height of the flood protection stop banks obscuring views to the Mataura River.

Landscape character changes abruptly upon leaving the township, and the viewer enters the rural landscape, this rural character is reinforced by visual ques such as shelter belts, farm fences and occasional industrial sites such as the Mataura Valley milk factory in East Gore. The landscape here has a more spacious quality, with the industrial sites. The floodplain itself is sparsely vegetated (it is assumed in order to maintain an effective channel in times of floods), and provides open, expansive views down the valley. The sparse vegetation adds to the open, exposed feel of the landscape – and contributes to the open spacious quality of the subject site (especially when looking to the north-east).

2.4 *Evaluation*

The proposal being evaluated in this assessment will be in a landscape that has a range of uses. The Mataura River forms a strong delineation between three distinct landscape character areas; the first being the suburban area located to the east, the second the river corridor and the third the industrial area located to the west. These areas contribute to the overall landscape character and identity of this area.

The proposed site lies within a heavily modified environment. The river corridor itself has a modified appearance due to the presence of the grassed stopbanks, pastoral/agricultural landscape, exotic vegetation and surrounding urban development. There is also very little indigenous vegetation cover remaining, instead the floodplain contains clusters of exotic trees and farm fences

The interface between natural and man-made patterns is a major contributing factor in the character, perception and visual amenity. The rural context is seen as a key value, with the values of spaciousness, low density, vegetation being recognised within this report and assessment. The surrounding landscape (especially the outstanding natural features of the Mataura River and Hokonui Hills) is also a major consideration when assessing the proposed bridge structure.

The adverse effects of the proposed bridge structure are measured against the 7-point scale on the following page (See Table 2).

Table 2 - Scale of effects (7 point)[1]

The below seven-point scale is used to describe effects.

- Very High: Total loss to the key attributes of the receiving environment and/or visual context amounting to a complete change of landscape character

- High: Major change to the characteristics or key attributes of the receiving environment and/or visual context within which it is seen; and/or a major effect on the perceived amenity derived from it.

- Moderate-High: A moderate to high level of effect on the character or key attributes of the receiving environment and/or the visual context within which it is seen; and/or have a moderate-high level of effect on the perceived amenity derived from it.

- Moderate: A moderate level of effect on the character or key attributes of the receiving environment and/or the visual context within which it is seen; and/or have a moderate level of effect on the perceived amenity derived from it. (Oxford English Dictionary Definition: Moderate: adjective-average in amount, intensity or degree).

- Moderate-Low: A moderate to low level of effect on the character or key attributes of the receiving environment and/or the visual context within which it is seen; and/or have a moderate to low level of effect on the perceived amenity derived from it.

- Low: A low level of effect on the character or key attributes of the receiving environment and/or the visual context within which it is seen; and/or have a low level of effect on the perceived amenity derived from it. (Oxford English Dictionary Definition: Low: adjective-below average in amount, extent, or intensity).

- Very Low: Very low or no modification to key elements/features/characteristics of the baseline or available views, i.e. approximating a 'no-change' situation.

[1] Goodman, de Lambert, Dawson, McMahon & Rackham (2000). Impact of development on rural landscape values. Ministry for the Environment.
Defined and agreed at NZILA assessment methodology workshop (Christchurch), Dec 4, 2017
(part of a national roadshow facilitated by retired Environment Court Judge Gordon Whiting).
Results currently being compiled.

3 Condition and effects:

3.1 *Landscape Effects*

The Landscape is an expression of natural and cultural features, patterns and processes that exist in an area. Landscape is about the physical components of a place; the way people perceive a place; and those key associations they have with a particular place. The combination of these physical, perceptual and associative aspects combines to form 'landscape character' and have been assessed by analysing the following physical, perceptual and amenity values.

3.1.a Physical Effects

The bridge structure includes earthworks at each end of the platform and connecting works to enable the path to link with the structure. These works will require earthworks and alter the immediate landform. The structure itself has anchoring points that are excavated into the ground, creating a periphery of modified ground form and built structure. The mast for the bridge represents a highly mechanical inclusion in the landscape and dominates the surrounding natural landscape, especially when the mast and peripheral structures are considered. The proposed bridge structure also provides a physical connection across the Mataura River which creates a link in the development pattern of the township.

