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Date: 25/01 2023
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Subject: PC17 Waka Kotahi submission #12 memo

Waipā District Council Proposed Plan Change 17 – Hautapu Industrial Zone has received a submission from Waka Kotahi (identified as submission #12). A meeting was held on 17th January 2023 with Waipā District Council, their consultants, and Waka Kotahi to discuss the submission points and seek a resolution.

The purpose of this memo is to clarify mechanisms and triggers in the District Plan that relate to transportation effects on Hautapu Road and the State Highway 1b intersection, as agreed at the meeting.

1. The planning mechanisms Council could rely on to manage the impacts of development generated traffic at the intersection. These to include the mechanisms that relate to the Carters Flat activity relocation.

The following are existing planning mechanisms that could be used to manage the transportation related impacts at the intersection, no new mechanisms are being introduced as part of this plan change. Hautapu Road is a local road according to Appendix T5 Road Hierarchy of the Waipā District Plan. This means that any activity that has access onto Hautapu Road and has vehicle movements exceeding 250 vpd will require an Integrated Transportation Assessment (ITA), which would consider the capacity of the intersection. This, coupled with transport related rules in Section 7 -Industrial Zone and Section 16 – Transportation, which determines access widths and distances, provides a level of certainty that large scale industrial activities and their transportation effects will go through a resource consenting process.

There are, however, industrial activities that can possibly generate moderate vehicle movements, that can be established without requiring a resource consent or ITA. i.e. under 250vpd. These activities can be filtered through other methods such as the building consent process. All new buildings in this area will be subject to building consents and development contributions assessments.

If Council determines that a development is of a scale that has a direct transportation impact or results in a cumulative impact on the network, Council can enter into an Infrastructure Works Agreement (IWA) with a developer, this agreement sits outside the consenting process under the Local Government Act. This IWA is an arrangement between the developer and Council to expedite the construction of the intersection while potentially off-setting development contributions. This would be beneficial to both Council and developer if the triggers were met

for the intersection construction aligning with development impacts on the network or before the planned construction of the intersection. This would allow for a more streamlined procurement process for the intersection construction. However, as Council already has funding for this roundabout within the Long Term Plan, once the State Highway is officially revoked, Council can determine which pathway will be most efficient.

Activities that are relocating from Carter's Flat have a level of certainty via the proposed new policy as part of PC17. These relocated activities are anticipated to be minimal, as they have existing use rights in their current location in Carter's Flat, aside from willingly moving to Hautapu for reasons such as better access, higher profile etc, the only need for these businesses to relocate is if the activity seeks to physically expand their buildings and operations beyond minor improvements.

The types of activities currently operating in Carter's Flat, which are subject to this new policy, are generally small-to medium enterprises, and therefore not large traffic generators. These activities would still need to meet permitted activity requirements in the Industrial Zone and meet all Hautapu Structure Plan requirements, and if not, would still require resource consents to operate, at which time transportation effects will be assessed.

The addition of the policy will cater for a small number of potential relocations and does not result in any effects or types of activities that would otherwise not be anticipated in this area.

2. The 5ha development threshold triggering the requirement for construction of the roundabout and closure of Hannon Road;

In Waipā District Plan S5 – Hautapu Industrial Structure Plan, there is a list of items that must give effect to the Structure Plan relating to road and access, stormwater etc. This Structure Plan and an excerpt have been included below for ease of reference.

- *“Hannon Road intersection to close when 5ha of new development has occurred.*
- *Stage 1 roundabout on Victoria Road required prior to Hannon Road closure.”*

The first bullet point is triggered by this proposed plan change, being 5ha of additional land available for development. However, the Hannon Road intersection cannot be closed until the Victoria Road roundabout is constructed.

Council has the funding and intention to construct this intersection in FY23-24 once the piece of road is formally revoked. This will then lead to the Hanon Road closure.

3. The performance of the intersection with traffic due to the additional Area 6 inclusion.

Table 1 summarises the capacity analysis results for the Victoria Road/ Hautapu Road intersection, while the SIDRA Intersection summarises are attached below. The performance assessment is based on:

- A 20-year horizon assessment period (2041) with input volumes from SIDRA modelling undertaken by CKL as part of the Kama Trust Integrated Transportation Assessment (ITA), dated 11 August 2022.
- A gross peak hour trip generation rate of 20trips/hr/ha was adopted for future industrial activities within the structure plan area (and Area 6).
- The single-lane roundabout configuration as illustrated in the concept design drawings by Gray Matter by (Ref# ECM10796019).

