

APPENDIX 2

WAIPA COUNCIL PLANNING REPORT

Technical Memos

Transportation and Three Waters

To: Wayne Allan **Cc:** Todd Whitaker, Richard Bax

From: Bryan Hudson

Date: 18 Oct 2018 **File Ref:** 020-08-92/2

Subject: Proposed Private Plan Change No. 11 Transportation Technical Report

EXECUTIVE SUMMARY

Proposed Private plan change No. 11 (PC11) requires two new road connections and intersections with Victoria Road at Hautapu. This report discusses the suitability of the proposed connections and new intersections. The BIL transportation structure plan provides only for the BIL development area and further development of the C10 industrial zone would require further new connections and upgrades to roads such as Swayne, Zig Zag and Victoria Roads. The BIL structure plan needs to allow for connections to and through the remainder of the C10 cell.

A southern connection is proposed by way of a right turn bay to stage 1 being the main Aluminum Products factory and campus hub. This proposed intersection is opposite the Hautapu Cemetery. As traffic volumes grow, signals would be required to control the intersection and ensure pedestrian and vehicle turn safety. The new intersection will cross and encroach on the railway corridor and designation. Kiwirail have submitted that the intersection should be considered temporary and would require its closure when the railway is reactivated in future. The proposed intersection can in my opinion be designed and constructed to provide a safe and suitable access to serve a portion of the traffic generated by the development.

A northern connection is proposed by way of roundabout(s) at the current Victoria / Hautapu Road junction. Two roundabout options have been submitted, one a 5 leg large roundabout the other a combination of two smaller roundabouts. Intersection capacity modelling by Graymatter Ltd suggests that both options can accommodate traffic demand for a combined West and East industrial development to 110ha with the southern access to BIL in place. If the southern access is closed to resume rail services then dual laning of roundabouts or other mitigations would be required to manage the increased demand.

The double roundabout option has the advantage of greater separation of access legs and better accommodation of future railway services and so in my view is a superior option for road and rail safety. It can also be built in stages to suit development. The proposed two roundabout intersection can in my opinion be designed and constructed to provide a safe and suitable access to serve traffic generated by the development. This intersection must be able to accommodate all traffic if rail services are resumed and the southern access intersection is closed. Ensuring that intersection proposals are compatible with future rail services is in my view essential and in keeping with prior agreements between Kiwirail, NZTA and Waipa District Council for other intersections along the designated rail corridor.

A peer review by Opus-WSP of the Graymatter Ltd traffic generation and roundabout capacity will be available before the hearing.

Detail designs and safety audits would be required at subdivision stages for council to accept final intersection layouts for construction. New northern and southern intersections will require staged closure of Laurent Road to all vehicle traffic. This particularly affects the Shoof site which has several access points onto Laurent Road that will need to close when the northern intersection is constructed. The Shoof site will need to have access onto the new road network provided by BIL.

The design of the southern access road must make provision for the eventual closer of the Victoria Road intersection for rail service resumption. Land vested for a cul-de-sac head turning space should be provided at the Victoria Road end.

Public shared footpaths are proposed through the property linking all Hub and employment areas and this is supported as good urban design which allows active transport modes to work. Road layouts and main destination parking areas should all be designed to accommodate bus transport/ bus stops as the Hautapu area will become a future bus service destination.

SOUTHERN CONNECTION TO VICTORIA ROAD

- Stage 1, enabling the APL development, could proceed with a right turn bay at a new southern intersection. The design would need to cater for expected stage 1 traffic volumes without impacting the Level of Service on Victoria Road and adjacent property entrances. (e.g. long queues on Victoria Road would be unacceptable).
- The southern intersection will be required to be upgraded to traffic signals, either within the timeframes of Stage 1 or Stage 2 with timing dependent on overall traffic growth, development traffic generation and safety performance. The design will need to ensure sufficient lane widths, shoulders etc., to ensure right turn queues do not hinder traffic flows on Victoria Road or regularly block adjacent vehicle entrances. It is expected that LOS will be C/D in peak hours but not LOS E/F. The intersection would encroach over and significantly along the current Kiwirail corridor to obtain the road width necessary.
- I note the Kiwirail submission states the southern intersection should be considered temporary. Reactivation of rail services would require closure of the southern intersection otherwise rail level crossings would be too closely spaced. Kiwirail's position is in keeping with Government policy and Regional spatial planning and prior agreements between Kiwirail, NZTA and Waipa District Council for intersections at the expressway, Norfolk Drive and Hamilton/Victoria.
- Laurent Road fronting the development and up to Victoria Road north must be physically closed to traffic to suit the new intersections. The Laurent Road reserve must be retained to accommodate utility services and future rail service resumption.

