

I618. Whenuapai Business Park Precinct

I618.1. Precinct Description

The purpose of the Whenuapai Business Park Precinct is to enable the transition of land within the Precinct from semi-rural land uses to a light industrial business area, in an integrated and comprehensive manner to support business and employment growth in the area. The Precinct will facilitate the establishment of significant infrastructure that will support its development and ensure it is integrated into, and enables, future urban development of the wider area. Infrastructure upgrades include new internal roading connections, new and upgraded intersections and an upgrade to Brigham Creek Road and Trig Road. Walking and cycling connections are provided within the Precinct.

Land within the Precinct is identified as Business – Light Industry Zone. This zone is generally consistent with, and implements, the vision encapsulated within the Whenuapai Structure Plan 2016.

Development of the Precinct is guided by the Whenuapai Business Park Precinct Plans 1 to 9.

Stormwater management within the Precinct is guided by the Stormwater Management Plan. As part of the integrated stormwater approach, stormwater treatment requirements and the Stormwater Management Area Control – Flow 1 have been applied to the Precinct.

The Royal New Zealand Air Force (RNZAF) Base Auckland is located to the north of the Whenuapai Business Park Precinct and the approach path infrastructure traverses the western portion of the Precinct. RNZAF Base Auckland is a strategic defence facility of national and regional importance. The presence of RNZAF Base Auckland contributes to the Precinct's existing environment and character. The Precinct acknowledges the significance and presence of RNZAF Base Auckland by ensuring that all subdivision, use and development within the Precinct will occur in a manner that does not adversely affect the ongoing operations of RNZAF Base Auckland. This approach is consistent with Regional Policy Statement provisions that recognise the functional and operational needs of infrastructure (including RNZAF Base Auckland) and seek to protect it from reverse sensitivity effects caused by incompatible subdivision, use and development.

Some of the aircraft that operate from RNZAF Base Auckland are maintained on-site. Engine testing is an essential part of aircraft maintenance. Testing is normally undertaken between 7.00am and 10.00pm but, in circumstances where an aircraft must be prepared on an urgent basis, it can be conducted at any time and for extended periods. The Whenuapai Business Park Precinct Plan 1 includes noise contour boundaries for aircraft engine testing noise. Related provisions impose restrictions on activities in the Precinct that are sensitive to aircraft noise, to manage the potential for reverse sensitivity effects on the operations of RNZAF Base Auckland.

The Precinct is situated within an area broadly identified as the North-West Wildlink, the aims of which are to create safe, connected and healthy habitats for native wildlife to safely travel and breed in between the Waitākere Ranges and the Hauraki Gulf Islands. The Precinct recognises that this area of Whenuapai is a stepping stone in this link for

native wildlife and seeks to enhance these connections through riparian planting and restoration of degraded habitats, including the provision of habitats for less mobile or flightless species.

The Precinct recognises and provides for the vision of Auckland's Urban Ngahere (Forest) Strategy to increase the canopy cover in the Auckland region, by providing opportunities for riparian planting, wetland restoration and additional open space buffer and front boundary planting to contribute to increasing the canopy cover in the area.

All relevant overlays, Auckland-wide and zone provisions apply in this Precinct unless otherwise specified below.

I618.2. Objectives [dp]

General

- (1) Whenuapai Business Park Precinct is developed in a staged, comprehensive and integrated manner to facilitate the development of a business area for predominantly light industrial land use activities.

Transport Infrastructure

- (2) Transport infrastructure that is required to service subdivision and development within the Precinct:
 - (a) provides for freight;
 - (b) provides safe and efficient walking and cycling connections;
 - (c) provides for bus access and bus stops to support future improvements to public transport connectivity;
 - (d) mitigates traffic impacts on the surrounding road network;
 - (e) provides connectivity to facilitate future subdivision and development of adjacent sites; and
 - (f) is staged and co-ordinated with subdivision and development.
- (3) Roading connections, new or upgraded intersections and the upgrading of Bringham Creek and Trig Road are provided to support subdivision and development within the Precinct.

Ecology

- (4) Ecological values, including the health and well-being of streams and wetlands within the Precinct, are enhanced.
- (5) Riparian, open space buffer, front yard and boundary planting contributes to increasing the canopy cover and indigenous biodiversity within the Precinct.

Three Waters Infrastructure

- (6) All necessary three waters infrastructure (being water supply, wastewater and stormwater infrastructure) is in place to service development within the Precinct and is staged and coordinated with subdivision and development.

- (7) Stormwater quality and quantity is managed to maintain the health, well-being and preserve the mauri of the receiving environment, and minimise flood risk.
- (8) Stormwater devices should be designed to avoid the attraction of birds that could become a hazard to aircraft operations at RNZAF Base Auckland.

Effects on RNZAF Base Auckland

- (9) The effects of subdivision, use and development on the operation and activities of RNZAF Base Auckland are avoided as far as practicable, or otherwise remedied or mitigated.

I618.3. Policies [dp]

General

- (1) Develop Whenuapai Business Park Precinct in accordance with the zoning and all Precinct Plans.
- (2) Ensure that where a stage identified on Precinct Plan 2: (Infrastructure Staging) is subdivided or developed, the associated upgrading or establishment of transport and three waters infrastructure is undertaken and completed at the same time.
- (3) Stages may be developed in any order, or more than one stage can be developed at one time.

Transport

- (4) Require the development of a transport network that implements the elements and connections identified in Precinct Plans 1 and 2 and is in accordance with I618.11.1 Table 1: Road Function and Required Design Elements and I618.11.2 Table 2: Intersection Type and Design.
- (5) Subdivision and development within each identified stage does not occur in advance of the availability of transport infrastructure to support that stage, as identified on the Precinct Plan 2: (Infrastructure Staging).

Ecology

- (6) Provide for the health and well-being of indigenous biodiversity, streams and wetlands within the Precinct through riparian planting and restoration of degraded habitats.

Three Waters Infrastructure

- (7) Require subdivision and development to be in accordance with the approved Stormwater Management Plan to effectively manage stormwater runoff and to provide for water sensitive design.
- (8) Ensure that stormwater in the Precinct is managed and treated, to ensure the health and ecological value of streams are maintained and enhanced, for all subdivision and development.
- (9) Ensure that stormwater is managed to minimise flood risk, within the Precinct and in the downstream catchment.

- (10) Require the stormwater management outcomes and devices for the site to be planned, designed and implemented to avoid attracting birds and therefore mitigate the potential for bird strike to impact safety and flight operations at RNZAF Base Auckland.
- (11) Ensure that sufficient capacity in the water and wastewater network is provided to enable the servicing of new subdivision and development.
- (12) Ensure subdivision and development is aligned with the timing of the provision of wastewater infrastructure.