It is also important to recognise the existing river stop bank, and the highly modified landform that currently exists. The proposed earthworks as presented by the current design information available fits with the existing modified landform. The concrete dead man anchors will have the effect of creating a second minor structure connected to the proposed bridge but will be less visible as they are lower than the modified ground form nearby.

The physical effects of the proposed bridge structure on the subject site are assessed as **moderate - low**.

3.1.b Perceptual Effects

The bridge structure creates a linking feature that will connect the proposed walking / cycling path across the Mataura River – in effect this reinforces the development pattern and built environment over the natural feature of the river and will make the township of Gore feel more connected with East Gore. It is also worthy of note that the mast of the proposed bridge structure would breach the skyline of the Hokonui Hills from some angles – particularly close to the site on the eastern bank of the Mataura River.

The addition of another structure also reduces the sense of spaciousness of the river flood plain, with the associated sensory qualities being altered also. The perception of the landscape in the immediate vicinity of the proposed bridge being altered not only by the physical presence of the structure – but also by increased recreational use. The addition of the bridge will create an increase in activity at each end of the structure/ along the shared path through additional pedestrian and cycle movements, resulting in a change of character in the immediate vicinity of the shared path. The site visit took in areas on the banks Mataura River which included seating and picnic areas which connected directly with the river and would have visual contact with the proposed bridge to differing degrees. It is anticipated that these areas would have greater exposure to users of the proposed path and bridge.

In general the proposed bridge could be expected to expose some of these currently more isolated areas to the increased presence of people – this effect would be reduced as the viewer moved further from the proposed bridge and path, but would change the perception of isolation that can currently be found in places along the banks of the Mataura River.

It is important to recognise that to different users of this area the perceptual change could also be a positive one, with the increased use providing opportunities for a greater number of community members and visitors. The increased connectivity is likely to be valued by many – and is also considered as an influencing feature when assessing the perceptual effects.

Figure 7: Picnic and parking area to the north east of the subject site. The proposed bridge structure would be approximately .5 kilometre away and visible from the water's edge.

The perceptual effects of the proposed bridge structure on the subject site are assessed as **moderate - low**.

3.1.c Amenity Effects

As described earlier in the report, there are markedly different character zones within a relatively small area, and the landscape ranges in visual amenity. The area with highest amenity value is looking from the eastern banks of the Mataura River north-west to a rural outlook. The proposed bridge structure would disrupt the sense of spaciousness through the addition of another built form within the landscape which is otherwise relatively uncluttered by artificial structures. It would also obstruct views out into the wider rural landscape and create an obtrusion into the skyline, where there currently are generally natural forms. In other locations, given the context of urban and suburban development within the foreground and background, the proposed bridge structure would have less adverse effect on the amenity value due to the number of existing built structures visible within the landscape. From the area along eastern banks of the Mataura River, there is also the potential for increased noise

associated with the users of the proposed bridge structure and a loss of sense of privacy for surrounding dwellings.

For recreational users, such as walkers and cyclists, the proposed bridge structure will result in enhanced amenity value, due to the associated recreational opportunities and connections across the Mataura River. These positive amenity effects also need to be considered when assessing the amenity effects and contribute to the assessment value presented.

Whilst they may be temporary, construction effects as part of the proposed bridge structure will have an adverse effect on the amenity value of this landscape through the creation of noise, traffic movement, obstruction of views through use of cranes etc, creation of dust and establishment of construction yards in a landscape which is otherwise generally free of built structures.

The landscape amenity effects of the bridge structure on the subject site are assessed as **moderate**.

3.1.d Cultural / Heritage Effect

A cultural assessment, including assessing Tangata Whenua values has not been carried out as part of this Landscape and Visual impact assessment. As such, no assessment rating can be given for this section of the report.

