

Cook Costello Job No. 14190-006

26 August 2021

Attention: Wayne Smith

RE: Addendum to the Ngawha Innovation & Enterprise Park Ultimate Development Site Suitability Report

Cook Costello has been requested to provide an addendum to the Ultimate Development Site Suitability report dated 14th September 2019 encompassing the evolution of the Park's ultimate development plans since that time and the resulting proposed Master Plan.

Relevant documents to be read in conjunction with this addendum include:

- Cook Costello 'Ngawha Innovation & Enterprise Park – Ultimate Development – Site and Infrastructure Suitability Report', dated 14th September 2019.
- Associated 2019 resource consent engineering drawing set.
- Far North District Council – resource consents 2200203RMACOM, 2200204RMACOM, 2300164-RMALUC, and 2300598-RMALUC
- Northland Regional Council – resource consents AUT.041973.01.01 .. AUT.041973.05.01 and AUT.042751.01.01 .. AUT.042751.03.01.
- Traffic Planning Consultants – Integrated Transport Assessment, September 2019.
- Traffic Planning Consultants – Intersection Capacity addendum to ITA, 10th August 2021.
- Contaminated Land and Ecological Study addendums.
- Eclipse Architecture – Platform Master Plan, 5th August 2021.

Development and Proposed Future Development

Since the time of writing the Ultimate Development Site Suitability report in September 2019 construction of the Ngawha Innovation and Enterprise Park [NIEP / Park] has commenced and while a large volume of detail has evolved the overall proposal in nature and intent remains the similar. The following summaries the development areas, attributes, and scheme changes since the earlier reporting.

- The Te Tai Tokerau Water Trust Matawii Reservoir will be constructed within the Park boundaries. This 750,000m³ reservoir is located in the North East of the Park within an area that previously had little development, aside from the potable water reservoir for the Innovation & Enterprise Precinct (Finger 2) and the Parks effluent disposal field. Inclusion of the Matawii Reservoir within the Park has had the following effects:

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- The Parks effluent disposal field has been relocated outside of the reservoir catchment. The field is now located in the forest area west of Future Development Area 21.
- The Kaikohe raw water supply constraint has been resolved, which in turn has enabled potable water for the Innovation & Enterprise Precinct to be supplied from the municipal scheme.
- A construction haul road from Wallis Road to the reservoir site has been built, which following construction will be reconditioned to serve as an internal road link between Horticulture (Finger 1) and Innovation & Enterprise (Finger 2). This route was previously identified as pedestrian only at the suitability reporting stage.
- The proposed firefighting water supply source within Innovation & Enterprise Precinct has been substituted with supply now from the Matawii reservoir.
- Wet industry (Culinary Oil) and horticultural irrigation scheme developments have been enabled within the Park.
- The Horticulture Precinct (western Finger 1) has been altered from a large 9ha glasshouse to now comprise of a berry fruit growing operation and an avocado culinary oil extraction plant.
 - The berry fruit growing operation comprises 16ha of polytunnels. The stormwater mitigation approach applied to the glasshouse proposal involved shifting catchment boundaries with the majority of discharge directed north to a 68,000m³ reservoir with stormwater discharge to the south mitigated through a reduction in that catchment area. The stormwater management approach for the berry fruit operation achieves the mitigation objectives described in the suitability report though now involves maintenance of the existing catchment boundaries with tunnel runoff from 12ha of tunnels discharging south to a reservoir comprising 13,000m³ storage for irrigation supply and a further 16,500m³ reserved in live storage for stormwater mitigation. Stormwater from the northern 4ha is discharged to a constructed wetland. Irrigation water for the berry farm is supplemented by the Matawii Reservoir.
 - Culinary oil extract avocado oil and process the waste streams of pulp, process water, skin and seeds through a biogas plant which produces biomethane, liquid fertiliser and soil conditioner (solid fraction) as output products. Also input into the biogas plant is a manure slurry reticulated from a dairy farm neighbouring the Parks eastern boundary. Process water is sourced from the Matawii reservoir and treated by private scheme at Culinary Oil. Liquid fertiliser is reticulated to the neighbouring berry fruit operation and incorporated with the berry irrigation water. Stormwater discharge is mitigated within a constructed wetland.
 - As with the prior glasshouse proposal, potable water and fire fighting supply is by individual private scheme.
 - Access from Wallis Road into the Horticulture Precinct is limited by controlled access to heavy goods vehicles only. Light vehicles, including all staff, access Horticulture via the Innovation & Enterprise Precinct.