Effects on RNZAF Base Auckland

- (13) Require subdivision, use and development within the Precinct to avoid, remedy or mitigate any adverse effects, including reverse sensitivity effects, and safety risks relating to bird strike, lighting, glare and reflection, on the operation and activities of RNZAF Base Auckland.
- (14) Avoid establishing activities sensitive to noise within the area between the 55 dB Ldn and 65 dB Ldn aircraft engine testing noise boundaries as shown on Precinct Plan 1, unless the noise effects can be adequately avoided, remedied or mitigated at the receiving site through acoustic treatment of buildings, including mechanical ventilation.

I618.4. Activity table [dp]

All relevant overlay, Auckland-wide and zone activity tables apply unless the activity is listed in Activity Table I618.4.1 below.

Activity Table I618.4.1 specifies the activity status of district land use / subdivision in the Whenuapai Business Park Precinct pursuant to sections 9 and 11 of the Resource Management Act 1991.

A blank in the activity status column means that the activity status in the relevant overlay, Auckland-wide or zone provision applies.

In addition to the provisions of the Precinct, reference should also be had to the planning maps (GIS Viewer) which show the extent of all designations, overlays and controls applying to land within the Whenuapai Business Park Precinct.

Development in the Precinct is subject to:

- Designation 4310: Whenuapai Airbase; and
- Designation 4311: Whenuapai Airfield Approach and Departure Path Protection.

This Precinct introduces additional 55 dB Ldn and 65 dB Ldn noise contour boundaries for aircraft engine testing noise and restrictions for activities sensitive to noise within this area.

Table I618.4.1 Activity table

Activity		Activity Status
Use and Development		
(A1)	Activities listed as permitted, restricted discretionary or discretionary activities in Table H17.4.1 Activity Table in the Business - Light Industry Zone.	
(A2)	Use and development that does not comply with Standard I618.6.1 and/or I618.6.4.	NC
(A3)	New activities sensitive to noise and alterations and additions to existing buildings accommodating activities sensitive to noise within the aircraft engine testing noise boundaries.	D
(A4)	Activities that do not comply with Standard I618.6.11 Development within the aircraft engine testing noise boundaries.	NC
(A5)	Use and development that does not comply with Standards I618.6.2, I618.6.3, I618.6.5 – I618.6.10.	RD
Subdivision		
(A6)	Subdivision listed in Chapter E38 Subdivision.	
(A7)	Subdivision that does not comply with Standard I618.6.1.	NC
(A8)	Subdivision that does not comply with Standard I618.6.7, I618.6.9, I618.6.10.	RD

I618.5. Notification

- (1) Any application for resource consent for an activity listed in Activity Table I618.4.1 above will be subject to the normal tests for notification under the relevant sections of the Resource Management Act 1991.
- (2) When deciding who is an affected person in relation to any activity for the purpose of section 95E of the Resource Management Act 1991 the Council will give specific consideration to those persons listed in Rule C1.13(4).

I618.6. Standards

All relevant overlay, Auckland-wide and zone standards apply to the activities listed in Activity Table I618.4.1 unless otherwise specified below.

If there is a conflict or difference between the Precinct standards and the Auckland-wide and zone standards, the standards in this Precinct will apply.

All activities listed in Activity Table I618.4.1 must comply with the following standards.

I618.6.1 Transport Infrastructure Upgrades

Purpose:

- to mitigate the adverse effects of traffic generation on the surrounding road network; and
 - to achieve the integration of land use and transport.
- (1) Prior to the occupation of any buildings within a particular stage, the transport infrastructure shown on Precinct Plan 2: (Infrastructure Staging) must have been constructed for that stage. New and upgraded roads and intersections must be constructed in accordance with I618.11.1 Table 1: Road Function and Required Design Elements and I618.11.2 Table 2: Intersection Type and Design.
- (2) Subdivision
- (a) Must be designed to ensure the protection of the future road corridors, intersections and connections shown on Precinct Plans 1 and 2.
 - (b) Prior to the Council issuing a certificate under section 224(c) of the Resource Management Act 1991 for subdivision within a particular stage, the transport infrastructure shown on Precinct Plan 2: (Infrastructure Staging) must have been constructed for that stage.
 - (c) New and upgraded roads and intersections must be constructed in accordance with I618.11.1 Table 1: Road Function and Required Design Elements and I618.11.2 Table 2: Intersection Type and Design.

I618.6.2 Trip Generation

Purpose:

- to mitigate the adverse effects of traffic generation on the surrounding road network.
- (1) The cumulative extent of buildings within the Precinct shall not exceed 115,000m² GFA unless a traffic monitoring report prepared by a suitably qualified expert has demonstrated that peak hour trip generation from all existing or consented development in the Precinct does not exceed 725 vehicles per hour.

I618.6.3 Stormwater Management

Purpose:

- to ensure that stormwater in the Precinct is managed and treated, to ensure the health and ecological values of the streams are maintained; and
 - to ensure appropriate stormwater management infrastructure/devices are in place.
- (1) Stormwater quality

- (a) All subdivision and land use development shall be managed in accordance with a stormwater Discharge Consent or an approved Stormwater Management Plan.
 - (b) New buildings, and additions to buildings, must be constructed using cladding, roofing and spouting building materials that avoid the use of high contaminant yielding building products which have:
 - (i) exposed surface(s) or surface coating of metallic zinc of any alloy containing greater than 10% zinc; or
 - (ii) exposed surface(s) or surface coating of metallic copper or any alloy containing greater than 10% copper; or
 - (iii) exposed treated timber surface(s) or any roof material with a copper containing or zinc-containing algaecide.
 - (c) Stormwater runoff from all impervious areas that is not re-used for internal non-potable uses must be treated with a stormwater management device(s) meeting the following standards:
 - (i) the device or system must be sized and designed in accordance with 'Guidance Document 2017/001 Stormwater Management Devices in the Auckland Region (GD01)'; or
 - (ii) where alternative devices are proposed, the device must demonstrate it is designed to achieve an equivalent level of contaminant or sediment removal performance to that of 'Guidance Document 2017/001 Stormwater Management Devices in the Auckland Region (GD01)'.
 - (d) In the event that dry detention basins or stormwater ponds are proposed, these shall be designed by a suitably qualified and experienced person to:
 - (i) Minimise bird settling or roosting (including planting with species unlikely to be attractive to large and/or flocking bird species); and
 - (ii) Fully drain down within 48 hours of a 2 percent Annual Exceedance Probability (AEP) storm event; and
 - (iii) Have side slopes at least as steep as 1 vertical to 4 horizontal (1:4) except for:
 - Any side slope treated with rock armouring; or
 - Any area required for vehicle access, provided that such vehicle access has a gradient of at least 1 vertical to 8 horizontal (1:8).
- (2) Stormwater quantity
- (a) Prior to the occupation of any buildings within a particular stage, downstream stormwater effects arising from that stage must be appropriately mitigated or managed in accordance with an approved Stormwater Management Plan.

