

Appendix 6: Technical Report:

Assessment of Landscape & Visual Effects, Boffa Miskell

Nukumaruru Station Road Extension

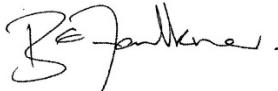

Assessment of Landscape & Visual Effects
Prepared for South Taranaki District Council

15 March 2017

The logo for Boffa Miskell, consisting of a large, white, stylized letter 'B' that is partially cut off by the right edge of the page.

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1.0 Introduction

This landscape and visual assessment has been prepared as part of the Application for the Notice of Requirement (NoR) for South Taranaki District Council (STDC) to extend Nukumarū Road between SH3 and Waiinu Beach Road.

This assessment has been based on the conceptual alignment of the proposed road. The design of earthworks will be undertaken at a later stage and cannot be assessed in any detail at this stage. Consequently, this assessment also recommends mitigation measures which will assist and guide the detailed design of the new road, in order to minimise the potential landscape and visual effects. This assessment of effects assumes that the road design will adopt the recommended mitigation measures.

2.0 Site Location & Context

The landscape character is rural farmland dominated by grazed pasture, shelter planting and small pine plantations and woodlots, farmstead buildings and dwellings.

The proposed alignment is located in a rural area between SH3 and the coast (see **Figure 1**). The inland extent between SH3 and the railway line traverses easy flat to rolling high producing farmland. Between the railway line and the coast, the landscape character gradually changes to a more coastal nature, typified by lower producing farmland, stunted and wind blown trees and increased salt influence. Photographs in Figure 2 assist to describe the topography and land cover along the route.

The Operative District Plan overlays a Coastal Protection Area (CPA operative) that extends 5km inland at this point (including 5km of the alignment). As part of the development and progression of the Proposed District Plan (amended by decisions, November 2016) the inland extent of the Coastal Protection Area (CPA proposed) has been redrawn and now extends 1.3km inland (Refer to **Figure 1**). A 550m section of the alignment (approximately 1 Ha) lies within the CPA (proposed).

3.0 Existing Landscape Description

The landscape features of the proposed route are described below using approximate chainages to define six distinct sections of the road. Photographs relating to these descriptions are in **Figure 2**.

000-700m The section of the route crosses a flat paddock between SH3 and Nukumarū Station Road. The alignment is adjacent to a shelterbelt of exotic trees (*Banksia integrifolia*)

700-2500m this section of the route will require the widening of an established public road. The southern section of the road has a dense mix of native and exotic trees and shrubs within the road reserve that extend to the edge of the narrow carriageway.

2500-3000 traverses a flat paddock adjacent to the railway line. The land rises at the western end where it encounters the large dunes.

3000-4400- this section crosses the largest dune landforms on the route, varying in height from 7.0m to 17.0m high with some steep to moderately steep slopes. The dunes are relatively unmodified and currently support

a recently replanted plantation of pine trees and rough pasture at the southern end. Some ridges, in rough pasture, have small sand blowouts.

4400-6600 The dunes in this area are lower (3-5m high) and separated by wide gently sloping or flat depressions. The dune ridges support rough low production grasses with the lower ground between dunes with improved pasture and are more intensely grazed. Between 6000 and 6600 a recently replanted pine woodlot is established on the slightly more convoluted dune landform (this is also the location where the route lies within the CPA proposed). The land adjacent to the route at this location is a combination of improved pasture with rough pasture on the higher parts of the dune landforms.

6600-8000. This section of the route lies within the Nukumar Domain Boundary. The land is undulating to flat and is grazed. The alignment runs parallel to a line of pine trees which is incomplete with gaps between groups of trees. The trees show the effects of the harsh coastal influences of the salt and wind. The paddocks north of this line of trees are used to irrigate waste water from the nearby meatworks.

Nukumar Domain.

The Nukumar Domain occupies the land between the proposed alignment and the coast. (**Figure 3**) It has a relatively undeveloped and a wild and isolated character. The Domain does not appear to be used to any great extent but it does provide public open space and access to the coast.