This further assessment has included sensitivity testing of various land use scenarios to determine the level of development that could reasonably be accommodated by the single-lane roundabout design.

As shown in Table 1 , the single-lane configuration is expected to perform satisfactorily during both the 2041 AM and PM peak periods with up to 60ha of new industrial development within the structure plan area precinct inclusive of the Area 6 area (i.e., an additional 1,200 vph during the typical commuter peak hours). Once development reaches this level, the assessment shows that the roundabout would likely need to be dual-laned, however this will be dependent on the overall rate of trip generation that development within the structure plan area generates.

The assessments also indicate that incremental capacity upgrading may present as low cost and interim responses should they be needed through the period of around 40 to 60ha of development. These incremental responses could be deployed on an as and when needed basis, extending the period before full dual laning of the roundabout becomes necessary as being likely to include constructing short left-turn lanes on the roundabout approaches. Any incremental response however would be subject to the influences of the pattern of development in the area, inclusive of how development within the C10 development area progresses.

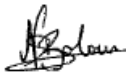
Assuming an uptake rate of between 5-10ha per annum¹, the roundabout is assessed as being likely to warrant upgrading to a dual-lane configuration within 6-12 years (i.e.: between 2029 and 2035) after opening assuming commencement in 2024. It is understood that SH1B (Victoria Road) will be formally revoked to a district road managed by WDC within the next 12 months. Any further requirement for upgrading works however remains subject to the rate of development and the rate of trip generation produced by that activity and is assessed as occurring long after the corridor ceases to be a state highway and at a time when WDC has full responsibility for operation and maintenance of the road corridor.

¹ Averaged based on uptake rates surveyed for the Hamilton Airport Central Precinct (5.7 ha/annum in 2017/18), Titanium Park (1 ha/annum in 2017/18), and Tauranga City (15 ha/annum (6-year average) and 9.9 ha/annum (10-year average) at 2021).

Further to the assessments set out in the Table below, the Harrison Grierson assessments identified a dual lane roundabout would be expected to operate and LOS A in the AM and LOS B in the PM peak period. Further sensitivity testing determined a doubling of the long-term trip rate across the full structure plan site would likely result in the dual lane roundabout just reaching practical operational capacity.

These have been further assessed and indicate potential operational performance in the range LOS B in the AM and LOS D in the PM. These longer term forecasts however are quite subjective and are highly dependent on development typologies as well as the potential distributive impacts across the wider transport network. The overall assessment that can be made on these bases is that the performance outcome is likely to be in the order of those levels assessed and described and indicate the dual lane facility will adequately supply the capacity necessary to meet the full structure plan development outcomes.

Accordingly, it is concluded the proposal will operate safely and efficiently as a single lane roundabout through the period where Waka Kotahi continues to have accountability for the corridor. The transport capacity to be established will readily support both incremental as well as the long term and full structure plan area development as planned. Any potential impact is therefore assessed as less than minor. The land area allocation is appropriate for the infrastructure required to support the structure plan. On these bases, it is concluded the structure plan and associated infrastructure has been appropriately planned to accommodate the land development and activity types proposed.



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Table 1: 2041 AM and PM Peak Intersection Performance Summary – Victoria Road/ Hautapu Road/ Hannon Road Intersection

