HUGHES
TRAFFIC &
TRANSPORTATION

Waikato Thoroughbred Racing
Fast Track Substantive Consent

Integrated Transportation Assessment

Control Page

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1 Author Qualifications

My name is Daryl Hughes. I am the owner / Director of Hughes Traffic & Transportation Limited. I have 31 years' experience in the field of traffic and transport engineering. I obtained an honours degree in Civil Engineering from the University of Teesside (1995) and I am a Chartered Member of Engineering New Zealand and the Institution of Civil Engineers (UK).

I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2023 and that I have complied with it when preparing this report. Other than when I state I am relying on the advice of another person, this report is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

2 Executive Summary

This Integrated Transportation Assessment (ITA) has been prepared by Hughes Traffic & Transportation Limited in support of the substantive Fast-track application for the Waikato Thoroughbred Racing (WTR) Project located in Tamahere, Waikato. The Project is a large, predominantly greenfield equine and racing precinct that will consolidate existing Waikato racing and training functions into a single regional facility, together with complementary commercial, bloodstock, veterinary, residential and senior-living activities.

The Site is approximately 164ha and is bounded by Pencarrow Road to the west, Hooker Road to the south, Duncan Road to the east and State Highway 1 (SH1) (Waikato Expressway) to the north (the Site does not have access to SH1). The regionally significant Te Awa River Ride (a shared path) follows the Pencarrow Road and Hooker Road frontages.

The proposed development will result in the Site largely being used for horse/harness racing and training purposes; however, the masterplan also includes provisions for other activities such as a retirement village, commercial development, and lifestyle residential lots. As such, the transport assessment addresses both the day-to-day operation of the employment, residential, retirement village and training precincts, and the intermittent peaks associated with the racing and bloodstock precincts.

The masterplan provides two principal accesses from Pencarrow Road, one main access onto Hooker Road serving the senior-living precinct, and two accesses onto Duncan Road serving the training precinct and residential development separately. A minor jointly owned

access lot (JOAL) is also proposed off Hooker Road, together with a limited number of individual residential lot vehicle crossings on Duncan Road and Hooker Road.

Traffic modelling has been further developed from the referral-stage survey information, Waikato Regional Transportation Model information and the updated development schedule. The principal network scenario combines baseline traffic with residential, training, retail/commercial activities and a medium-sized thoroughbred event. The medium-sized event is treated as the largest event expected to operate without specific major-event traffic management. The larger infrequent feature events are proposed to be managed through event-specific planning and temporary traffic management rather than used as the basis for permanent intersection infrastructure.

SIDRA modelling has been carried out for the Site accesses and external intersections. The modelled external intersections include the Tamahere Interchange, Pencarrow Road / Hooker Road, Hooker Road / Duncan Road and the Hooker Road / Cambridge Road / Racecourse Road intersection system, together with the principal Site accesses onto Pencarrow Road and Hooker Road.

To further improve safety of the road corridors surrounding the proposed development, it is proposed to undertake some upgrades to the roading network in vicinity of the Site. This includes introducing lower speed limits of 80km/h or less along Tamahere Drive, Pencarrow Road, Hooker Road and Duncan Road, and implementing these reduced speed limits through the use of gateway treatments along these road corridors. The extent of the updated speed limits, and the design and location of these gateway treatments will be confirmed as part of subsequent design stages.

It is also proposed to provide right-turn bays at both accesses on Pencarrow Road, and the retirement village access off Hooker Road, given the reasonably high demand for right-turn manoeuvres into the Site. A right-turn bay is proposed at the Duncan Road / Hooker Road intersection, prior to the training precinct becoming operational. These proposed upgrades are expected to have a positive impact towards both road safety and operation of the road corridors.

3 Introduction

This report has been prepared by Hughes Traffic & Transportation Limited on behalf of Waikato Thoroughbred Racing to assess the transport effects of the proposed Waikato Thoroughbred Racing Project located in Tamahere, Waikato for a substantive application under the Fast-track Approvals Act 2024. The location and extent of the Site are shown in yellow in **Figure 1** below.

