

# Ngawha Generation PDP Submission

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To: Far North District Council

Full Name: Ngawha Generation Limited Attn: Taryn Collins

Contact: (09) 407 0633

Address for Service: Taryn Collins, [taryn.collins@topenergy.co.nz](mailto:taryn.collins@topenergy.co.nz) & David Badham  
[davidb@barker.co.nz](mailto:davidb@barker.co.nz)

Date: 21 October 2022

Re: Submission on Proposed Far North District Plan (**PDP**) – Ngawha Generation Limited (**NGL**)

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## Submission Information:

This is a submission on the Proposed Far North District Plan (**PDP**).

NGL could not gain an advantage in trade competition through this submission.

The specific provisions of the PDP that NGL's submission relates to are attached.

NGL opposes/supports/seek amendment to the specific provisions as listed in the attached document. The reasons are provided in the attached document.

The decisions that NGL wishes Far North District Council (**FNDC**) to make to ensure the issues raised by NGL are dealt with are also contained in the attached document.

NGL wishes to be heard in support of this submission.

If others make a similar submission, NGL will consider presenting a joint case with them at a hearing.

**Ngawha Generation Limited**

## 1.0 Introduction

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Ngawha Generation Limited (**NGL**) is a subsidiary of Top Energy Limited (**Top Energy**). NGL acknowledges that Top Energy has made a separate submission on the PDP that requests a variety of relief. NGL supports that submission and supports the relief sought by Top Energy.

NGL administers and operates the Ngāwhā Geothermal Power Station at Ngāwhā Springs. A pilot plant with 2 x 5 Megawatts (**MW**) stations was originally commissioned in 1998 at Ngāwhā Springs, based on Ormat binary technology. In 2008, due to the success of the pilot, NGL expanded with the largest unit available at that time, a further 15MW. Following a number of years of feasibility studies, business cases and resource consent applications, a further 31.5MW expansion was approved and commissioned in 2020, resulting in a current total output of 57MW of generation.

The Ngāwhā Geothermal Field is the only high-temperature geothermal resource in New Zealand outside the Taupo Volcanic Zone. The reservoir is about 600 metres below ground and is thought to be between 20 and 40 square kilometres in area, with temperatures reaching temperatures up to 230 degrees Celsius. Using leading-edge technology, geothermal fluids are brought to the surface and passed through a heat exchanger where energy (heat) is transferred to a working fluid (pentane). The pentane then boils, creating a high-pressure vapour which drives the turbines, turning the generator.

The Ngāwhā power station provides renewable electricity for the Far North and will export into the national grid over 95% of the time. There are more geothermal generation opportunities at Ngāwhā, with a further power station consented, subject to a monitoring period to prove the sustainability of the geothermal resource, which would grow the production to 88MW by approximately 2027.

The Ngāwhā geothermal power station is considered by the Resource Management Act 1991 (**RMA**) as a physical resource and considered by the Regional Policy Statement (**RPS**) of Northland as “regionally significant infrastructure”.<sup>1</sup>

The protection of existing infrastructure and enabling future growth of renewable power generation assets are vital in order to support growth and development in the Far North District and must be provided for in the District Plan. Reliable electricity supply is of critical importance to the growth of Northland’s economy and to communities, and has a key role in opening up new economic and social opportunities. Electricity infrastructure, and renewable energy generation such as that provided by the Ngāwhā Geothermal Power Station also has a vital role to play in the decarbonisation of New Zealand’s economy. The Ngāwhā Geothermal Power Station is also critical to the Far North District and wider Northland region’s energy resilience, and reduced reliance on transmission from elsewhere around the Country. It is critical for local authorities to strike the right balance, and ensure that district plan provisions enable the critical infrastructure and renewable energy generation that underpins New Zealand’s emissions reduction aspirations.

This submission addresses the implications of the PDP for NGL, focused specifically on the appropriate zoning and provisions for the Ngāwhā power station.

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<sup>1</sup> Pursuant to clause 1) (f) of Appendix 3 of the RPS, “Electricity generation facilities (including Ngāwhā geothermal power station and Wairua hydroelectric power station) which supply electricity to either the national grid or the local distribution network” are considered to be regionally significant infrastructure.