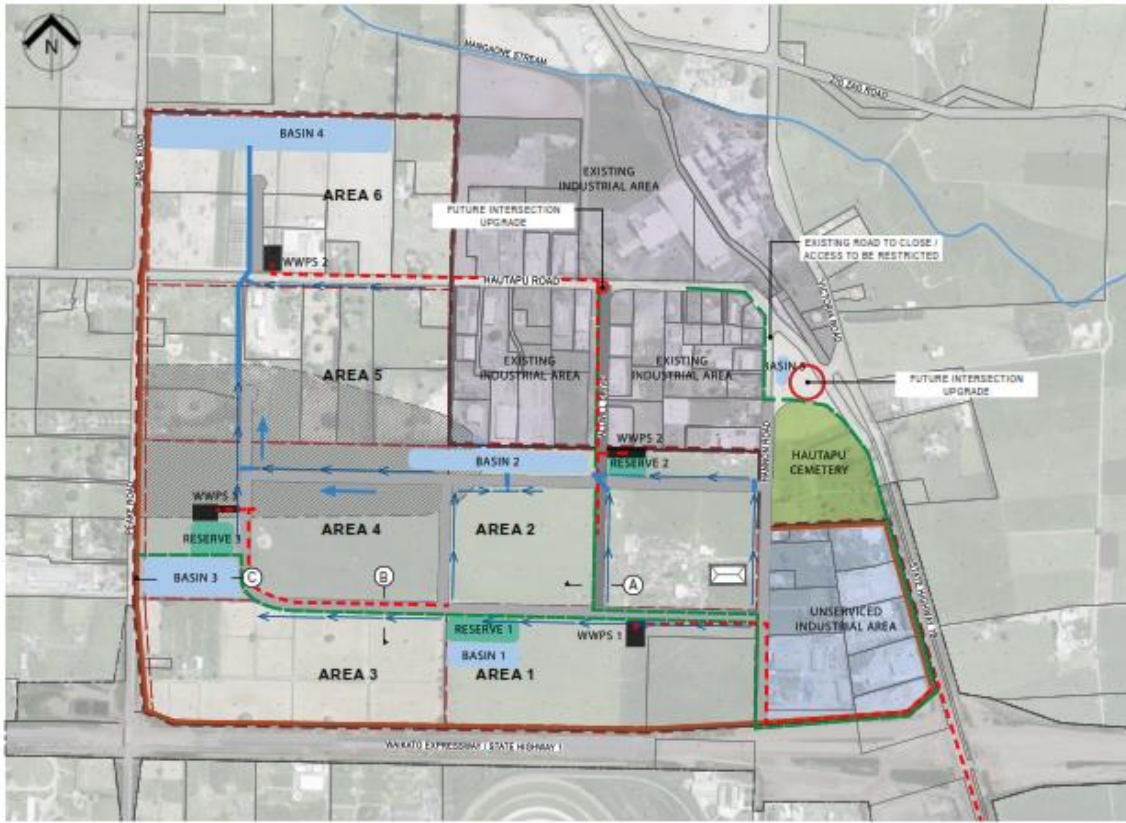
Land Use Scenario	Intersection Configuration	AM Peak			PM Peak			Comment
		Ave Delay (sec)	LOS	95th %-tile queue (m)	Ave Delay (sec)	LOS	95th %-tile queue (m)	
<p>Scenario 1: 2041 Baseline + a total of 5ha of new development within the Hautapu Industrial Structure Plan area (and 0ha developed within Area 6)</p>	Single-lane Roundabout	5.9	A	39	5.9	A	49	Roundabout construction triggered. Single-lane roundabout performs at acceptable LOS
<p>Scenario 2: 2041 Baseline + a total of 20ha of new development within the Hautapu Industrial Structure Plan area (with 0ha developed within Area 6)</p>	Single-lane Roundabout	7.6	A	67	9.4	A	83	20ha of new development; equivalent to developing Area 1 and 5ha of Area 2. Single-lane roundabout performs at acceptable LOS.
<p>Scenario 3: 2041 Baseline + a total of 40ha of new development within the Hautapu Industrial Structure Plan area (inclusive of 5ha developed within Area 6 for trip distribution purposes)</p>	Single-lane Roundabout	11.1	B	170	38.0	D	361	40ha of new development; equivalent to developing Areas 1 & 2 and 5ha of Area 6. While single-lane roundabout performs at acceptable LOS, one approach @ LOS F in PM. Minor upgrading may be required (e.g.: additional left-turn lane).
	Single-lane Roundabout with capacity upgrades (additional left-turn lane on eastern approach)	9.2	A	164	17.5	B	155	Performance of roundabout improves to LOS A/B with minor upgrade works. Dual-laning not required.
<p>Scenario 4: 2041 Baseline + a total of 45ha of new development within the Hautapu Industrial Structure Plan area (inclusive of 5ha developed within Area 6 for trip distribution purposes)</p>	Single-lane Roundabout	22.6	C	403	56.1	E	479	45ha of new development; equivalent to developing Areas 1, 2 and 5ha in Areas 3 and 6 (each). Single-lane roundabout at practical capacity in PM peak, with at least one approach @ LOS E/F in AM & PM peaks. Minor upgrading required (additional left-turn lanes).
	Single-lane Roundabout with capacity upgrades (additional left-turn lanes on eastern, southern and northern approaches)	6.6	A	43	13.4	B	98	Performance of roundabout improves to LOS A/B with minor upgrade works. Dual-laning not required.