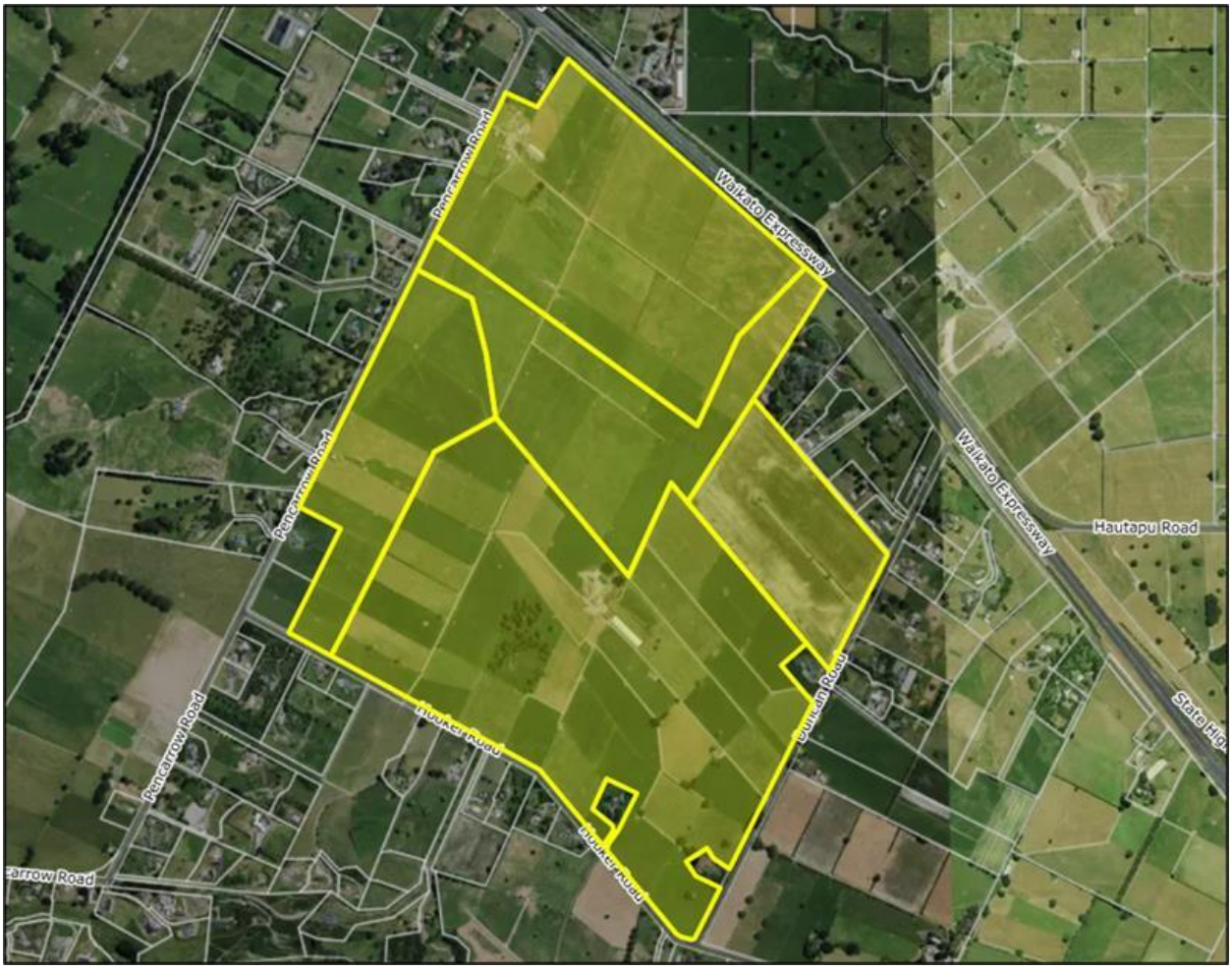


Figure 1: Site Overview

The Project will establish an integrated horse racing, training, events, commercial and residential precinct on approximately 164ha of land. It is intended to consolidate a number of existing Waikato racing and training facilities, while providing a purpose-built regional destination and complementary land uses that support the long-term operation of the precinct.