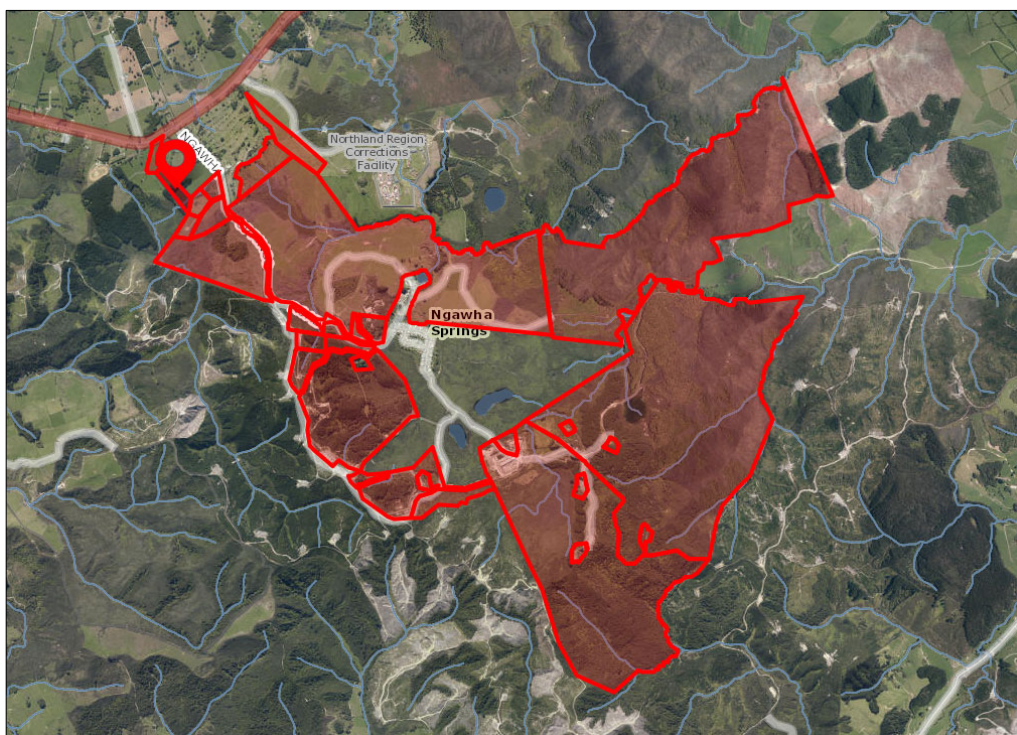
**Section 2.0** contains general comments on the PDP zoning at Ngāwhā Springs and identifies the zoning that NGL seeks and how/why relevant provisions should be improved to more efficiently and effectively achieve the proposed objectives of the Plan, and the purpose of the RMA. **Attachment 1** identifies the specific changes sought to provisions of relevance to NGL.

## 2.0 General Comments

### 2.1 Zoning of Ngāwhā

NGL currently owns and administers a number of parcels of land in Ngāwhā Springs associated with the administration and operation of the Ngāwhā Geothermal Power Plant. These land parcels are primarily located off Ngāwhā Springs Road and are outlined in red in **Figure 1** below.

As noted, large portions of the land owned by NGL are utilised for geothermal power generation given the area’s abundant geothermal resource. This includes the existing Power Station, associated existing production wells, injection wells and further infrastructure and facilities associated with the extraction, generation and transfer of the geothermal resource.



**Figure 1 – NGL owned Land at Ngāwhā Springs (Source: EMaps)**

The zoning of the NGL land at Ngāwhā Springs under the operative Far North District Plan (**ODP**) is provided below in **Figure 2**. This shows a large area of Industrial Zone to the east, south and west of the Ngāwhā Springs settlement, with Rural Production Zone to the north. There are also areas of Conservation Zone within NGL’s ownership and surrounding the Ngāwhā Springs settlement.

The zoning of the NGL land at Ngāwhā Springs under the PDP is provided below in **Figure 3**. The zoning pattern is largely similar, however with significant reductions in the Light Industrial zoning to the south of the Ngāwhā settlement, and the inclusion of a Māori Purpose Zone.