Land Use Scenario	Intersection Configuration	AM Peak			PM Peak			Comment
		Ave Delay (sec)	LOS	95th %-tile queue (m)	Ave Delay (sec)	LOS	95th %-tile queue (m)	
Scenario 5: 2041 Baseline + a total of 60ha of new development within the Hautapu Industrial Structure Plan area (inclusive of 10ha developed within Area 6 for trip distribution purposes)	Single-lane Roundabout	112.7	F	1,480	159.8	F	1,021	60ha of new development; equivalent to developing Areas 1, 2, 3 and 10ha of Area 6. Single-lane roundabout over-capacity.
	Single-lane Roundabout with capacity upgrades	8.5	A	54	40.0	D	374	Performance of roundabout improves to LOS A/D with upgrade works, however, the Hannon Road approach @ LOS F in PM peak. Upgrading to a dual-lane roundabout likely required before any further development of the structure plan area.
	Dual-lane Roundabout	7.2	A	60	17.8	B	153	Dual-lane roundabout performs at acceptable LOS.
Scenario 6A: 2041 Baseline + a total of 70ha of new development within the Hautapu Industrial Structure Plan area (inclusive of 20ha developed within Area 6 for trip distribution purposes)	Single-lane Roundabout	199.3	F	2,345	225.2	F	1,606	70ha of new development; equivalent to developing Areas 1, 2, 3 and 6. Single-lane roundabout over-capacity.
	Single-lane Roundabout with capacity upgrades	17.2	B	166	71.2	F	472	While minor improvement in performance observed, roundabout still at practical capacity in PM peak with proposed upgrades. Upgrading to a dual-lane roundabout likely required.
	Dual-lane Roundabout	9.3	A	114	12.5	B	76	Dual-lane roundabout performs at acceptable LOS.
Scenario 6B: 2041 Baseline + a total of 70ha of new development within the Hautapu Industrial Structure Plan area (inclusive of 10ha developed within Area 6 for trip distribution purposes)	Single-lane Roundabout	180.8	F	2,165	207.7	F	1,186	70ha of new development; equivalent to developing Areas 1, 2, 3 and 10ha of Areas 4 and 6 (each). Single-lane roundabout over-capacity.
	Single-lane Roundabout with capacity upgrades	11.0	B	87	88.1	F	1,009	While minor improvement in performance observed, roundabout still at practical capacity in PM peak with proposed upgrades. Upgrading to a dual-lane roundabout likely required.
	Dual-lane Roundabout	7.5	A	67	15.8	B	125	Dual-lane roundabout performs at acceptable LOS.
Scenario 7: 2041 Baseline + a total of 85ha of new development within the Hautapu	Single-lane Roundabout	290.1	F	3,152	311.9	F	2,070	70ha of new development; equivalent to developing Areas 1, 2, 3, 4 and 15ha of Area 6.

Land Use Scenario	Intersection Configuration	AM Peak			PM Peak			Comment
		Ave Delay (sec)	LOS	95th %-tile queue (m)	Ave Delay (sec)	LOS	95th %-tile queue (m)	
Industrial Structure Plan area (inclusive of 15ha developed within Area 6 for trip distribution purposes)								Single-lane roundabout over-capacity.
	Dual-lane Roundabout	11.5	B	107	42.0	D	394	Dual-lane roundabout performs at acceptable LOS, however, one approach @ LOS F in PM peak. Further upgrading of dual-lane roundabout unlikely to be required when wider transport network distribution impacts are considered together with wider land use development patterns around Cambridge.
	Dual-lane Roundabout with capacity upgrades	8.7	A	84	13.0	B	84	Upgraded dual-lane roundabout performs at acceptable LOS.

Notes:

1. Input volumes were sourced from the modelling undertaken by CKL for Kama Trust Integrated Transportation Assessment.
2. Traffic associated with the adjacent Bardowie Industrial Precinct is excluded from the baseline traffic demands. Access to the initial stages of the precinct will be provided via a second roundabout on Victoria Road located near the Hautapu Cemetery, and access to these later stages, which are only planned to be developed 5+ years post development of Stage 1, is yet to be confirmed.
3. Peak hour demands were estimated based on a trip generation rate of 20 trips/ha/hr (two-way).