3.2 *Visual Effects*

The subject site is described above and is part of the greater landscape with both rural and urban areas in the locality. The form of the proposed bridge structure ensures that there is a large area to be considered as the receiving environment. The study below is condensed from the site visit, which covered all of Gore itself as well as large tracts of the general surrounding environment.

3.2.a Visual Effects

The assessment of visual effects requires the consideration of the subject site's visibility and potential impacts on specific viewing audiences and have been assessed using the following method:

The position and form of the proposed bridge structure create a significant inclusion in the landscape. The steel mast is 39.1m in height above the stop-bank, and the steel strand cables which support the deck of the bridge create a presence that is permeable yet still significant. At the time of writing it is acknowledged that the detailed design of the bridge is yet to be finalised – and details such as colour, pattern and texture may provide some mitigation of visual effects – this report however, focuses on the bridge form and design as supplied.

The assessment of visual effects takes into account the proximity, orientation and nature of the viewing audience with relation to the proposed bridge structure – consequently the ratings can differ when assessed from different positions.

3.2.b Visibility Analysis:

The proposed bridge structure is located directly adjacent to a residential area and connects to an industrial area, as well as being at least partially visible from vehicles traversing surrounding roads (such as the State Highway 1 bridge).

The proposed bridge structure will be visible from existing residences along River Terrace and from the existing residences on the higher ground to the north east of the subject site (including but not limited to Norton Street, North Terrace and Garnet Street)

The surrounding roads are below stopbank level, which have the effect of obscuring direct views to the bridge from surrounding roads. The trees on the stop bank create further screening – and the added height of this screening will obscure views of the mast at times to the transient road user.

The visual effects associated with the proposed bridge structure have been assessed on site and specific viewpoints chosen during these site visits. These viewpoints have been assessed as the key points where there will be a direct visual connection to the proposed bridge structure (see Appendix A for images formatted as per the NZILA best practice guide). The visual assessment also focuses on the more general viewing audience from the greater landscape – with transient road and path users experience being assessed from representative viewpoints identified and included in Appendix A.

It is worthy of note that in general the mast would be visible from many areas, the viewpoints presented have been selected to provide a representative range that demonstrates the various impacts (and accounts for location, orientation and proximity).

Refer to Appendix A, Figure 1 for map of viewpoint locations.

Figure 8: Viewpoint 1 – Existing landscape looking north from the corner of Avon Street and Richmond Street

Figure 9: Viewpoint 1 – Post development. Showing the proposed bridge structure visible behind the stop banks.

The location on the corner of Avon Street and Richmond Street has been chosen as it represents a view from the industrial area looking north-east towards a rural outlook/ backdrop. The existing power poles and post and wire fence line provide vertical elements within the landscape. The existing grassed stopbanks obscure views of the Mataura River and the landing location of the bridge on the eastern bank adjacent to River Terrace. The mast on the western bank of the Mataura River will be readily visible from this location, although the power poles that are spaced along the base of the stop bank and road edge have the effect of lessening the visual impact and moderating the scale of the bridge structure. The adverse landscape and visual effects from viewpoint 1 are rated as **moderate.**

Figure 10: Viewpoint 2 – Looking upstream of the Mataura River from the Waipahi Highway bridge

Figure 11: Viewpoint 2 - Post development showing proposed bridge structure.

The location on the Waipahi Highway bridge has been chosen as it represents a key route into and out of Gore and will be viewed by many transient road users and pedestrians from this location. Existing trees along the eastern bank of the Mataura River screen most of the residential development pattern from this viewpoint and provide a high degree of rural character, however clusters of dwellings can be seen in the distance due to surrounding terrain. The proposed bridge structure will be highly visible from this bridge when travelling in both directions and will form a dominant element in what otherwise appears to be a rural landscape. The mast will breach the skyline at this location where the forms of the landscape are dominated by more naturalistic patterns – hillside, river, trees. The viewing audience at this viewpoint are more likely to be transient, meaning the view for many would be momentary or at least limited to the duration of their bridge crossing. The adverse landscape and visual effects from viewpoint 2 are rated as **moderate.**

Figure 12: Viewpoint 3 - The viewpoint from the corner of River Terrace and Huron Street.