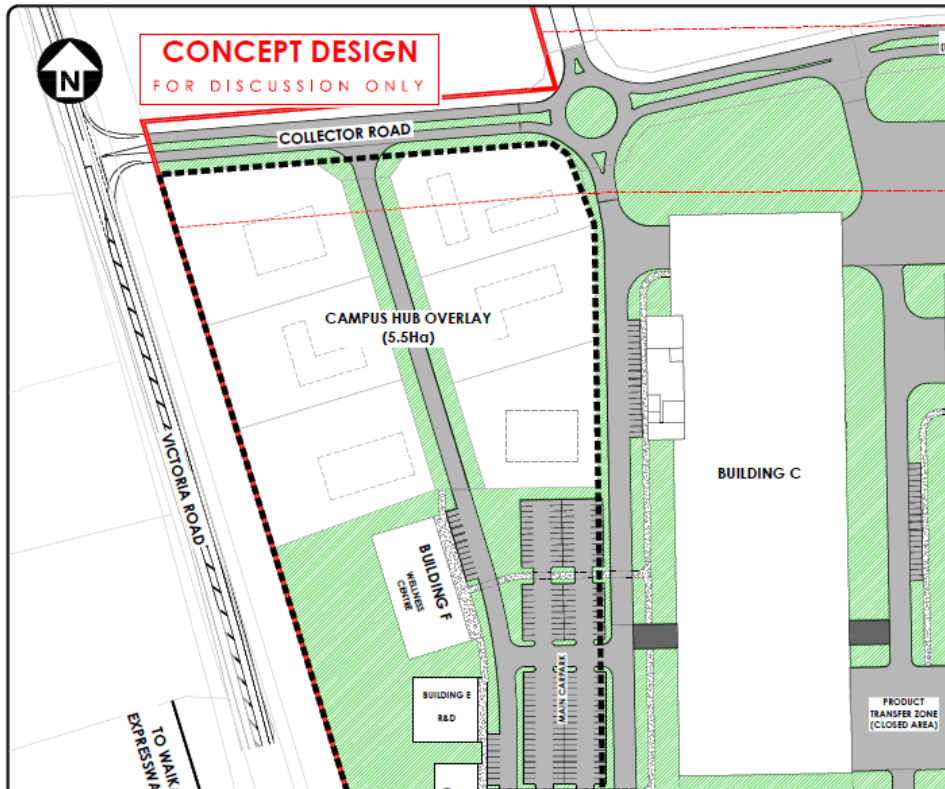


Figure 1 showing new southern intersection, (BIL Ltd APL Master Plan Layout 10 Oct 2018.)

NORTHERN CONNECTION TO VICTORIA ROAD

- BIL have offered two roundabout options for a northern connection. They are both shown in concept layout below.
- While both can accommodate the expected traffic volumes for 110ha of combined east and west industrial development the two roundabout option has benefits over a 5 leg roundabout. These include;
 - greater separation of legs of the intersection allowing more time to see and give way or accept a gap to enter the roundabout
 - provides a much better future rail crossing option on a straight section of road between roundabouts
 - can be staged to allow one roundabout to be built independently, and
 - new work is largely off line so there will be significantly less traffic disruption during the build.
- Access to the Shoof Industries site will need to be repositioned away from Laurent Road and on to the new access road into the BIL site. Laurent Road must be closed to vehicle traffic to ensure the new intersection operates safely.
- Shared walking and cycling paths will be required around the intersections to allow pedestrians to navigate to all quadrants and allow less confident cyclists to avoid the rotary areas.
- If rail services resume and the southern intersection is closed then all traffic entering the BIL site will use the northern entrance and this will cause queuing and poor levels of service

on some legs in peak hours. Mitigation could include signalisation or making the roundabouts dual lane for some movements, but this would need to be considered in context of the wider network; any other road connections that are developed into the industrial cell; and the capacity of Victoria Road south of the intersection to the expressway.