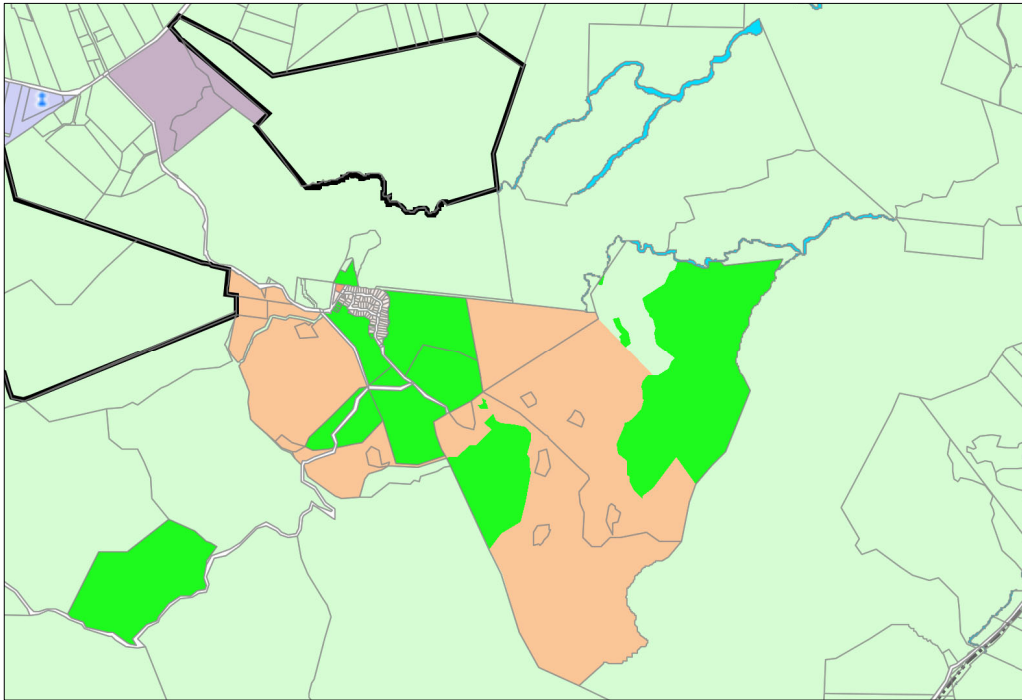


Figure 2 – ODP zoning of the Ngāwhā Springs land, including NGL owned land, with Industrial Zone being peach coloured, light green for Rural Production and highlighter green Conservation zone (Source: ODP Maps, FNDC).