The land is undulating with some hummocky areas and a few locations with sand blowouts. An old quarry site is located at the western end of the Domain and a 4WD track crosses the land to a rocky bluff at the coast. The area is grazed and does not appear to have been recently cultivated. The higher ground supports rough grass and scattered coastal shrub and herb species that are tolerant to grazing.

4.0 Existing Coastal Natural Character

Definition

Natural character is the term used to describe the expression of natural elements, patterns and processes in a landscape (or the 'naturalness'). The degree or level of natural character of a coastal environment depends on;

- The extent to which natural elements, patterns and processes occur; and
- The nature and extent of modifications to the landscape, seascape, coastal environment, and ecosystems.

The highest degree of natural character (greatest naturalness) occurs where there is least modification.

CPA (Operative)

5km of the alignment (from 3000-8000) is on and just within the boundary of the CPA (operative). The land use of the area, as described above, is a combination of grazed pasture, rough pasture and forestry. While the dune landforms appear to be generally unmodified the land cover is highly modified with little or no indigenous coastal species or coastal ecological systems evident. The farming practices have stabilised these inland dunes, and with the exception of the isolated blowouts the dynamic coastal processes of dune building/movement are no longer able to occur. Consequently, this area has a moderate-low level of natural character.

CPA (Proposed)

The Waiinu CPA defined in the Proposed District Plan is identified as having Very High level of natural character¹. The overall 'very high' rating for the whole of the Waiinu CPA is obtained by amalgamating all of the values that contribute to the natural character of that area. The level of natural character which is defined does not therefore mean that all parts of the Waiinu CPA will have the same level of natural character, when considered at a fine site specific scale.

The small inland part of the Waiinu CPA area through which the alignment passes (6000-6600) could not be considered as having very high natural character due to the degree of modification apparent in this location. The pine plantation shown on the aerials has been harvested and replanted again as exotic forest which precludes the establishment of coastal vegetation and ecological systems. The paddocks adjoining the plantation are a mix of improved pasture in the low areas between the higher and dryer areas with rough pasture. Fences, stockwater troughs and four-wheel drive tracks add further modification to the area. While the dune landforms, underlying the plantation and CPA area, is largely intact the modified land cover reduces the level of natural character in this location. This small area of the CPA (proposed) has the same level of natural character as the CPA operative; i.e. Moderate-low.

5.0 Proposed Works

The new road would be 8km in length and run between SH3 and Waiinu Beach. The works will involve widening and realignment to 1.6km of the existing Nukumaru Station Road and construction of 6.4m of new road across farmland.

The new road is proposed to be a typical 20m wide operational designation with a 6m wide two-way sealed carriageway, unsealed shoulder and grassed stormwater verges. This design is standard for STDCs local roads. (Refer to the NoR application documents for a full description of the works).

Construction of the road will require earthworks which will be most significant through the dunelands sections of the route. It is anticipated that the earthworks design will seek to balance cut and fill volumes and avoid disturbance of land beyond the construction designation corridor.

In relation to potential landscape and visual effects the key elements of the proposed works are:

- Modification of landforms- earthworks through sand dune areas;
- Removal of trees and other vegetation that currently contribute to the character of the area and provide visual screening and wind shelter.
- Effects on the natural character in the Coastal Protection Area (CPA) identified in both the Operative Plan and Proposed District Plan (as amended by decisions)
- Temporary effects of construction activity.