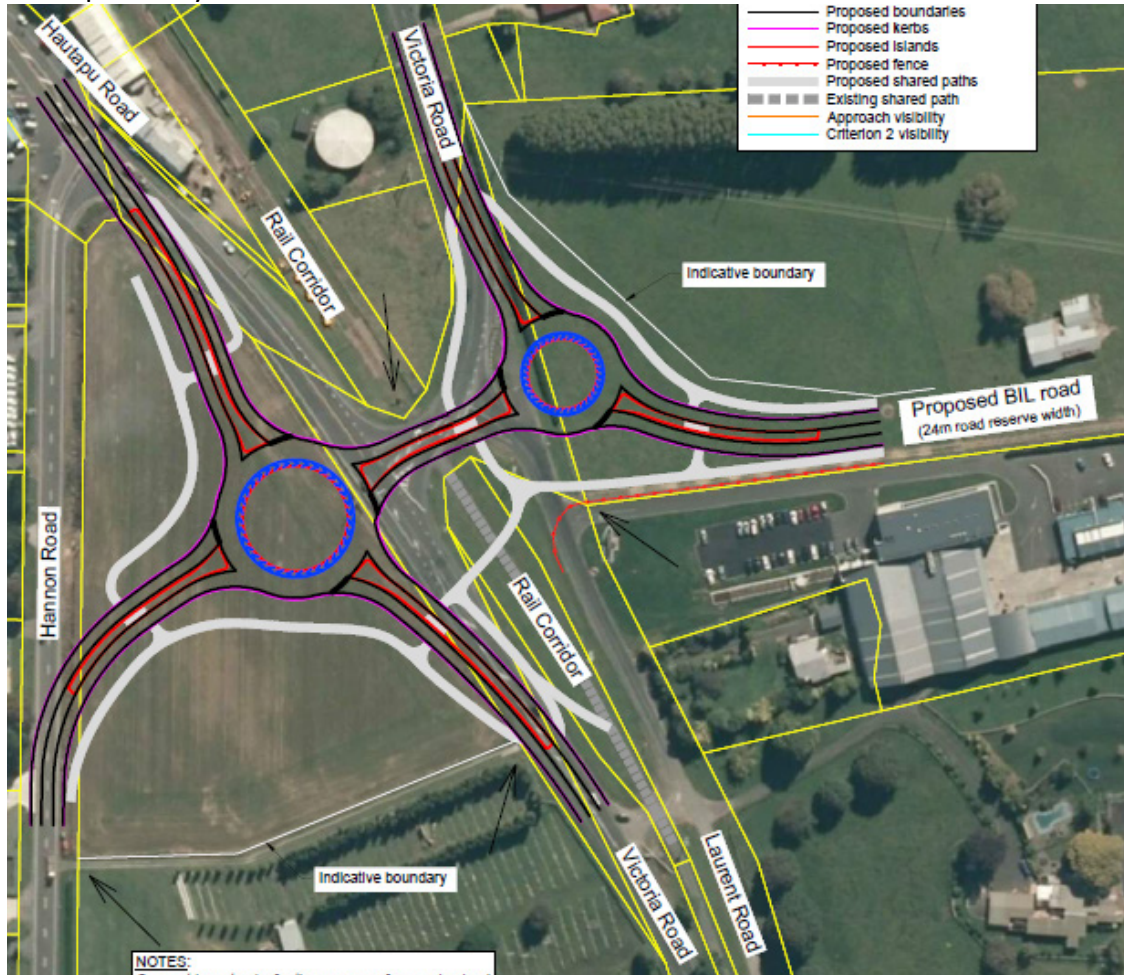


Figure 2 Two Roundabouts option (Graymatter concept 25 Sept 2018)