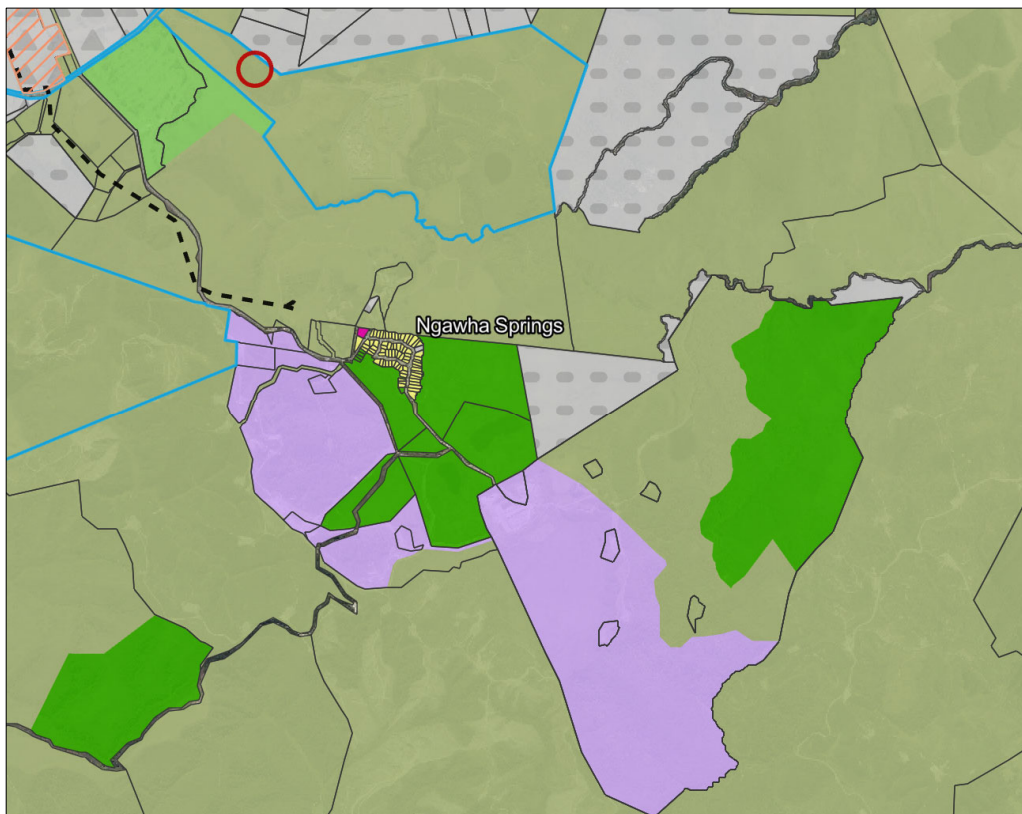


Figure 3 - PDP zoning of the Ngāwhā Springs land, including NGL owned land, with purple for Light Industry, darker green for Conservation and, paler green for Rural Production, and grey hatch for Māori Purpose Zone (Source: PDP Maps, FNDC).



As indicated in the Introduction section of this submission, NGL already holds consents for further works on its land at Ngāwhā Springs. This includes to:

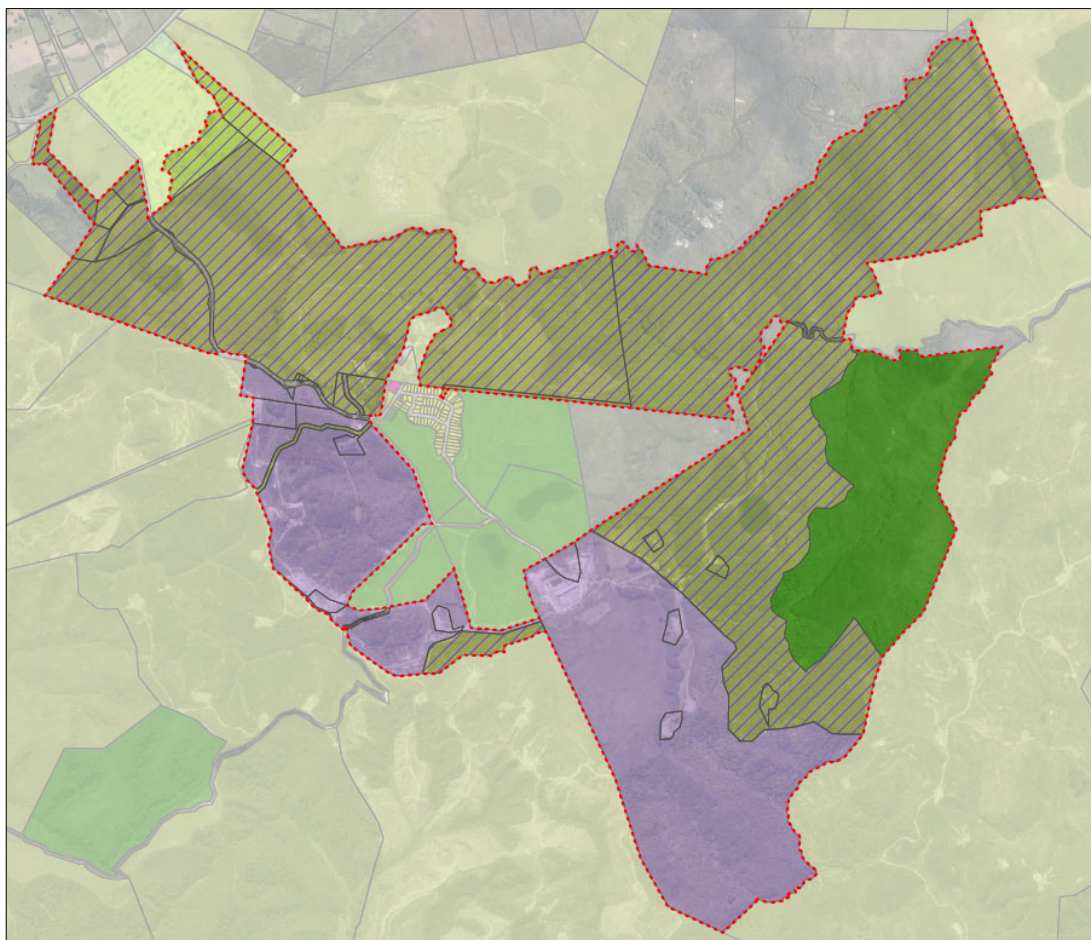
- Construct OEC5 power station;
- Drill production and reinjection wells; and
- Install interconnecting overland pipe