I618.6.4 Wastewater and Water Supply Infrastructure

Purpose:

- to ensure that bulk water supply and wastewater infrastructure with sufficient capacity is available to support development within the Precinct.
- (1) The completion of any new buildings within the Precinct can only proceed following the completion and commissioning of the wastewater and water supply infrastructure as is required within its catchment.
- (2) Standard I618.6.4(1) will be considered to be complied with if the identified upgrades are constructed and operational:
 - (a) Prior to the issue of a code compliance certificate under section 95 or a certificate of public use under section 363A of the Building Act 2004 for any new occupiable building(s) requiring service connection(s).

I618.6.5 Bird strike

- (1) If roof gradients are less than 15 degrees, measures to discourage bird roosting on the roof of the structure are required where building design may be conducive to potential bird roosting.
- (2) Any measures to discourage bird roosting on the roof of the structure shall be maintained thereafter to the satisfaction of Auckland Council in consultation with NZDF.

I618.6.6 Yards

Purpose:

- provide a buffer and screening between industrial activities and neighbouring sites, to mitigate adverse visual and nuisance effects; and
- increase canopy cover and linkages between green spaces.
- (1) A building or parts of a building must be set back from the relevant boundary by the minimum depth listed in Table I618.6.6.1:

Table I618.6.6.1

Yard	Minimum Depth
Front	3.7m where the front yard faces an internal road identified on Precinct Plans 1 and 2.
Side	5m where an open space buffer is identified on Precinct Plan 1.
Rear	5m where an open space buffer is identified on Precinct Plan 1.

- (2) Front yards (excluding access points or the location of infrastructure) must be planted with a mixture of native trees, shrubs or ground cover plants (including grass) within and along the full extent of the yard.

- (3) Side and rear yards must be planted with native vegetation comprising a mixture of trees, shrubs or ground cover plants (including grass) within and along the full extent of the yard to provide a densely planted visual buffer of at least 3m in depth and must be appropriately maintained thereafter.

I618.6.7 Riparian Margins

- (1) At the time of subdivision or development, land within 10m of the streams and wetlands identified on Precinct Plan 1 as 10m Riparian Margin Ecological Enhancement must be planted with native vegetation from the top of the bank of the stream or the wetland's edge.

I618.6.8 Height in Relation to Boundary

- (1) Buildings or parts of buildings must not project beyond a 35 degree recession plane measured from a point 6m vertically above ground at the site boundary where those site boundaries adjoin an open space buffer as identified on Precinct Plan 1.

I618.6.9 Lighting, glare and reflection

Purpose:

- to avoid or minimise the effects of lighting on aircraft descending to land at RNZAF Base Auckland.
- (1) Any subdivision and development must avoid effects of lighting on the safe and efficient operation of RNZAF Base Auckland, to the extent that lighting:
 - (a) Avoids simulating approach and departure path runway lighting;
 - (b) Ensures that clear visibility of approach and departure path runway lighting is maintained; and
 - (c) Avoids glare or light spill that could affect flight safety or aircraft operations.
 - (2) External building materials must be constructed with the following:
 - (a) Roof surfaces and external building surfaces (excluding vertical surfaces) greater than 10m above ground level must not exceed a reflectivity (specular reflectance) of 20% white light.
 - (3) No person may illuminate or display the following outdoor lighting between 11:00pm and 6:30am:
 - (a) Searchlights; or
 - (b) Outside illumination of any structure or feature by floodlight that shines above the horizontal plane.

I618.6.10 Noise

Purpose:

- to ensure that potential reverse sensitivity effects on the adjacent RNZAF Base Auckland are appropriately avoided, remedied or mitigated within the Precinct.

- (1) A reverse sensitivity covenant shall be included on each title issued within the precinct. This covenant shall be registered with the deposit of the survey plan, in a form acceptable to the New Zealand Defence Force, under which the registered proprietor will covenant to waive all rights of complaint, submission, appeal or objection it may have under the Resource Management Act 1991 and successive legislation or otherwise in respect of any noise effects associated with the lawful operation of RNZAF Base Auckland.

I618.6.11 Development within the aircraft engine testing noise boundaries

- (1) Between the 55 dB Ldn and 65 dB Ldn noise boundaries as shown on Precinct Plan 1, new activities sensitive to aircraft noise and alterations and additions to existing buildings accommodating activities sensitive to aircraft noise must be designed and constructed to meet the requirements of D24.6.1.

I618.7. Assessment – controlled activities

There are no controlled activities in this precinct.

I618.8. Assessment – restricted discretionary activity

I618.8.1 Matters of discretion

The Council will reserve its discretion to all of the following matters when assessing a restricted discretionary activity resource consent application, in addition to the matters specified for the relevant restricted discretionary activities in the overlay, Auckland-wide or zone provisions:

- (1) Matters for all restricted discretionary activities (including otherwise permitted activities that infringe a permitted standard):
 - (a) Whether the infrastructure required to service any subdivision or development is provided;
 - (b) The effects of the proposal on the future ability to construct the road corridors and connections shown in Precinct Plans 1 and 2;
 - (c) Whether the proposal will provide for the safe and efficient functioning of the current and future transport network;
 - (d) The requirements of the approved Stormwater Management Plan to manage stormwater and flooding effects;
 - (e) The provision of stormwater related infrastructure and devices required to manage stormwater and flooding effects;
 - (f) The effects on the health, well-being, mauri and ecology of the stream and wetland;
 - (g) Effects on the operation of RNZAF Base Auckland including reverse sensitivity effects and any measures to avoid, remedy or mitigate these effects;
 - (h) Lighting associated with development, structures, infrastructure and construction.

I618.8.2 Assessment Criteria

The Council will consider the relevant assessment criteria below for restricted discretionary activities, in addition to the assessment criteria specified for the relevant restricted discretionary activities in the overlay, Auckland-wide or zone provisions:

(1) For subdivision:

- (a) The extent to which any subdivision or development layout is consistent with and provides for the upgraded roads and new indicative roads and connections shown on Precinct Plans 1 and 2;
- (b) Whether the proposed subdivision includes the delivery of the transport infrastructure identified on Precinct Plan 2: (Infrastructure Staging) and in accordance with I618.11.1 Table 1: Road Function and Required Design Elements and I618.11.2 Table 2: Intersection Type and Design;
- (c) Whether the proposed road corridors and connections will service the Precinct in a safe and efficient manner;
- (d) Whether the proposed subdivision enables development that would require transport infrastructure upgrades to be provided;
- (e) Whether the proposed subdivision will adversely affect the safe and efficient operation of the current and future transport network;
- (f) Whether a safe and efficient road design is provided;
- (g) The extent to which any subdivision or development layout provides for the functional requirements of the existing or proposed transport network, roads and relevant transport modes;
- (h) Whether the proposal includes methods to ensure the construction of road corridors and connections, within its stage shown in Precinct Plan 2: (Infrastructure Staging); and
- (i) Whether the following required works are located, designed and undertaken in a staged manner, in accordance with the Precinct Plan 2: (Infrastructure Staging), that facilitates and avoids unnecessary rework in future upgrades to Brigham Creek Road and Trig Road to provide strategic network connections to service wider growth:
 - (i) New roundabout on Trig Road, and Trig Road upgrade;
 - (ii) Upgraded Brigham Creek Road/ Trig Road intersection - roundabout, and Brigham Creek Road upgrade;
 - (iii) New Brigham Creek Road left in, left out intersection and Brigham Creek Road upgrade; and
 - (iv) New Brigham Creek Road signalised intersection and Brigham Creek Road upgrade.