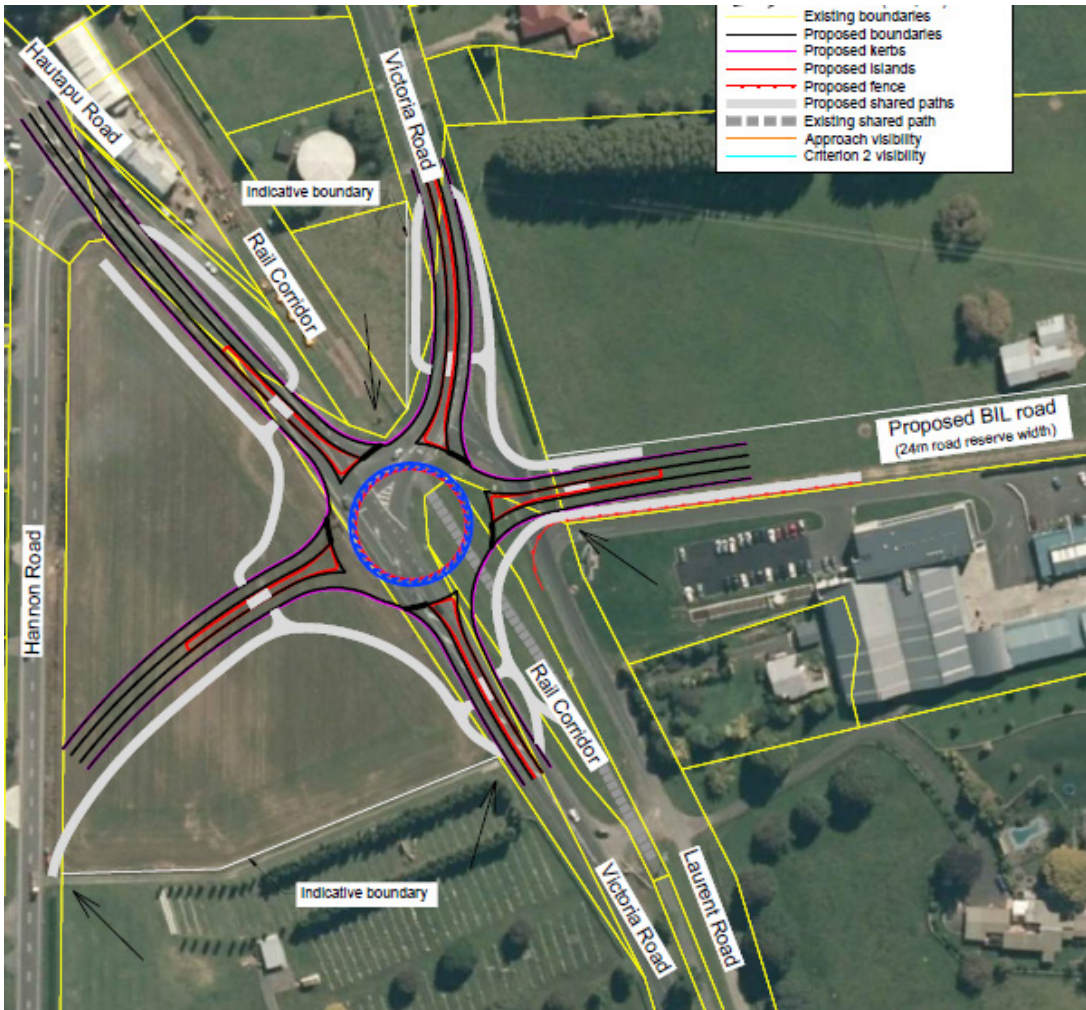


Figure 3 Five leg roundabout option (Graymatter concept 25 Sept 2018)

PASSENGER TRANSPORT AND ACTIVE TRANSPORT MODES

The close proximity to the Cambridge urban area and planned walking and cycling connections to the Hautapu industrial area ensures that active travel modes and passenger transport use will be very viable options for employees in the area. The BIL concept plans and plan change rules and principles should be implemented through the subdivision process to create the walking and cycling infrastructure required.