NGL also has further plans for its land at Ngāwhā Springs, that could include:

- Solar generation and other forms of renewable energy generation;
- Further transmission lines to connect the Ngāwhā Geothermal Power Plant to the National Grid;
- Further geothermal generation wells and associated interconnecting piping, representing major construction activities with significant local employment opportunities; and
- Other activities on site associated with the generation and distribution of renewable energy

As is indicated in **Figures 2 – 3** above, FNDC has reduced the amount of Light Industrial Zone land in the PDP when compared to the amount of Industrial Zone in the ODP. NGL considers that the Light Industrial Zone OR a Special Purpose Zone (similar to that applied to the Ngāwhā Innovation Park to the north operated by Far North Holdings) should be extended to apply to NGL’s land holdings identified in **Figure 4** below.

S432.001



**Figure 4 – Proposed Zoning map for NGL Land at Ngāwhā Springs – full scale version in Attachment 2**

NGL considers that this zoning request is appropriate for the following reasons:

- Given the consented and future operations intended for the site, Light Industrial Zoning OR a bespoke Special Purpose Zoning would most efficiently and effectively enable those operations and the regionally significant economic, social and environmental benefits associated with it;
- The zoning sought promotes the sustainable management of natural and physical resources on the site;
- The zoning sought is consistent with Part 2 of the RMA;
- The zoning sought is appropriate in terms of section 32 of the RMA;
- The zoning sought represents an efficient use and development of natural and physical resources;
- The zoning sought appropriately avoids, remedies or mitigates adverse effects on the environment; and
- The zoning sought is consistent with the balance of the PDP, in particular the Strategic Direction section of the Plan.

Further submission points regarding the Light Industry Zone provisions are made in **Attachment 1**. Should FNDC consider that a Special Purpose Zone is appropriate, NGL is willing to work with FNDC to develop bespoke zoning provisions to give effect to its zoning request outlined above.

## 3.0 Conclusion

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In conclusion, NGL seeks the following relief:

- (a) That NGL's general comments in Section 2.0 are addressed through decisions on the PDP and the specific amendments sought in **Attachment 1** are made; and
- (b) Any further necessary consequential amendments required to achieve (a) above.

NGL looks forward to working collaboratively with FNDC to address the above relief and is happy to meet with FNDC policy staff or consultants to work through these matters.