Mitigation Measures

The most effective way to avoid or minimise potential landscape effects of the new road is to include mitigation measures into the detailed design of the road. The table below identifies the mitigation measures which should be included during the design process. Refer also to photographs in **Figure 2**

¹ South Taranaki Landscape Assessment 2014, prepared by Boffa Miskell Ltd for STDC

Table 1

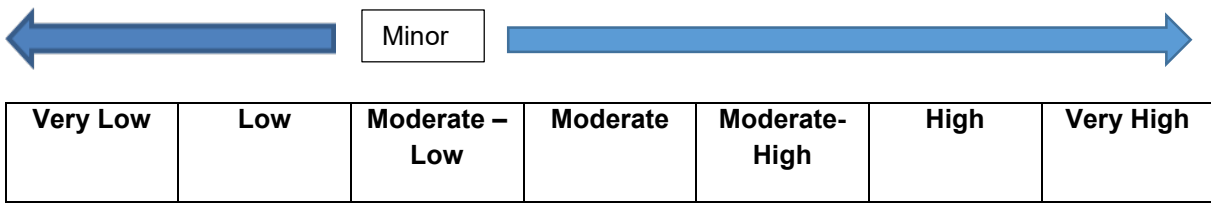
Chainage (m)	Proposed Works	Landscape and Visual Mitigation
From SH3 0000 – 700	The new section of road traverses flat farmland adjacent to a fence line and semi mature exotic tree shelter belt. Minimal landform modification required. 1 dwelling close to road	Retain shelterbelt beside road alignment.
700 – 2500	Widen existing Nukumaruru Road and railway crossing 2 dwellings in close proximity to the road Minimal landform modification.	Minimise removal of woody vegetation where possible through; alignment of road within existing designation, prune or trim canopy instead of removal.
2500 -- 3000	Flat farmland, adjacent to rail corridor	Alignment from here to Waiinu Beach Road within CPA (operative Plan). Well designed earthworks (refer to recommendations) will reduce the effects on coastal processes, influences or qualities which remain apparent.
3000 – 4400	High Dunes- (7m-17m high) These are the largest dunes along the route at. With some steep to moderately steep dunes, some pasture ridges with sand blowouts and coastal vegetation. Greatest scale of earthworks required in this section.	The construction designation needs to be wide enough to be able to integrate cuts and fills with the existing topography in a natural way, and not be constricted by the designation boundary. Cuts and fills to be finished with rounded surfaces to reflect the dune landforms and avoid sharp edges or flat slope faces.
4400-6600	Lower duneland topography (3m-5m high) Lesser scale of earthworks on flats more through ridges.	As above. Alignment from 6000 to 6550 within CPA (proposed). Well designed earthworks will reduce effects on natural character of the coastal environment.
6600 - 8000 Waiinu Beach Road	Gently undulating topography- Grazed pasture. Small scale earthworks required. The alignment follows the Nukumaruru Domain Boundary. The road will introduce traffic movement and noise through this area.	The existing shelter trees on the fence line between 6550 and 7550 should be retained and interplanted. If more substantial shelter / irrigation buffer is required between this land and the road a sequenced replanting strategy should be planned.

6.0 Landscape and Visual Effects Assessment

The assessment of landscape and visual effects set out below assumes that the detailed design of the road have considered and incorporated the mitigation measures set out in Table 1. I have adopted the following seven point scale to inform this assessment:

Less than Minor

More than Minor



Landscape Effects

Landscape effects relate to the physical changes to the landscape features of the construction area and the resulting effects on the landscape character of the locality.

Where the alignment crosses flat and gentle topography, the scale of earthworks are small and will be a low level of effect. The greatest modification will occur where the dunes are the highest and steepest (3000- 4400) and to a lesser extent between 4400 and 6600. The effects of modification of the dunes can be mitigated through sympathetic design as outlined in Table 1. The objective of this mitigation is to integrate the road with the adjoining landforms as far as possible rather than cut through them. Overall the scale and nature of the earthworks will have a low level of adverse effect, at a site level, within the road designation. At a wider scale the landscape effects will be very low.

Where possible, trees and woody vegetation adjacent to the road alignment should be retained. This will serve to anchor the new road into the landscape and retain the existing landscape character of the area.

A new road will introduce a new activity into the rural land south of the railway line. While this will change the quiet amenity of the farmland area, the absence of dwellings means residents will not be affected.