Agreements are in place with WK NZTA around the operation, monitoring and triggering levels that would require upgrade of the Wallis Road intersection.

- The Innovation & Enterprise Precinct (central Finger 2) is largely unchanged in scale and activity from that described in the suitability report. Named occupants have changed and an additional two platforms have been added in the north. The link road connecting Finger 1 and Finger 2, along with provision for connection from Finger 2 and Finger 3 have also been added to the scheme. Potable water supply is by connection to the Kaikohe municipal scheme. Firefighting water supply to FW6 is by hydrants located on a branch of the Matawii Reservoir pipeline with a dedicated fire pump located at the northern extent of I&E within the Matawii water scheme pump facility. Stormwater mitigation is as described in the suitability report, with an additional constructed wetland located at the northern extent of I&E providing stormwater treatment for the two additional platforms.
- The eastern Finger 3 previously indicated only minor development comprising of a Training Hub with Support Accommodation. Over the intervening period Finger 3 has increased in area through the addition of neighbouring land parcels, and the Training and Support Accommodation has been amalgamated to other locations within the Park. It is now proposed to develop Finger 3 into a second Horticulture Precinct comprising of 12ha in polytunnels, 3ha outdoor growing, along with the auxiliary buildings and facilities similar to those located at the berry farm operation within Finger 1.
 - Finger 3 contains a large area of existing wetlands, which with the introduction of the NPS Freshwater 2020 and NES Freshwater 2020, impose significant development constraints. A further constraint present on Finger 3 is the natural topography which ranges up to 40m elevation difference across this portion of the Park. The application of these constraints has resulted in a relatively sparse development scheme (in relation to Finger 1). While this does have a negative impact on the developable yield it has resulted in a practical scheme from a land development and consenting prospective. The most challenging aspects of the new regulations for land development relate to the wetland hydrology provisions, in particular the capture of roof water. Due to this it is likely the irrigation requirements on Finger 3 would be met by the Matawii Reservoir scheme. In addition to the Matawii scheme a surface water take location complying with the wetland offset requirement is present within Finger 3. A surface water take would be limited to periods of above medium flow, along with the other requirements of the Regional Plan, and as a result would require offline storage to provide continuity of supply. The area required for an offline pond is available within Finger 3 were that approach pursued.
 - Potable water and firefighting will be by private individual scheme. Several development platforms identified are located beyond the wetland setback distances and will allow for roof water collection and stormwater diversions from those locations.

- Wastewater will be individual private primary treatment discharged by low pressure effluent rising main to the central NIEP secondary treated wastewater treatment plant, with disposal to the NIEP effluent disposal field.
- Access to Finger 3 is via the I&E (Finger 2) State Highway 12 entrance. Internal roads follow the existing farm races, particularly where these cross through wetland areas.
- Stormwater mitigation will achieve the objectives discussed within the suitability reporting, with implementation likely utilising similar approaches and practices of water sensitive low impact design that have been employed elsewhere within the Park.
- Other future development areas, being Master Plan areas 1 – 7 and 19, have been identified across the remainder of the Park. These areas are flat to moderate grade up to 1:10, are elevated from flooding and are accessible. The development approach for stormwater, water, wastewater and access will be similar to Finger 1 and 3.

Geotechnical and Hazard

Geotechnical findings and site hazards are unchanged from the earlier site suitability reporting with significant site investigation and land development having been undertaken in Finger 1 and 2 during the intervening period. Mechanical properties of the soil have been variable and have required attention to detail during construction to achieve the sought performance, which has been achieved. Finger 3 and the other future development areas have no observed geotechnical hazard and are expected to be equally developable. All sites are located outside of flood prone land. Pockets of contaminated land caused by historic albeit commonly practiced farm activities, in particular farm tips, are present. The identification, reporting, remediation, and monitoring of these areas is overseen by suitably qualified and independent specialists and are discussed further in their respective technical reports.