Figure 13: Viewpoint 3 - The viewpoint from the corner of River Terrace and Huron Street post development.

The location on the corner of River Terrace and Huron Street has been chosen as it represents the views from residential dwellings which look west to north-west. These dwellings have a predominantly rural outlook, with expansive views into the distance, including the hillside area of Croydon Bush and the hills beyond. The proposed bridge structure would be relatively close to the surrounding residential dwellings and will be highly visible from this location. The mast, handrails and deck of the bridge will breach the skyline at this location where the forms of the landscape are currently dominated by more naturalistic patterns – hillside, river, and trees. The scale of the bridge structure

when viewed from this point ensures that it is the dominant feature in the landscape and projects above the Hokonui Hills when viewed from the top of the stopbank in this vicinity.

The proposed bridge structure would be highly visible from this location and would create significant change to the rural character and outlook from this location. The adverse landscape and visual effects from viewpoint 3 are rated as **high.** The properties that have a 'moderate to high', or 'high' visual impact are identified in Appendix B, figure 1 – note that a visual analysis from each individual property has not been carried out, nor has any private property been visited in this assessment.

Figure 14: Viewpoint 4 - The viewpoint from the corner of Norton Street and Garnet Street predevelopment, showing existing vegetation, urban development and topography of the surrounding area.

Figure 15: Viewpoint 4 - The viewpoint from the corner of Norton Street and Garnet Street post development. The bridge links the urban areas, however the structure is within context

The location on the corner of Norton Street and Garnet Street has been chosen as it represents a view from the surrounding areas which are at higher elevations and look down towards the proposed bridge structure. The existing industrial/ commercial premises in the foreground of the view and suburban development in the background provide built form context within the landscape, with this visual clustering of built elements absorbing the proposed bridge structure. The adverse landscape and visual effects from viewpoint 4 are rated as **moderate - low.**

3.2.c Visual Influences:

The visual influences of the proposed bridge when viewed from each of the above viewpoint's ranges from **moderate to low** and **moderate to high** due to the scale and positioning of the bridge structure and associated earthworks.

The general visual influence of the bridge structure when viewed from Gore township looking towards East Gore (represented by viewpoint 4) was more readily absorbed by the existing built form in the landscape. These views from west looking east would typically follow this pattern, with the higher percentage of built structure in the background partially absorbing the additional structure of the bridge. This effect is relevant to the houses on the hillside, as the higher elevation also ensures the mast does not breach the skyline – moderating its visual influence.

The views of the proposed bridge structure when looking in the opposite direction (east to west) as demonstrated in viewpoints 1,2 and 3 often do not have the same degree of built structure in the background. This changes the visual influence as the rural background does not absorb the structure as readily, and the landscape and visual effects when viewing from this orientation are therefore higher.

4 Change management:

4.1 *Values*

4.1.a Enhancement

The proposed bridge structure as described in the report above represents a linking feature in the walking / cycling track network, and as such will provide benefits to the users. These values are not influential in the landscape visual impact assessment – but are worthy of note as the bridge structure will present as an enhancement in the landscape for many users.

The landscape effects associated with the proposed bridge and associated peripheral structures in their current form are significant and will be difficult to avoid, remedy or mitigate. It is also acknowledged that the bridge design is still being developed, therefore the following mitigation measures could be included within the design to address aspects of the adverse visual effects caused by the proposed bridge structure.

There are some landscape plantings shown around the proposed earthworks in concept form, these will present an opportunity for enhancement of the shared user path – and could be linked to landscape design treatments in the overall network.

4.2 *Alternatives*

In the initial design stages undertaken by GDC prior to commencing this assessment, an alternative bridge design was explored, but the Cable-stay design was selected due to "concerns about significant cost increases due to hydraulic and geotechnical inputs"[2] required for the alternative design. The following analysis explores only the relevant Landscape and Visual elements and does not comment on any hydraulic, geotechnical or cost factors.