(2) For stormwater management not complying with standard I618.6.3:

- (a) Whether development and/or subdivision is in accordance with the approved Stormwater Management Plan and Policies I618.3(7)-(9));
 - (b) The design and efficacy of new and upgraded stormwater related infrastructure and devices with consideration given to the likely effectiveness, ease of access, operation and integration with the surrounding environment; and
 - (c) Whether there is sufficient infrastructure capacity to provide for flood conveyance and protect land and infrastructure.
- (3) For riparian margins not in accordance with standard I618.6.7(1), whether the health, well-being and mauri of the streams and wetlands, including the flood mitigation function of the stream and ecological outcomes achieved by the proposed riparian planting, will be equal to or better than the requirement of I618.6.7(1).
- (4) For stormwater detention/retention ponds/wetlands not complying with the standard I618.6.3, the extent to which the proposal minimises the attraction of birds that could become a hazard to aircraft operating at RNZAF Base Auckland.
- (5) The effects on the operation of the RNZAF Base Auckland, including potential reverse sensitivity effects and effects on aircraft safety, in relation to:
 - (a) Lighting, glare and reflection;
 - (b) Temporary structures and construction; and
 - (c) Noise.
- (6) For land use not complying with standard I618.6.2 Trip Generation:
 - (a) The extent to which the wider transport network can accommodate peak hour trip generation from the Precinct that exceeds 725 vehicles per hour, while maintaining reasonably efficient movement of traffic; and
 - (b) The extent to which new transport infrastructure upgrades are required to accommodate the trip generation proposed, and the likely timing for such upgrades to have been completed and operational.

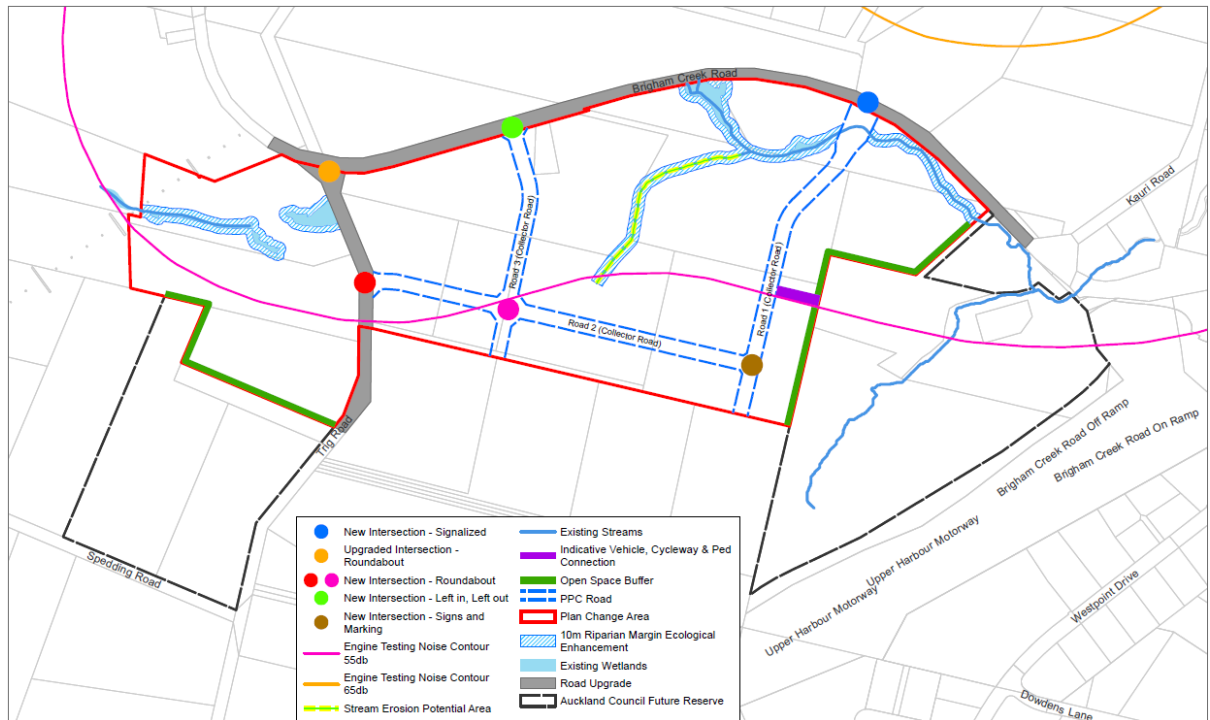
I618.9. Special information requirements

- (1) Transport Design Report:
 - (a) Any proposed new road intersection or upgrading of existing road intersections illustrated on Precinct Plans 1 and 2 must be supported by a Transport Design Report and concept plans, prepared by a suitably qualified transport engineer, confirming that the location and design of any road and its intersection(s) supports the safe and efficient function of the existing transport network and can be accommodated within the proposed or available road reserves. This may be included within a transport assessment supporting land use or subdivision consents.