This ITA builds on the referral-stage Integrated Transport Assessment prepared by BCD Group, the associated traffic surveys and SIDRA assessment, the independent transportation peer review, the current masterplan, and the updated traffic generation and distribution model prepared for the substantive application. It has been prepared as a substantive-stage assessment rather than simply repeating the referral material.

The ITA addresses:

- the existing transport environment, including road function, public transport, active modes and safety;
- the status of future transport projects and the assumptions that can appropriately be relied upon;
- the final development and event envelope, access strategy and multimodal integration;
- traffic generation, distribution and SIDRA intersection testing;
- the relationship with SH1 and the Tamahere Interchange;
- the Te Awa River Ride interface, access, parking, servicing and event management;
- relevant national, regional and district transport policy and statutory transport standards;
- construction transport effects and the Framework CTMP;
- mitigation, staging, monitoring and implementation requirements and
- use of event and traffic management plans for the larger events.

By way of summary, it is concluded that the development enabled by the proposed Fast Track can be established such that there will be negligible effects to the function, capacity and safety of the surrounding transportation network.

4 Consultation

Prior to submission of the referral stage ITA, meetings were held with the New Zealand Transport Agency (NZTA) and Waikato District Council (WDC) on the 15th and 18th of December 2025. Follow up meetings were also held with NZTA, WDC and Waipa District Council (Waipa DC) in January and February 2026.

Following submission of the Referral ITA, feedback was received from several respondents. This feedback has been incorporated into the proposal, and additional assessments (where required) have been provided by way of this report. This feedback is summarised in **Table 1**.

Table 1: WDC and NZTA Feedback Summary on the Referral ITA

Organisation	Feedback
NZTA	Assess the anticipated trip generation volumes and trip distribution percentages for all ancillary activities within the Site.
	Confirm whether the completed traffic modelling relies on the Hamilton Southern Links connection.
	Assess the SH1 northbound off-ramp.
	Assess the potential traffic effects for the annual Field Days event.
	Provide a Construction Traffic Management Plan.
Waikato District Council	Requested applicant to work with WDC and NZTA to ensure comprehensive assessment.

Following the referral decision, consultation has continued as the Project design and substantive application have developed. This has included further engagement with NZTA, WDC, Waipa DC, Te Awa River Ride representatives, neighbouring landowners and the wider community. A broader record of engagement undertaken for the substantive application is provided in the Assessment of Environmental Effects prepared by BCD Group.

The transport related consultation undertaken following the referral stage, and how it has informed this ITA, is summarised in **Table 2**. This engagement has been particularly relevant to the scope of the network assessment; the treatment of future transport infrastructure; the assessment of the Cambridge Road / Hooker Road / Racecourse Road intersection; and the design of the Site accesses where they interact with Te Awa River Ride.

Table 2: Post-Referral Consultations Undertaken

Organisation	Post Referral Consultation	Influence on ITA
NZTA	Further engagement was undertaken with NZTA, including a meeting on 23 July 2026.	The consultation assisted in confirming the appropriate scope and assumptions for the substantive-stage network assessment. In particular, the ITA does not rely on Hamilton Southern Links to accommodate Project traffic, given the uncertainty regarding its funding and expected extended delivery timeframe. The assessment includes the Tamahere Interchange / SH1 connections, albeit pending updated traffic surveys once roadworks are completed.
Waikato District Council	WDC was provided with an initial substantive Project briefing on 28 July 2026, followed by transport specific meetings on 21 August and 10 September 2026.	The consultation has informed the assessment of the local road network and Site access arrangements. The substantive ITA provides detailed assessment of the Pencarrow Road, Hooker Road and Duncan Road accesses and the principal intersections on the surrounding WDC network. It also addresses road safety, intersection performance and the measures proposed to accommodate the additional traffic generated by the Project.