KEY

- STRUCTURE PLAN AREA
- AMENITY PLANTING STRIPOST & RAIL FENCE
- AREAS
- EXISTING INDUSTRIAL AREA
- UNSERVICED INDUSTRIAL AREA
- CEMETERY

- RESERVES (INDICATIVE SIZE)
- HANNON HOMESTEAD
- COLLECTOR ROAD (ALLWILL DRIVE)
- INDICATIVE LOCAL ROAD
- CYCLE / PEDESTRIAN PATH
- REFER TO CROSS SECTIONS
- SECONDARY FLOW

- SOAKAGE BASIN
- SECONDARY FLOW CHANNEL
- SWALE
- ZONE OF SOILS POTENTIALLY UNSUITABLE FOR SOAKAGE
- CULVERT
- FUTURE INTERSECTION UPGRADE
- WASTE WATER PIPE (RISING MAIN)

ITEMS TO GIVE EFFECT TO THE STRUCTURE PLAN:

ROADS & ACCESS

- HANNON ROAD INTERSECTION TO CLOSE WHEN SHA OF NEW DEVELOPMENT HAS OCCURRED.
- STAGE 1 ROUNDABOUT ON VICTORIA ROAD REQUIRED PRIOR TO HANNON ROAD CLOSURE.
- ALLWILL DRIVE INTERSECTION TO BE UPGRADED WITH A LINK INTO THE AREA 2. FURTHER UPGRADE TO SIGNALS WITH AREA 3 DEVELOPMENT.
- NO INDIVIDUAL ACCESS TO PEAKE ROAD.
- CYCLE WAY TO BE CONSTRUCTED FROM VICTORIA ROAD THROUGH AREAS 1 AND 3 TO PEAKE ROAD AS SHARED PATH. TREATMENT REQUIRED AT VEHICLE CROSSINGS ALONG ROUTE TO ALERT TO ALERT VEHICLES TO CYCLISTS ON PATH.
- INTERSECTION UPGRADE HAUTAPU ROAD AND SH1B / VICTORIA STREET REFER TO GREY MATTER DESIGNS REF# EOM10798019.

STORMWATER

- ON-LOT TREATMENT AND DISPOSAL REQUIRED FOR RUNOFF UP TO AND INCLUDING 24-HR, 1% AEP EVENTS.
- PRIMARY NETWORK (SWALE) CAPACITY FOR 10% AEP EVENTS. SECONDARY NETWORK (ROAD CORRIDOR) FOR 1% AEP EVENTS.
- BASIN CAPACITY FOR 72-HR, 1% AEP EVENTS WITH NO SOAKAGE ALLOWANCE.
- BASIN UNDER DRAINAGE MATRIX REQUIRED TO MINIMISE EFFECTS FROM SILT DEPOSITION IN THE BASIN.

WATER SUPPLY

- RETICULATED NETWORK TO BE PROVIDED.
- INSTALLATION OF DN375 MAIN REQUIRED PRIOR TO DEVELOPMENT.
- STAGED NETWORK MAY ONLY ACHIEVE FWQ LEVEL OF SERVICE. COMPLETED NETWORK WILL ACHIEVE FWQ. HIGHER RISK USES MUST PROVIDE APPROPRIATE SOLUTIONS TO MEET FIRE FIGHTING REQUIREMENTS.

WASTEWATER

- GRAVITY SEWER NETWORK REQUIRED THROUGHOUT, DISCHARGING TO WW PUMP STATIONS.
- PS-1 REQUIRED WITH AREA 1 DEVELOPMENT. SUBSEQUENT PUMP STATIONS TO DISCHARGE INTO GRAVITY NETWORK SERVING PS-1.
- PS-1 RISING MAIN TO DISCHARGE TO TAYLOR STREET WW PUMP STATION.

LANDSCAPING AMENITY

- 4m PLANTING STRIP TO FACE WAIAKATO EXPRESSWAY.
- PEAKE ROAD, HAUTAPU ROAD, NORTH END OF HANNON ROAD AND VICTORIA ROAD TO PROVIDE 5m LANDSCAPE AMENITY PLANTING STRIP AND AMENITY TREE PLANTING AT APPROX 30m INTERVALS.
- PLANTING STRIP ON PEAKE ROAD TO BE VESTED WITH COUNCIL.
- NOISE BUNDS REQUIRED ON PEAKE ROAD AND HAUTAPU ROAD.
- THREE RESERVES TO BE PROVIDED IN LOCATIONS IDENTIFIED. ALLOWANCE TO BE MADE FOR LIMITED CAFE(S) AND/OR LUNCH BAR(S) ADJACENT TO PARKS.

BUILDING AND SITE LAYOUT

- CAR PARKING, BUILDING LAYOUT AND DESIGN, LANDSCAPING ETC. ON LOTS, TO BE IN ACCORDANCE WITH THE DESIGN GUIDELINES.