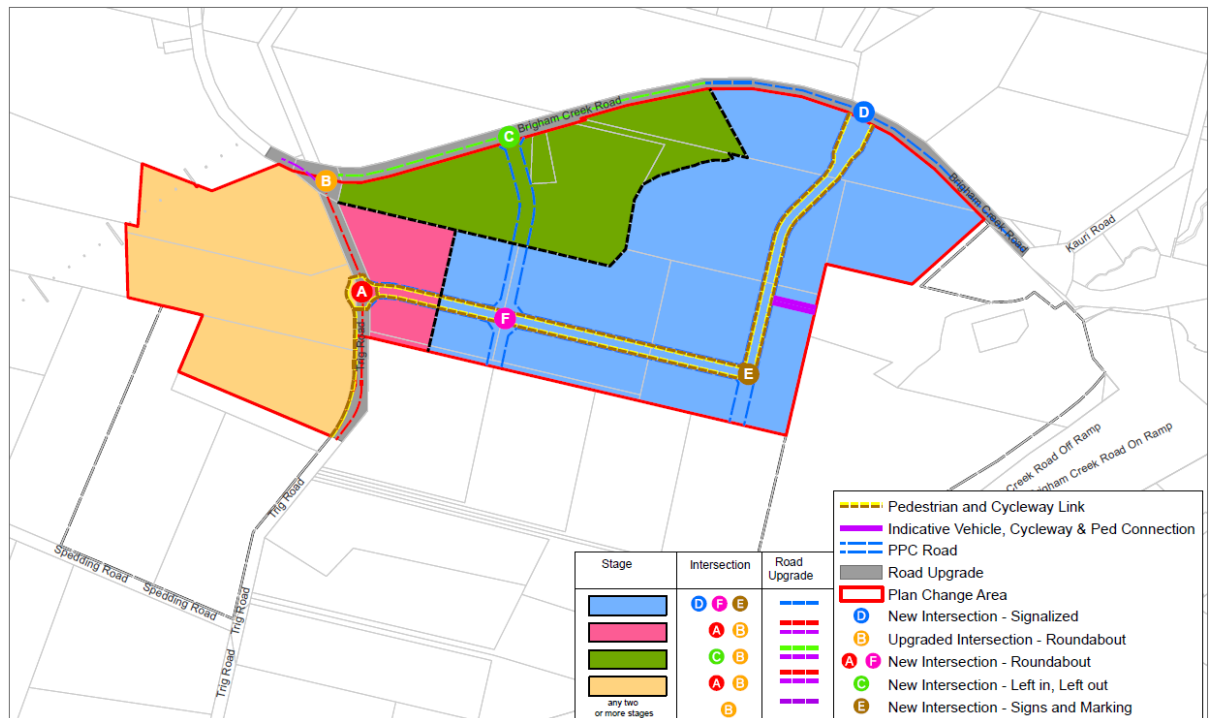
- (b) In addition to the report and plan required in (1)(a) where an interim upgrade is proposed, information detailing how the design allows (where possible) for the ultimate upgrade to be efficiently delivered must be provided.
- (2) Any application for resource consent for subdivision or development, including any vegetation alteration or removal within 20m of a natural wetland or within 10m of a stream (permanent or intermittent) shown on Precinct Plan 1 shall:
 - (a) Detail the proposed methods for managing adverse effects on protected fauna, nesting birds during bird breeding season, herpetofauna and the habitat of long-tailed bat, including addressing adverse effects from increased light and noise on bat habitat; and
 - (b) Provide a detailed restoration plan, including planting and maintenance for no less than three years, for the stream, wetland and their buffer/riparian margins. The plan shall be in accordance with best practice methodologies of TP148 and/or Auckland Unitary Plan Appendix 16, or other subsequent Council restoration guide.
- (3) Any application for buildings must assess whether standard I618.6.2 Trip Generation is complied with by including details of the existing and consented GFA for buildings within the precinct.
- (4) Any application for resource consent for subdivision or development that adjoins the 'stream erosion potential area' as identified on Precinct Plan 1 must provide a fluvial geomorphological assessment to inform the type and scale of riparian margin/instream work required to ensure the effects from the development and any structures in the stream are managed, and there is resilience to any effects of future flow and climate change; and
 - (a) The fluvial geomorphological assessment is required to include a stream health and stabilisation assessment by a suitably qualified person; and
 - (b) A stream health and stabilisation plan informed by (a) above that includes appropriate mitigation measures to progressively improve stream health over time where it is degraded or maintains high stream values where these values are present; and
 - (c) Prioritises nature-based solutions and green infrastructure; and
 - (d) Details who is responsible for implementing the recommendations of stream health and stabilisation plans, and any ongoing monitoring and maintenance requirements.

I618.10. Precinct Plans

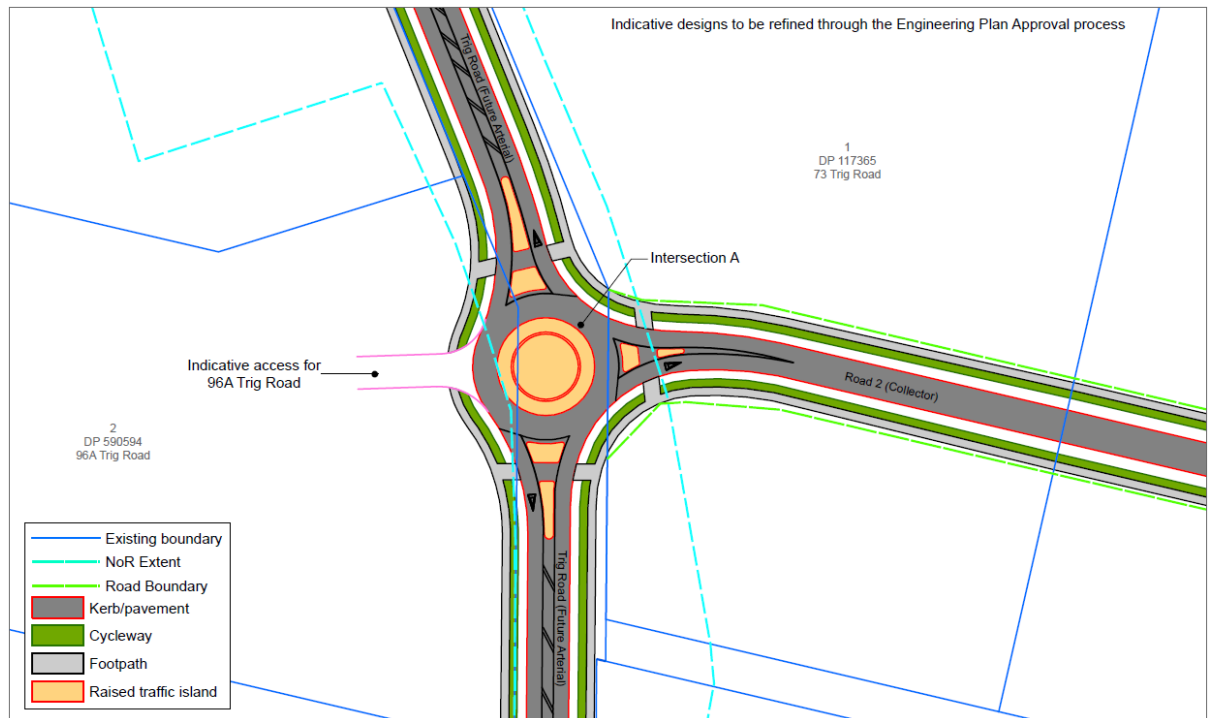
I618.10.1 Whenuapai Business Park Precinct Plan 1