It is understood that a significant proportion of the Nukumar Domain is subject to long term private leases for grazing and forestry, including the parcels of land in which the proposed road traverses. While the name of the reserve suggests recreation and access by the public, and legally can do so, in reality the land operates as typical farming unit. There are other areas of the much larger Nukumar Domain where there is public access has been provided via Waiinu Beach and along the coast.

Visual Effects

The viewing audience of this proposal is small in number due to the flat terrain and relatively low density resident population.

The highest density of residences are situated along the existing section of Nukumar Station Road where two residences are close to the road and three set well back off the road. The visual effects of widening this section of road, if any, would be related to the removal of tall or dense vegetation in the road reserve which may result in opening up views to the road and traffic for the two residences next to the road. If this were the case the level of visual effects for these residents would be low, given it is a public road already and it could be expected that traffic would use it. From these residences the road makes up a very small portion of the views available.

There are no residences or public areas from which the new road south of the railway line would be visible, with the exception of the southern extent at Waiinu Beach Road and Nukumar Domain, from where the road may be visible. If visible, the road will not be a dominant feature in the coastal landscape due to its low profile and the primary viewing direction would typically be out to the ocean rather than inland.

The visual effects of the road at a local level would be low.

Effects on Natural Character in the Coastal Environment

The Operative CPA corresponds to topography, whereas the Proposed CPA has been developed to give effect to the NZCPS (2010) and reflects the “coastal environment” as defined in that national policy statement. There are appeals on the Proposed CPA, but not specifically on the inland extent of the Waiinu Beach area – appeals on wider issues, not pertinent to this landscape and visual assessment.

The Waiinu CPA defined in the Proposed District Plan is identified as having Very High level of natural character². The overall ‘very high’ rating for the whole of the Waiinu CPA is obtained by amalgamating all of the values that contribute to the natural character of that area. The level of natural character which is defined does not therefore mean that all parts of the Waiinu CPA will have the same level of natural character, when considered at a fine site specific scale.

The small inland part of the Waiinu CPA area through which the alignment passes (6000-6600) could not be considered as having very high natural character due to the high degree of modification and absence of coastal features and processes. (Refer discussion in Section 4) The degree of natural character for the corridor through which the alignment passes, is the same for both the operative and proposed CPA, i.e a low-moderate level of natural character.

The area through which the proposed road is located has a relatively low level of coastal natural character and therefore has a lower sensitivity to change and potential for significant adverse effects. While the new road will modify the dunes within the construction corridor and bring a new traffic activity to the farmland, these modifications will not have any significant adverse effects on the natural character of this part of the coastal environment.

7.0 Conclusions

Generally the landscape is able to absorb the proposed road due to its relatively easy terrain and isolation from residences and other sensitive locations. However, the proposed mitigation measures are essential to ensure that the effects are minimised particularly in relation to the dune landforms and absorbing the road within the wider undeveloped character of the Nukumaru Domain and coastal landscape.