No passenger transport service exists in this area presently but the Cambridge north residential zone and Hautapu industrial zone will inevitably require these services and it is essential that intersections, roads, roundabouts, and widenings, allow for bus stops to be created with the future implementation of bus services.

BACKGROUND INFORMATION

All supporting documentation can be found in the following TRIM records:

TRIM #	Title	Author
18080987	Final Appendix C Transportation assessment 27 July 2018	Graymatter
18100574	Hautapu Industrial Plan Change 6 Transport Connections	Graymatter
18098397	14 Plan Change Submission Kiwirail	Pam Butler
	Opus Peer review (Once all information is received from Graymatter)	
18114772	Two Roundabouts option concept 25 Sept 2018	Graymatter
18114769	% Leg roundabout option concept 25 Sept 2018	Graymatter
18114768	APL Hautapu Campus Master Plan Layout 10 Oct 2018	BIL
18118545	North access concept memo 29 Oct 2018	Graymatter



Bryan Hudson
ROAD CORRIDOR MANAGER

To: Todd Whittaker **Cc:** Robin Walker

From: Richard Bax

Date: 1 November 2018 **File Ref:** 020-08-92/2

Subject: 3 Waters Plan Change 11 - memo on applicants submissions 1 November 2018

EXECUTIVE SUMMARY

The purpose of the Memo is to outline the council staff view of the 3 Waters proposals for Private Plan Change 11 (PC 11) as submitted by the applicant BIL. It needs to be remembered that this is a Plan Change combined with a Structure Plan but is not a resource consent.

There are a number of issues in servicing this Plan Change Area, although these can be overcome with collaboration with the applicant and council.

The Stormwater solution as proposed by the applicant is a mix of private and public pipes, swales, soakage devices and treatment ponds all eventually discharging to the Mangaone Stream. This requires a discharge consent from the Waikato Regional Council (WRC). The Development Agreement between BIL and council will determine the private/public ownership of these new assets.

The water supply to the PC 11 area is provided from the existing network in Hautapu which also supplies the nearby Hautapu Reservoir. This supply is mainly used by Fonterra and is at a lower pressure than council's usual level of service. A new watermain was already planned to replace the present supply to the reservoir and this in part, will release capacity in the present reticulation to service growth. The first of two new watermains from Leamington to Cambridge North is being constructed at present with the second one from Cambridge North to Hautapu currently planned to go out to tender in early 2019, with construction expected to start in mid 2019.

The water network is not able to meet the fire flow requirements for the proposed very large APL buildings, and so the applicant will need to provide fire protection by other means. There are acceptable solutions under the NZ Fire Service Fire Fighting Water Supplies Code of Practice as set out in the Waikato Regional Infrastructure Technical Specification (RITS).

The wastewater servicing of the Hautapu (west) Industrial area was also already planned with design in 2018/19 and construction in 2019/20.

The servicing of the PC11 area requires additional wastewater capacity and this is not currently in the Long Term Plan but is proposed to be added to the draft 2019/20 Annual Plan.

The capacity in the planned Hautapu west pipe could be used in the interim if necessary.

The proposals were peer reviewed for council by WSP-Opus Consultants and their feedback forms part of this memo.

Overall I do not believe there are any issues in providing water supply and wastewater services to PC11. The Stormwater servicing is able to be provided, subject to discharge consent being issued by WRC. The applicant is progressing this directly.

RECOMMENDATION

That:

- a) *the memo of Richard Bax Acting Manager Infrastructure Development be received, and*
- b) *the information in it be used for the Plan Change 11 planning report.*

BACKGROUND INFORMATION

All supporting documentation can be found in the following TRIM records:

TRIM #	Title	Author
xxx	Bardowie Industrial Precinct Wastewater Design - 23 October 2018	HG Consultants

Water Supply

HG Consultants on behalf of BIL have provided a water reticulation layout and philosophy with a key consideration being fire fighting. Waipa DC has a system that does not easily provide for high flows for fire fighting, and this is understood by the applicant.