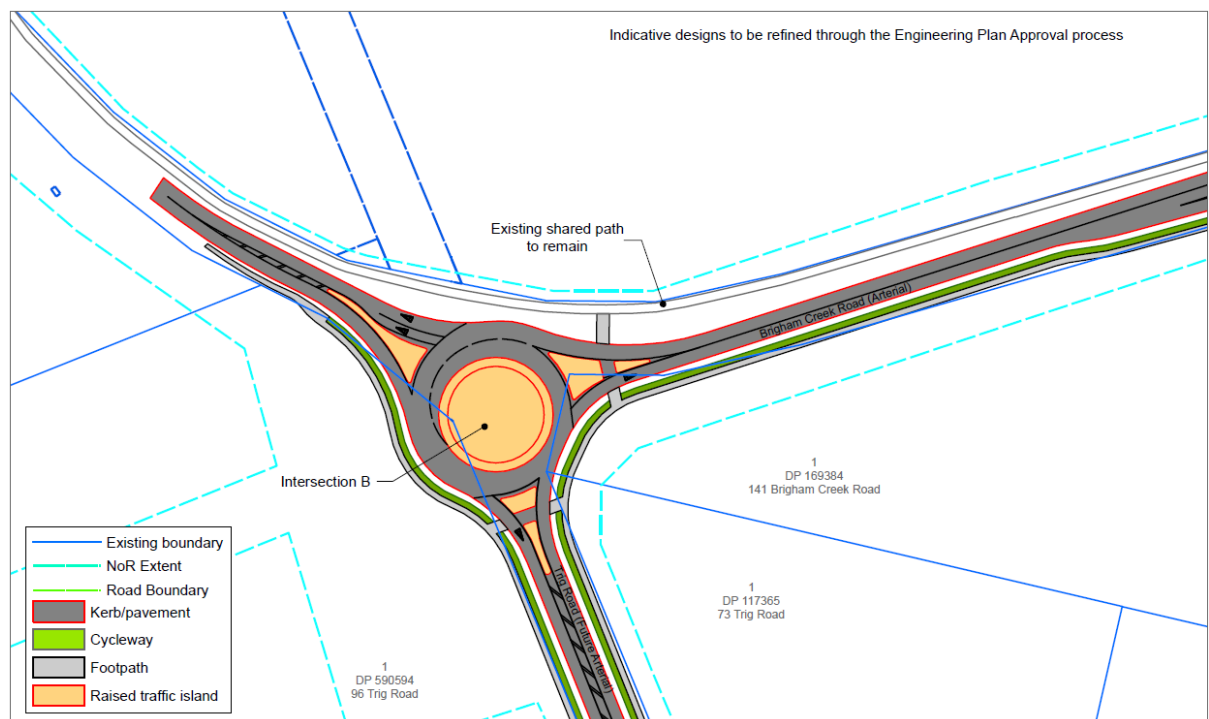
I618.10.2 Whenuapai Business Park Precinct Plan 2: Infrastructure Staging



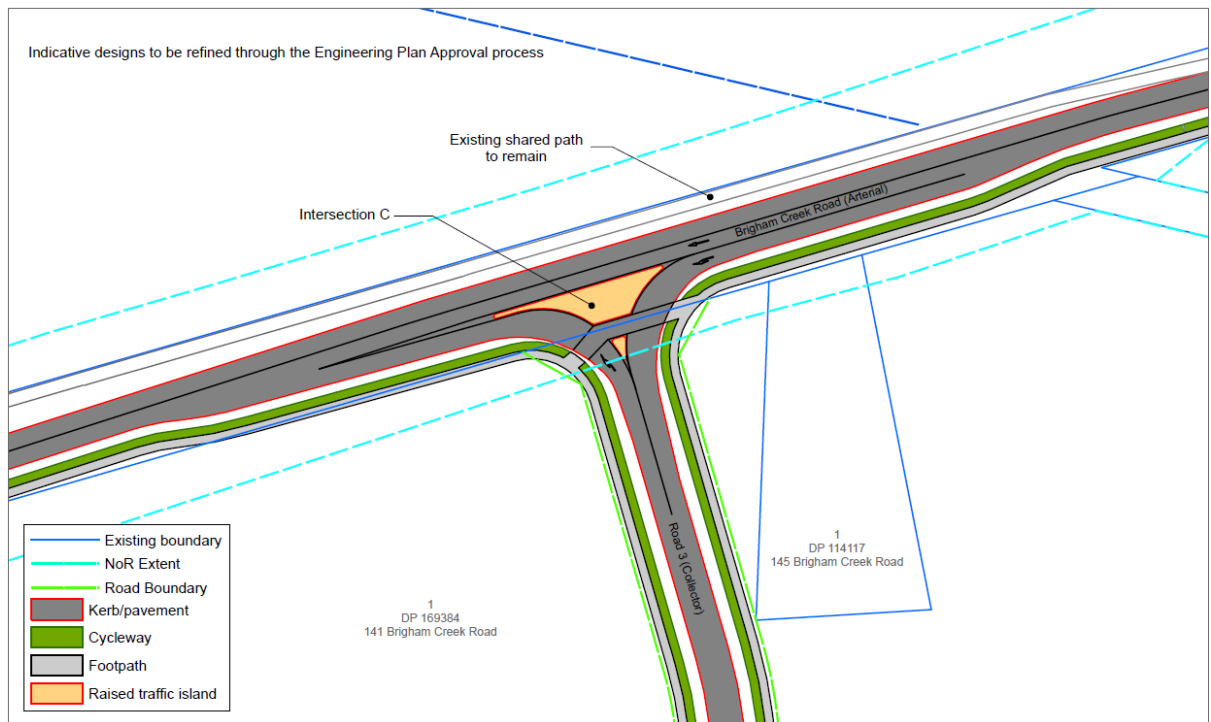
I618.10.3 Whenuapai Business Park Precinct Plan 3: Road 2 and Trig Road Intersection Concept Plan