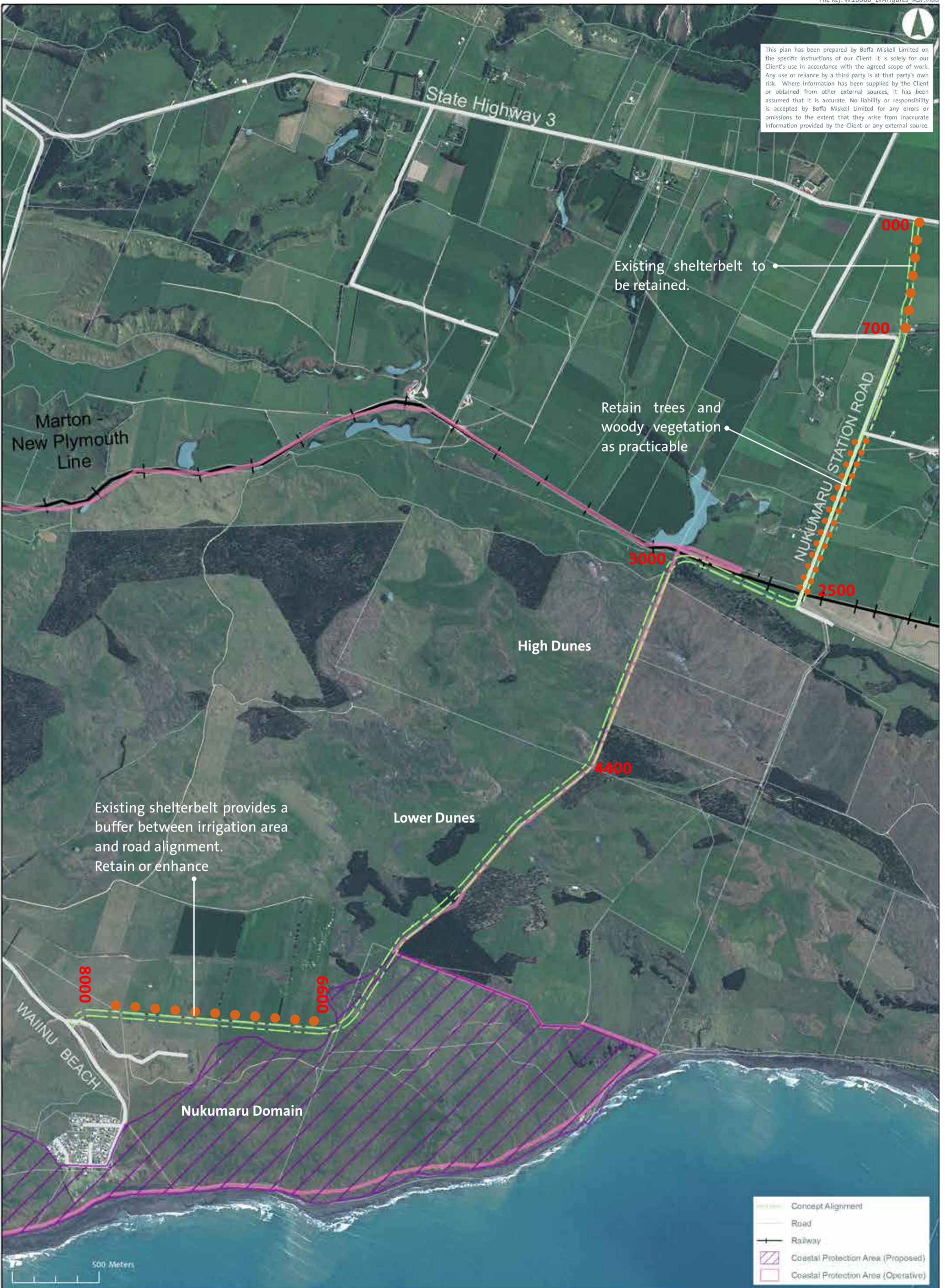
8.0 Recommended Conditions

1. Where practicable, retain and enhance the existing shelterbelts adjacent to the alignment (Chainage 000-700 and 6550-7550).
2. Minimise the removal of vegetation within the road reserve of Nukumara Station Road as far as practicable.
3. Ensure that the construction designation is of sufficient width to enable the earthworks to be integrated with the existing topography in a natural way, and not be constricted by the designation boundary, and to avoid clearly visible transition of the works with the adjacent landforms. This is particularly important through the duneland topography. (*The designation, reviewed 15.3.2017, provides adequate space for the above requirements to be met.*)
4. All cuts and fills to be finished with rounded surfaces to reflect the dune landforms and avoid sharp edges or flat slope faces.

² South Taranaki Landscape Assessment 2014, prepared by Boffa Miskell Ltd for STDC



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000-700 View north toward SH3



700-2500 View north, southern end of Nukumar Station Road



2500-3000 View east along railway



3000-4400 High dunes, view south



4400-6600 Low dunes, view north



4400-6600 Low dunes, view north. Area of young pines lie within the CPA (proposed).



6600-8000 view east



6600-8000 view south across Nukumar Domain toward the coast