The visual effects of the proposed Cable-stay bridge will be explored in relation to the visual effects of the alternative design, an Arch-network-cable bridge. An existing example of similar scale and function will be used as a baseline, taking into account that certain features would be revised to site specific requirements/design direction. The existing example used for this analysis is the Perry Bridge over the Waikato River near Ngāruwāhia, Waikato[3].

One of the key differences between these two bridge types is to form, the Cable-stay bridge form is asymmetrical, with the cabling converging to a single, taller point (39m at tallest point). This means that visual mass of the bridge is focused on one half of its length, with the cables diverging from the mast becoming more open, allowing views through.

The Arch-network-pipe bridge is symmetrical, with cables forming a 'network' between the deck and the overhead arched, ladder like form which splays at either end into the footings. The existing exemplar bridge is described as 18m high. The visual bulk of this bridge is consistent across the length, appearing denser when viewed from an oblique angle as the gaps between the various elements appear smaller.

[2] https://www.stuff.co.nz/national/121855991/new-37m-mataura-bridge-design-met-with-opposition
[3] https://www.nzherald.co.nz/hamilton-news/news/article.cfm?c_id=1503366&objectid=11942613

Using the scale of the existing proposal in the completed imagery, the relative visual effects can be compared. As noted above, the key differences between the two bridge types is the form and the height. For viewpoint 1, the relative height would be apparent as the Arch-network-pipe bridge would not break the skyline, however its form would be more prominent than the Cable-stay bridge. This is because while the Cable-stay option shows only cables extending towards Huron Street/East Gore, the main arch structure of the Arch-network-cable bridge would be visible across the river, in addition to the supporting cables. The same is true for viewpoint 2.

Viewpoint 3 is both the closest viewpoint to the bridge and presents a clear view of the main mast of the Cable-stay bridge against the surrounding landscape. The asymmetrical form facilitates a relatively clear view of sky through the centre/right of the image, while concentrating the structural elements to the left, where the mast and anchors are visible. In contrast, the symmetrical form of the Arch-network-cable bridge creates a continuous form across the viewpoint, with the two longitudinal arches converging at the apex, and converging at either end, resulting in longer cross members. While of a lower height, the visual effects are distributed horizontally across the field of view – resulting in more of the solid structure in the foreground of the image. The deck structures of the bridges are relatively similar, and therefore both overlay the horizon from this viewpoint, an effect which is unavoidable with the bridge elevated above the 1:100-year flood levels.

Viewpoint 4 is the viewpoint with the least notable differences between the two forms as neither will breach the skyline, and there is visible development on either side, as noted in 3.2.b Visibility Analysis:. However it is likely that the lower form of the Arch-network-cable bridge would sit closer to the existing built form of East Gore, reducing the visual effect from Viewpoint 4, taking into account the decrease in visual permeability caused by the oblique view across the network of cables and arch.

The materiality of both bridges are comparable, and while the Cable-stay bridge has been shown as white/silver and timber, and the Perry Arch-network-cable bridge is Green/Silver and metal, these elements are relatively substitutable (e.g. Neither bridge *needs* to be painted green) and do not greatly influence the relative visual effects of each style.

The final point is in relation to the character of each bridge style, which is connected to the design intent, which has been acknowledged through the report and is mentioned below. The character for the Arch-network-cable bridge is a more traditional form, relatively familiar to most, but revised for modern technology and construction. The Cable-stay bridge references the traditional, triangular forms of suspension bridges throughout New Zealand but a contemporary iteration through asymmetrically, the single mast and scale.