Environmental

Environmental management, erosion and sediment control, and stormwater management are unchanged from the objectives and approach described in the suitability report.

Utilities and Servicing

Utilities and servicing capacities are unchanged from the suitability report with exception of water supply whose constraints have been resolved with construction of the Matawii Reservoir.

- Electrical supply to the Park is unconstrained to 2MW, requires minor network upgrades up to 4MW, and in excess of 4MW would require a substation to be located within the Park. It is likely that the ultimate demand will remain below the 4MW threshold unless a large demand user establishes within the Park.

- Fibre optic telecommunication capacity from Kaikohe to the Park has been increased during the initial development stages with capacity added for the ultimate development demand.
- Irrigation and process water supply is by in large from the Matawii water scheme. Potable supply to Innovation & Enterprise is from the municipal network. Potable supply elsewhere within the Park is by individual private scheme, principally through roof rainwater collection.
- Firefighting by reticulated supply to hydrants is available for Innovation & Enterprise. Elsewhere within the Park firefighting supply is by individual private scheme.
- A decentralised wastewater scheme is adopted across the Park with individual private primary treated effluent discharged to the NIEP low pressure effluent sewer backbone reticulating to the NIEP secondary treated packed bed reactor wastewater treatment plant, with dose loaded disposal to the NIEP pressure compensating dripper irrigation field. The wastewater treatment plant is under maintenance contract and has remote telemetry monitoring. Both the WWTP and disposal field suit modular expansion and are unconstrained to meet the requirements of the Park's ultimate development.

Activity and Occupancy

Activity types are largely unchanged from the earlier reporting with the exception of wet industries. Previously raw water supply precluded large scale activities of this nature however the Matawii reservoir has resolved that constraint. Disposal of wastewater from wet industries to land remains constrained due to the volumes potentially involved. However as demonstrated by Culinary Oil novel disposal opportunities aside from disposal to land already exists within the Park.

Ultimate development occupancy figures have expanded from the earlier suitability reporting through the inclusion Finger 3 and other developable areas within the Park. Peak occupancy figures within Horticulture have expanded from the glass house operation of 110 FTE to peak season occupancy of 180 FTE at Berries and 36 FTE at Culinary Oil. Occupancy at Innovation & Enterprise is unchanged at 600. Extrapolation from the Berries peak occupancy would indicate peak occupancy at Finger 3 of 135 FTE. Extrapolating from the known occupancy across the range of potential activities to the other developable areas indicates an occupancy of 275 FTE. The resulting ultimate development occupancy across the Park is in the order of 1340 FTE.

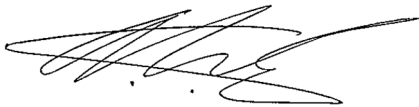
Access Summary

Access is addressed by specialist traffic reporting. In summary the primary access into the Park is via the I&E intersection with State Highway 12, along with a minor volume of truck movements from Wallis Road. Agreements are in place with WK NZTA regarding the triggering point for the Wallis Road upgrade, which would occur when either the existing Wallis Road capacity or the I&E intersection capacity were exceeded. The peak hour threshold

for the I&E intersection to SH12 and an unimproved Wallis Road intersection receiving off peak truck movements only for the Park has a threshold of 1379 FTE. For the I&E intersection and upgraded Wallis Road intersection the peak capacity threshold is 1599 FTE across the Park.

Summary

The proposed Master Plan is developable and feasible engineering solutions are available to meet land development and resource consenting requirements. The ultimate development is primarily constrained by the availability of developable land with existing access provisions and agreements in excess of the likely FTE maximum. Similarly key infrastructure is modularly expanding, and a range of options are available to continue to meet the Park's needs through to its ultimate development.