Details on how large building which are proposed by APL will be protected is being progressed but is not required to be resolved for the PC 11 process.

There are acceptable solution under the NZ Fire Service Fire Fighting Water Supplies Code of Practice as set out in the Waikato Regional Infrastructure Technical Specification (RITS).

I'm satisfied that the proposal can be serviced within the existing network alongside the works council currently has in the Long Term Plan (LTP) for design in 2018/19 and construction in 2019/20.

The high level modelling undertaken has suggested that there are supply limitations to servicing C7 (Race course land off Racecourse Road) and the increased Hautapu Industrial area. This will be better understood once council completes the more detailed Cambridge water supply modelling work in 2019. In the meantime, water supply capacity presently identified for 90 Ha of the combined Hautapu (west and east) Industrial areas can be utilised.

It is very likely council will need to further increase its trunk watermains in the next few years, particularly when further land around the PC11 area develops. Once the modelling work is completed and possible timing of future development is clearer, projects can be considered as part of the 2021-31 Long Term Plan review.

Wastewater

HG Consultants on behalf of BIL have suggested that an allowance of 30 persons/Ha for wastewater be used for design purposes – this is effectively dry industry only. This is the same allowance used for the Hautapu Industrial Structure Plan area to the west.

WSP-Opus, who peer reviewed the H G work, believe that the solutions proposed are feasible, but do highlight the overall issues that the Cambridge Wastewater model is out of date and requires work to make it more reliable. Staff have discussed this with them and identified some areas where the current network, may have capacity issues. This is very much dependent on the speed

of development in Cambridge/Hautapu and the nature of the industrial developments , i.e. limited wet industry. The updating of the model in 2019 along with monitoring water usage (which directly impacts on wastewater flows), will enable this potential concern to be better understood with any improvements considered as part of the 2021-31 LTP review.

In preparation for the Cambridge wastewater pipe bridge upgrade project a high level check was made to ensure there was sufficient wastewater capacity across the river to account for C7 wastewater flows. A delay in the development of Growth cell C7 – the horse race track, will free up capacity and provide time for additional capacity to be constructed.

I’m satisfied that if this allowance is used, then the existing and proposed wastewater network can cope with those flows. This does however, effectively ‘cut out’ any wet industry being able to develop in the area. The BIL team have acknowledged and accepted this.

Stormwater

HG and MEC consultants on behalf of BIL have provided stormwater solutions which in general match councils requirements. The proposal was reviewed by WSP-Opus who made a number of points that either have been addressed or can be if development proceeds.

The key requirements for council are;

- the applicant obtaining a discharge consent from WRC, that is acceptable to Waipa District Council as it will eventually be novated to the District Wide Comprehensive Stormwater Discharge Consent
- ensuring that any pipes, soakage and retention devices, swales, and ponds are built with whole of life considerations and private/public ownership is clearly determined and agreed.

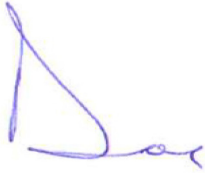
RISK MANAGEMENT

The following risks issues have been identified:

Risk	Comment / Mitigation Measures
The modelling results are inaccurate meaning council cannot provide water and cope with additional wastewater flows from the PC11 area	The services identified for growth areas that are not yet ready for development can be re allocated to the PC11 growth area.
The allowance for flows from the remaining catchment (Swayne Rd/Zig Zag Rd/Expressway/Victoria Rd) is not accounted for in the design and calculations	Investigations are now underway to identify the flows and account for this catchment.
The allowances enabled by upsizing infrastructure are not required and so costs are not recoverable	This will need to be carefully managed and may result in higher Development Contributions from interest charges, that <u>might</u> need to be ratepayer supported.
A wet industry wants to develop in this area	It is most likely that it will have to be declined but directed elsewhere closer to trunk services.
Stormwater impacts on the Mangaone Stream	This will be identified and mitigation

are not fully understood and cause flooding issues

determined as part of the discharge consenting process with WRC.



Richard Bax
ACTING MANAGER - INFRASTRUCTURE DEVELOPMENT