The above can be summarised in the below table and associated images:

Element influencing level of effect:	Bridge type	
	Longford Cable stay bridge	*Arch network pipe bridge (E.g. Waikato Perry Bridge)*
Height	39 (length 100m)	18 (length 130m)

	Above the skyline in viewpoints 1, 2 & 3	Below the skyline in viewpoints 1 & 2, above in 3
Form	Asymmetrical Single vertical element	Symmetrical Continuous Arch
Visual permeability/bulk	Single converging element, concentrating bulk, leaving majority of footprint without overhead structure or visual clutter	Distributed, frequently overlapping elements and continuous overhead structure splayed/larger at either end.
Footings	Single notable footing on proposed embankment on west side of bridge. Eastern integrated with existing embankment	Symmetrical concrete footings on either side. Site specific application would influence this
Colour/material	Metal mast/tubing Cabling Timber decking (steel structure)	Metal tubing Cabling Metal decking
Character	Contemporary form	Traditional form

Table 3 – Comparison of bridge types

See below for comparison imagery

Longford Cable stay bridge (Below) – Viewpoint 3

Waikato Perry Bridge (Below) – Similar angle to Viewpoint 3

https://twitter.com/camtheguzz/status/926006788524187648

Longford Cable stay bridge (Below) – Viewpoint 2

Waikato Perry Bridge (Below) – Similar angle to Viewpoint 2

https://www.nzherald.co.nz/hamilton-news/news/article.cfm?c_id=1503366&objectid=11942613

4.3 *Design and Mitigation*

4.3.a Avoid

No avoidance strategies have been outlined as part of the design.

4.3.b Remedy

No remediation has been proposed as part of this design.

4.3.c Mitigate

The visual effects section above identifies that the proposed bridge structure will be visible from all chosen viewpoints and many areas in the surrounding area. The proposed bridge represents a significant inclusion in the landscape and would benefit from the following landscape treatments:

1. The mast structure could be obscured from specific affected parties (yet unidentified) on Richmond Street by targeted planting of taller exotic trees. It is noted that any proposed tree planting on the existing stopbank would need to be carefully considered and undertaken with engineer's advice.

2. Any lighting treatments shall be carefully designed to be focused away from the residential areas, including any required anti-collision lighting for aircraft (noting that no defined lighting treatments were included in the supplied design).

3. This Landscape and Visual Impact Assessment has been carried out with the current design (with the white mast assessed as shown). At the time of writing there were suggestions of a 'cultural narrative' being included in the mast paint treatments. A carefully designed paint treatment (including any patterning) could possibly provide opportunities to lessen the visual impact of the mast.

In other locations where effects are rated as higher however, mitigation such as planting will only reduce effects to the horizontal, low elements of the bridge structure and ends. Due to the height of the mast, significant screening is not seen as being a viable nor practical consideration.

5 Conclusion

In conclusion, the landscape and visual effects of this proposed bridge structure range from **moderate – low to high** depending on the viewpoint as outlined previously as assessed against the current supplied information (See section 3.2 Visual Effects, to be read in conjunction with Appendix A).

It is acknowledged that the bridge will provide benefits to the community and be a 'landmark' structure defining the recreation path and the linkages it provides. The extra structure would reinforce the gateway experience to Gore and would be likely to become a feature that many would value. It is important to recognise that the landscape and visual impact is the focus of this report, and that there may be other values and influences to be weighed against these landscape values.

The structure of the bridge includes the mast which rises to a height of just over 39 metres, which is significantly taller than any immediate element in the landscape (Refer to DC Structures Studio). This gives the proposed bridge structure a visual presence that is likely to be far reaching and difficult to reduce through any landscape mitigation. This mast could be viewed as a highly influential component of the overall bridge design – and in my opinion this defines the landscape and visual impact to a major extent. The lower portions of the structure are more readily mitigated and provide considerably less visual impact than the mast.

As mentioned above, the mast would be visible from many areas, so the most significant viewpoints were selected as representative of the different viewing audiences. It is also worthy of note that at the time of writing there were details of the bridge design yet to be finalised – and it is possible that these design features will have the effect of altering the visual presence.

In terms of mitigation, any landscape treatments would have the effect of aiding in visual mitigation around the interface between the structure and ground plane – however the height of the mast makes visual screening difficult. This is particularly true of the site along River Terrace (viewpoint 3) as the proximity of the structure to the houses does not allow for any viable screening.