# Ngawha Generation PDP Submission



## Attachment 1: Specific Submission Points on PDP

Sub #	Feedback Topic	Support/Oppose/Seek Amendment	Comments / Reasons	Relief Sought
1	Definitions - General	Seek amendment	<p>While the PDP includes activity-based rules which manage the establishment and operation of activities within zones and sites, the rules include activities that do not have definitions and there are various discrepancies between the activities and terms utilised within the zone and resource overlay chapters.</p> <p>The incorporation of nesting tables is also necessary, especially when considering the definition of “industrial activities” and the different subsets of activities that would be classified as “industrial activities.” This is raised in sub point #2 below with regard to “light industrial activities” and heavy industrial activities.</p>	<p>Review all definitions, amend overlaps, and/or create definitions for terms which are not currently defined. <b>S432.002</b></p> <p>Review and amend rules as necessary to refer only to defined terms used in activity-based rules.</p> <p>Include nesting tables to clearly group activities into categories, in particular relating to the relationship between “industrial activities”, “light industrial activities” and “heavy industrial activities.”</p>
2	Definitions – Light Industrial activities	Seek amendment	<p>The term “light industrial activities” is utilised throughout the Light Industrial Zone, however there is no definition of what that is, only a definition of “industrial activities”.</p>	<p>Include a new definition for light industrial activities that specifically includes “<i>activities related to the construction, operation and maintenance of structures associated with renewable electricity generation</i>”. <b>S432.003</b></p>
3	Definitions – Heavy Industrial Activities	Seek amendment	<p>The term “heavy industrial activities” is utilised throughout the Light Industrial Zone Chapter, however there is no definition of</p>	<p>Include a new definition for heavy industrial activities that clarifies what is captured in the term. <b>S432.004</b></p>

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+64 375 0900 | admin@barker.co.nz

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			what that is, only a definition of “industrial activities”.	
<b>PART 3 – AREA-SPECIFIC MATTERS - ZONES</b>				
4	Mapping	Seek Amendment	As a general comment, the range of grey colours and symbols used to identify a number of zones (e.g. Horticulture, Rural Residential, Māori Purpose, and Hospital Zone) are difficult to differentiate between.	Utilise different colours to assist with differentiating between the different zones.  <b>S432.005</b>
5	Zoning of NGL land at Ngāwhā Springs	Seek Amendment	As outlined in the overall submission in Section 2, NGL seeks that land outlined in <b>Figure 4</b> and included as <b>Attachment 2</b> be zoned as Light Industry or Special Purpose Zone given the consented and future operations intended for the site, and to more efficiently and effectively enable those operations and the regionally significant economic, social and environmental benefits associated with it.	Zone the NGL land as Light Industry OR Special Purpose Zone in accordance with the areas identified in <b>Figure 4</b> and <b>Attachment 2</b> (or relief to the same effect). If that land is zoned as Special Purpose Zone, include a bespoke set of provisions in the Plan which make light industrial activities and activities related to the construction, operation and maintenance of structures associated with renewable electricity generation and the activities undertaken by NGL as permitted activities. <b>S432.001</b> <b>S432.029</b>
6	Light Industrial Zone – LIZ-O1 – LIZ-O5	Support, seek amendment	NGL is largely supportive of the LIZ objectives as notified. However as identified in Sub point #2 above, clarity is required on the definition of “light industrial activities”. Depending on how that is defined, further	Subject to the definition of “light industrial activities”, make any necessary amendments to the LIZ objectives to ensure that appropriate activities (such as activities related to the construction, operation and maintenance of structures associated with renewable electricity <b>S432.006</b> <b>S432.030</b> <b>S432.031</b> <b>S432.032</b> <b>and</b> <b>S432.033</b>



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			amendments may be required to the LIZ objectives.	generation) are recognised and provided for in the Light Industrial Zone.
7	Light Industrial Zone – LIZ-P1 – LIZ-P6	Support, seek amendment	NGL is largely supportive of the LIZ policies as notified. However as identified in Sub #2 and 3 above, clarity is required on the definition of “light industrial activities” and “heavy industrial activities”. This is particularly relevant for LIZ-P3(a) which seeks to avoid the establishment of “heavy industrial activities” that do not support the function of the Light Industrial Zone. Depending on how these terms are defined, further amendments may be required to the LIZ objectives.	Subject to the definition of “light industrial activities” and “heavy industrial activities”, make any necessary amendments to the LIZ policies to ensure that appropriate activities (such as activities related to the construction, operation and maintenance of structures associated with renewable electricity generation) are recognised and provided for in the Light Industrial Zone.
8	Light Industrial Zone – LIZ-R1	Oppose, seek amendment	NGL considers that the 450m <sup>2</sup> GFA limit in this rule is an unnecessary restriction. Industrial activities within a light industrial area typically require large buildings. Subject to compliance with the bulk and location standards (e.g., coverage) there is no other logical reason to impose a GFA restriction on buildings or structures in an industrial area.	Amend LIZ- R1 as follows: <i>“Activity status: Permitted</i> <i>Where:</i> <b><i>PER 1</i></b> <b><i><del>The building or structure on the site does not exceed a GBA of 450m<sup>2</sup>.</del></i></b>
9	Light Industrial Zone – LIZ-R2- R4 & LIZ-R6	Support	NGL supports these activities being permitted in the Light Industrial Zone.	Retain as notified.