Waipa District Council	Transport specific meetings were held with Waipa DC on 21 August and 10 September 2026.	Consultation has informed the assessment of the eastern route toward Cambridge, particularly the Cambridge Road / Hooker Road / Racecourse Road staggered intersection. The intersection has consequently been assessed as a SIDRA network. Waipa DC also advised that potential changes to this intersection are under consideration. As no confirmed design is presently available, the ITA assesses the existing intersection arrangement.
Te Awa River Ride	A meeting was held with Te Awa representatives on 20 August 2026, with subsequent correspondence continuing following that meeting. Initial feedback was generally supportive, subject to safety concerns being addressed.	This engagement has reinforced the importance of maintaining the safety and continuity of Te Awa River Ride where it passes the Site and crosses the proposed Pencarrow Road and Hooker Road accesses. The access design and assessment therefore specifically consider cyclist and pedestrian priority, visibility, crossing geometry and the interaction between vehicles entering the Site and users of Te Awa.
Neighbours and wider community	A series of meetings was held with the Neighbours Liaison Group during July and August 2026, together with a community open day at the Tamahere Community Centre on 23 August 2026. Separate meetings were also held with individual neighbouring landowners.	This engagement has provided wider local context regarding the Project and the surrounding environment. Transport matters raised through the substantive consultation process have been considered alongside the technical assessment of access, traffic generation, road safety and effects on the surrounding network.

Overall, the post-referral consultation has resulted in a more developed substantive stage transport assessment than was available at referral. In particular, the ITA has been updated to assess the final access strategy and development traffic assumptions; undertake more detailed assessment of the surrounding local and State highway network; address the Cambridge Road / Hooker Road / Racecourse Road intersection as a network; and give specific consideration to the interaction between the proposed accesses and Te Awa River Ride. The relevant outcomes of this consultation are discussed further in the corresponding technical sections of this ITA.

5 Background and Planning Context

The Project is intended to create a purpose-built regional horse racing and training facility, to consolidate functions currently undertaken at separate facilities, including Te Rapa, Waipa and Cambridge thoroughbred facilities and the Cambridge harness track. This is important to the transport context: the Project will create new local traffic demands at Tamahere, but a significant part of the racing and event activity represents relocation and consolidation of existing regional activity rather than wholly new regional travel.

The referral-stage transport assessment was more comprehensive than a typical Fast-track referral memorandum. It included traffic surveys, trip-generation analysis, distribution assumptions and SIDRA testing of key strategic and local intersections.

The substantive application provides the opportunity to reconcile the earlier assumptions to align with the final proposed masterplan, activity schedule and access strategy. In particular, this ITA distinguishes between regular everyday operations; medium events that can reasonably operate without special major-event controls; and infrequent feature events that require an Event Traffic Management Plan or equivalent event-specific controls.

6 Existing Transport Environment

6.1 Existing Environment

The Site is located in a predominantly rural environment southeast of Hamilton and northwest of Cambridge. It is broadly square in shape and has extensive frontage to Pencarrow Road, Hooker Road and Duncan Road. SH1 forms the northern boundary but no direct access to the state highway is proposed. The Site is currently rural in character and the surrounding local road network generally reflects a rural connector environment rather than an urban street environment.

The Site is approximately 6km from the Cambridge urban boundary, 3km from Hamilton International Airport and 5.5km form the boundary of Hamilton City.

6.2 Existing Road Network

Figure 2 provides an overview of the Site location within the road network. Key intersections in the local road network are indicated for ease of reference.