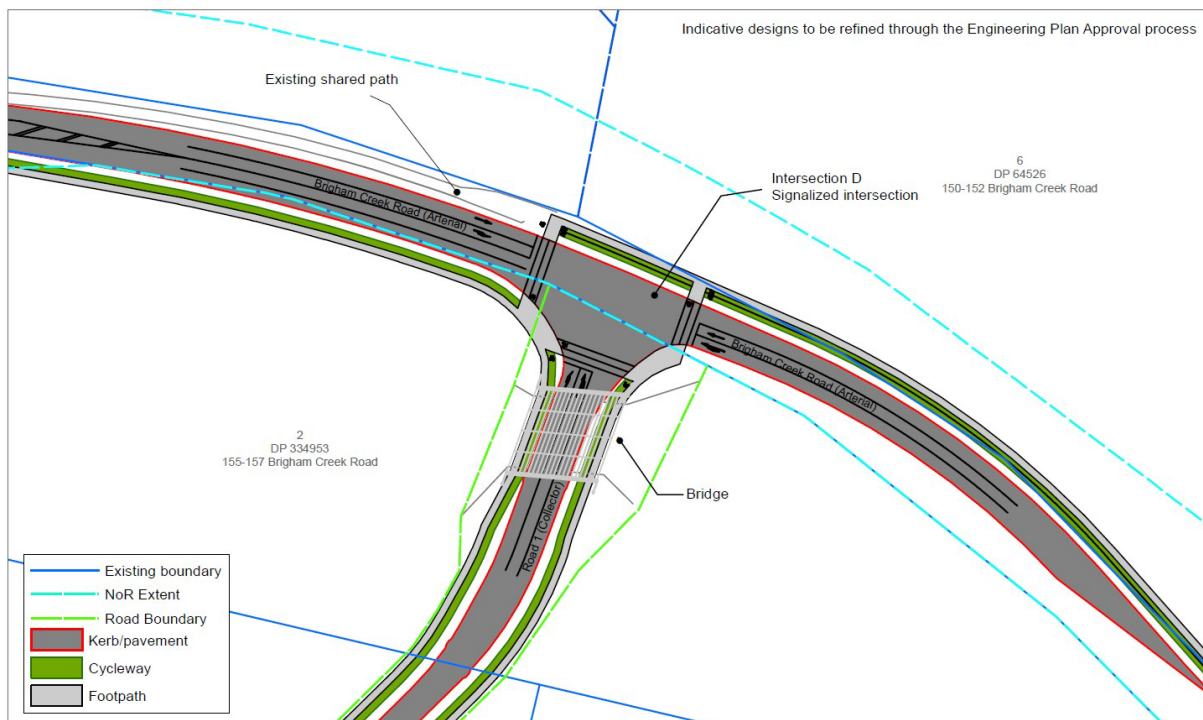
I618.10.4 Whenuapai Business Park Precinct Plan 4: Trig Road and Brigham Creek Intersection Concept Plan



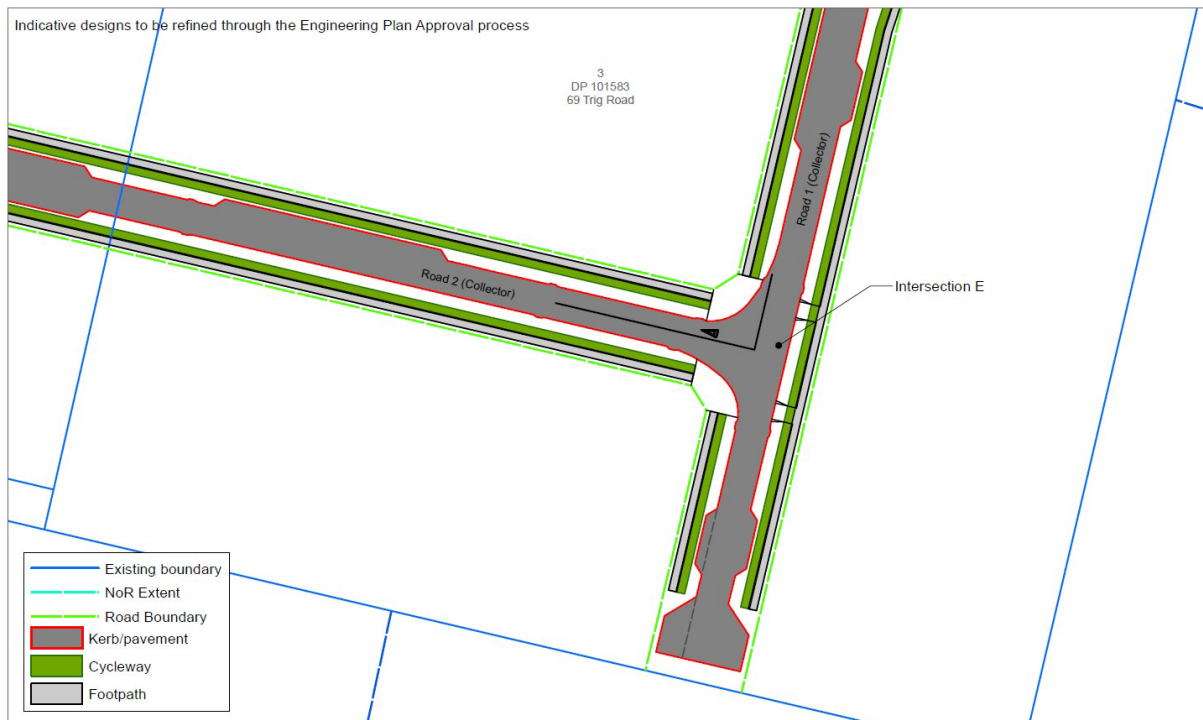
I618.10.5 Whenuapai Business Park Precinct Plan 5: Brigham Creek Road and Road 3 Intersection Concept Plan



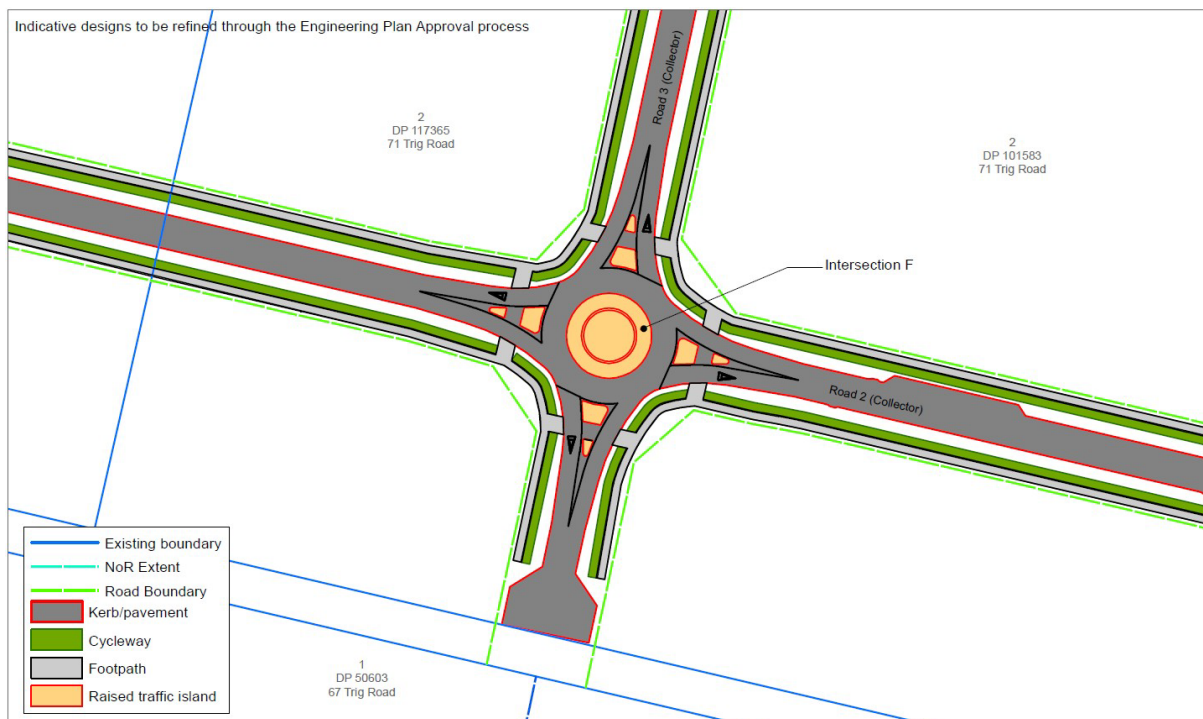
I618.10.6 Whenuapai Business Park Precinct Plan 6: Brigham Creek Road and Road 1 Intersection Concept Plan