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10	Light Industrial Zone – LIZ-R5	Oppose, seek amendment	NGL considers that the 200m <sup>2</sup> GFA limit in this rule is an unnecessary restriction with no apparent justification. Activities within a light industrial area typically require large buildings. Subject to compliance with the bulk and location standards (e.g., coverage) there is no other apparent reason to impose a GFA restriction on Convenience stores, restaurants, cafes and takeaway food outlets.	Amend LIZ- R5 as follows: <i>“Activity status: Permitted</i> <i>Where:</i> <b><i>PER-1</i></b> <b><i>The convenience store, restaurant, café or takeaway food outlet does not exceed a GFA of 200m<sup>2</sup>.”</i></b>	<b>S432.013</b>
11	Light Industrial Zone – New Rule	Seek amendment	Subject to the definition of “light industrial activities” and associated nesting tables sought in sub points #1-3 above, the light industrial zone provisions need an explicit rule permitting appropriate “industrial activities” and “light industrial activities” in the LIZ Chapter.	Subject to the definition of “light industrial activities”, make any necessary amendments to the LIZ rules to permit appropriate “industrial activities” and “light industrial activities” (including activities related to the construction, operation and maintenance of structures associated with renewable electricity generation).	<b>S432.014</b>
12	Light Industrial Zone – LIZ-R7	Oppose, seek amendment	NGL opposes discretionary activity status for commercial activities within the Light Industrial Zone. These activities often locate within the Light Industrial Zone and a discretionary activity status is not justified.	Amend the activity status for LIZ-R7 to permitted activity.	<b>S432.015</b>
13	Light Industrial Zone – LIZ-R8 – LIZ-R15, LIZ-R17 & LIZ-R19	Support	NGL supports the activity status of these activities in the Light Industrial Zone.	Retain as notified.	<b>S432.016</b> <b>S432.017</b> <b>S432.018</b> <b>S432.019</b> <b>S432.020</b> <b>S432.021</b> <b>S432.022</b> <b>S432.023</b> <b>S432.024</b> <b>S432.025</b>

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14	Light Industrial Zone – LIZ-R16	Oppose, seek amendment	NGL considers that Community corrections activities should be permitted in the Light Industrial Zone, consistent with how those activities are treated in the Light Industrial Zone in the Whangārei District Plan. <sup>2</sup> These activities exist in the vicinity and can be compatible within a Light Industry Zone.	Amend the activity status for LIZ-R16 to permitted activity.	S432.026
15	Light Industrial Zone – LIZ-R18	Oppose, seek amendment	NGL considers that primary production should be permitted in the Light Industrial Zone. Often, as is the case with some of the NGL land being sought to be rezoned, Light Industry Zone land can be vacant pending the appropriate market conditions and opportunities to eventuate for development. Utilising any vacant land for primary production (e.g., grazing) is a logical and efficient use of that land until such time that it can be developed, and doesn't generate any reverse sensitivity effects or other effects that require management via a resource consent requirement.	Amend the activity status for LIZ-R18 to permitted activity.	S432.027
16	Light Industrial Zone - LIZ-S1-LIZ-S8	Support	NGL generally considers that the standards notified are appropriate, subject to any	Retain as notified, unless further amendments are consequentially required based on amendments	S432.028, S432.039, S432.040, S432.041, S432.042, S432.043, S432.044, S432.045

<sup>2</sup> See LIZ-R18 of the Whangārei District Plan Light Industrial Zone.