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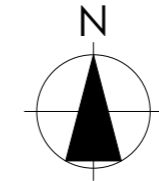
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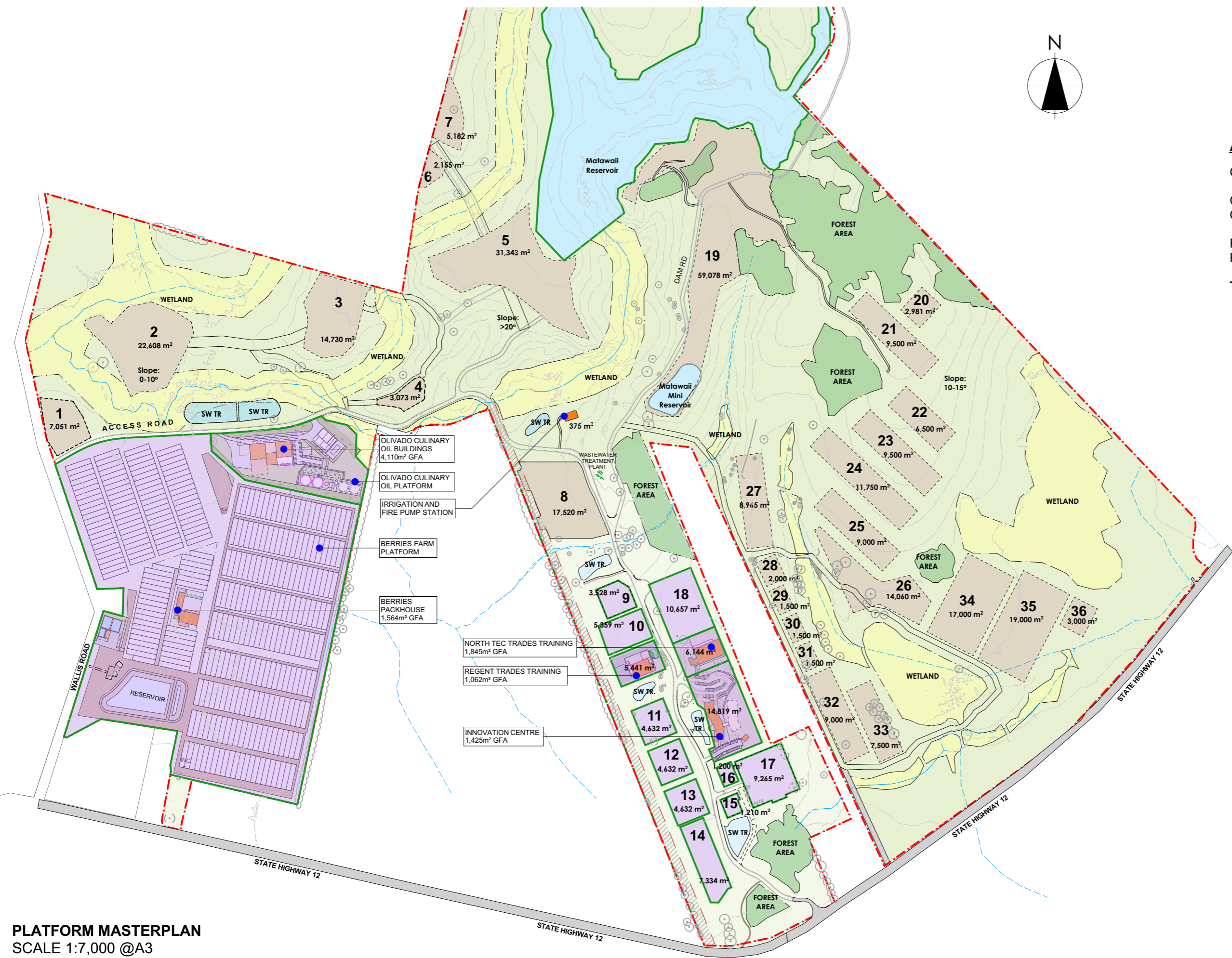


AREA SCHEDULE

Consented Platform Area	394,615m ²
Consented Building Area	10,006m ²
Consented Tunnel Area	163,847m ²
Future Development Platform Area	296,996m ²
Total Site Area:	2,605,190m²

KEY

- Consented Platform Area
- Carpark / Yard / Road
- Future Development Area Platform
- Outdoor Crop Zone >10degrees
- Native Species
- Existing Wetland Zone
- Dam / Reservoir / Stream / SW



PLATFORM MASTERPLAN
SCALE 1:7,000 @A3



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rev	date	details

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job title
INNOVATION HUB
NGAWHA INNOVATION & ENTERPRISE PARK
State Highway 12, Kaikohe

dwg title
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BULK & LOCATION
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