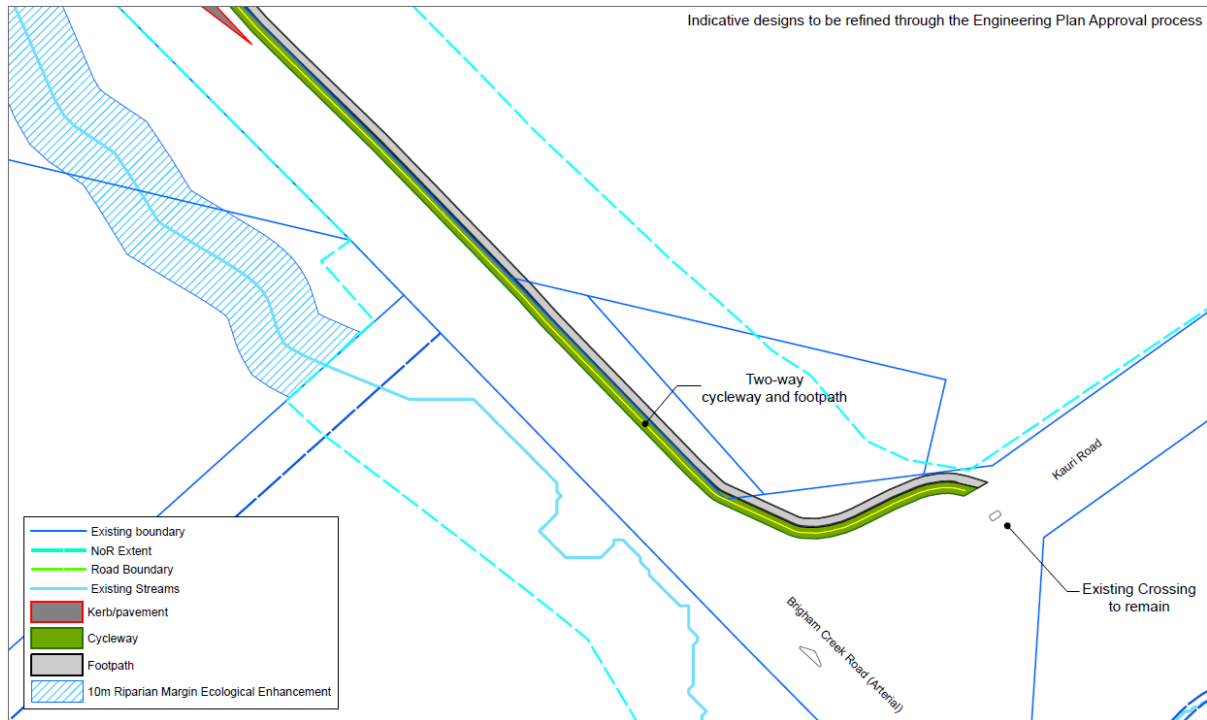
I618.10.7 Whenuapai Business Park Precinct Plan 7: Road 1 and 2 Intersection Concept Plan



I618.10.8 Whenuapai Business Park Precinct Plan 8: Road 2 and 3 Intersection Concept Plan



I618.10.9 Whenuapai Business Park Precinct Plan 9: BCR Upgrading Near Kauri Road



I618.11. Appendices**I618.11.1 Table 1: Road Function and Required Design Elements**

Road name	Role and function of road in precinct area	Minimum road reserve width¹	Total number of lanes	Design speed	Median²	Cycle Provision	Pedestrian Provision	Freight or heavy vehicle route	Access restriction	Bus provision³
Brigham Creek Road upgrade (Between Kauri Road and Intersection D)*	Arterial	Various	2	60km/hr	No	Yes-one side ⁴	Yes one side ⁵	Yes	Yes	Yes
Brigham Creek Road upgrade (West of Intersection D)*	Arterial	Various	2	60km/hr	No	Yes-two sides ⁶	Yes-two sides ⁶	Yes	Yes	Yes
Trig Road	Future Arterial	24m	2	60km/hr	Yes	Yes-two sides	Yes-two sides	Yes	No	Yes
Roads 1, 2, 3 (Precinct Plan 1)	Collector	24m	2	50km/hr	No	Yes-two sides	Yes-two sides	Yes	No	Yes

I618.11.2 Table 2: Intersection Type and Design

Intersection Reference (refer Precinct Plan 2 Infrastructure Staging)	Intersection Type	Designed in general accordance with:	Comments
A – Trig Road	New Intersection – Roundabout	Precinct Plan 3	Single Lane roundabout. A future fourth leg could provide access to part of the PCA west of Trig Road
B – Trig / Brigham Creek Road	Upgraded Intersection – Roundabout	Precinct Plan 4	Single lane roundabout. At consenting stage consideration to be given to the need to include the following: • an additional circulating lane on the northern side. • Two approach lanes on Brigham Creek Road, eastbound.
C – Brigham Creek Road	New Intersection – Left in, left out	Precinct Plan 5	
D – Brigham Creek Road	New Intersection - Signalized	Precinct Plan 6	

* Denotes interim upgrades to Brigham Creek Road (i.e. not the ultimate width provided for by AT's NOR W3)

¹ Typical minimum width which may be varied in specific locations where required to accommodate network utilities, batters, structures stormwater treatment, intersection design, significant constraints or other localised design requirements.

² Flush, solid or raised medians subject to Auckland Transport approval at EPA stage.

³ Carriageway lanes and geometry of intersections capable of accommodating buses. Bus stop form and locations and bus routes shall be determined with Auckland Transport at resource consent and engineering plan approval stage.

⁴ Two-way cycleway on northern side only (refer to Precinct Plan 6).

⁵ Foot path on northern side only (refer to Precinct Plan 9)

⁶ Shared path on northern side of Brigham Creek Road remains