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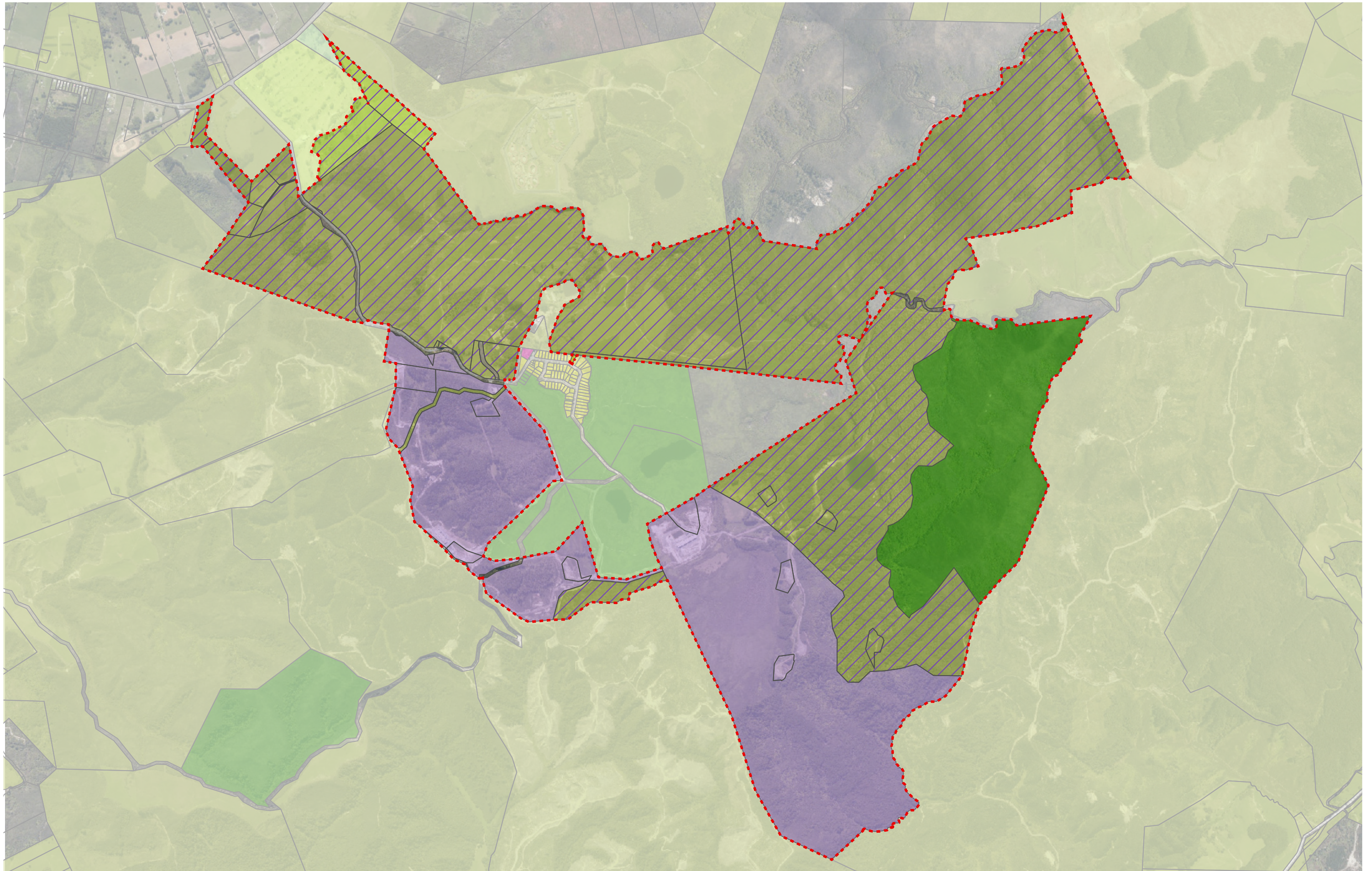
			necessary amendments based on the definition of relevant terms previously identified.	to existing definitions or additions of new definitions sought by NGL.
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## Attachment 2 – NGL Ngāwhā Land - Plan Showing Zoning Sought

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**LEGEND**

- |   |  |  |
|---|--|--|
|  Ngawha Generation Land |  Light Industrial   |  Open Space  |
|  Rural Production      |  Natural Open Space |  Proposed Light Industrial OR Special Purpose Zone |

**PROPOSED ZONING MAP**

Scale - 1:20,000 @ A3  
October 2022