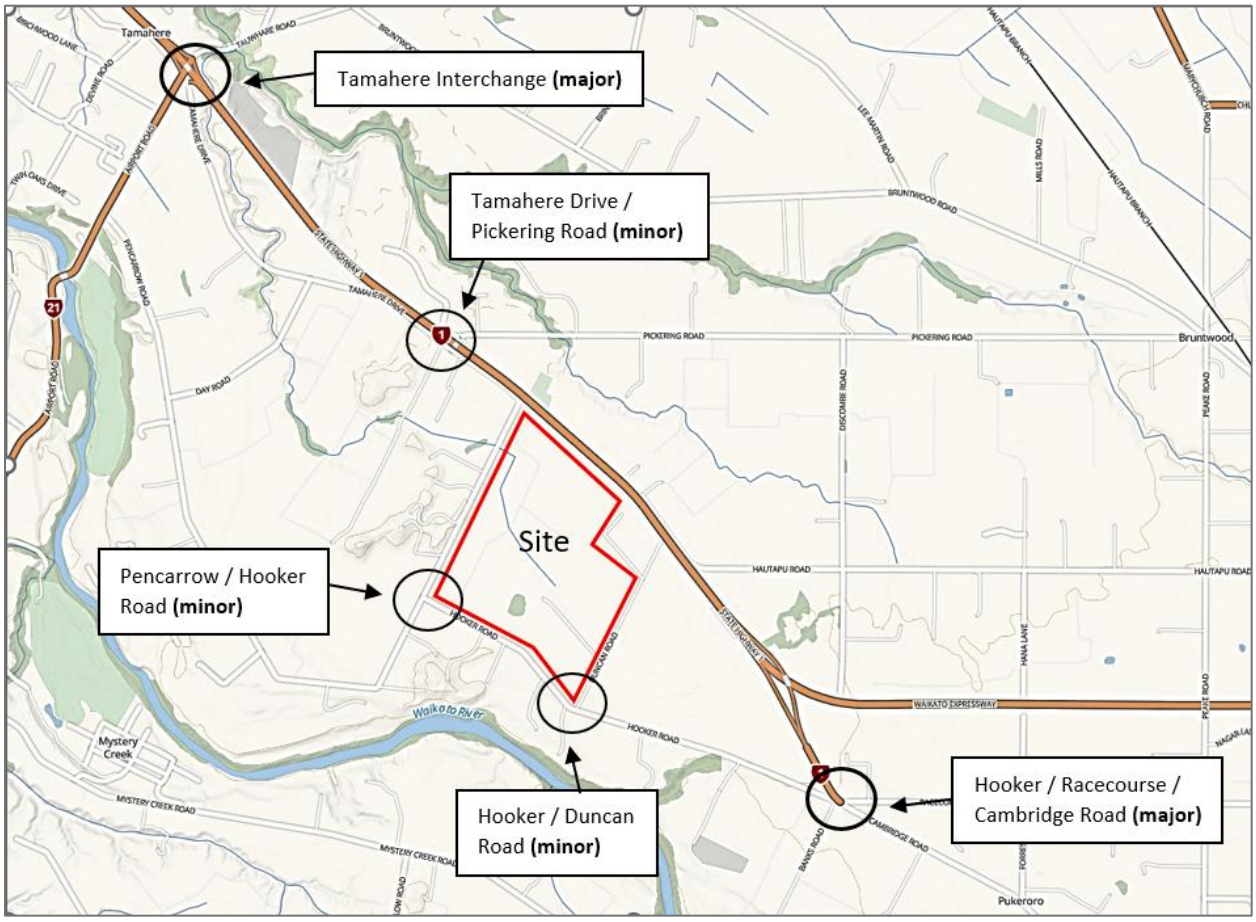


Figure 2: Site Location in Road Network

Pencarrow Road forms the western Site frontage and connects Tamahere Drive in the north with Hooker Road and Airport Road. Along the Site frontage it is a two-lane rural connector within an approximately 20m legal road corridor. It has approximately 6.7m of sealed carriageway, a 100km/h posted speed limit and a mean operating speed of approximately 69km/h. Te Awa River Ride (shared path) runs along the Site side of the road. Based on data provided by WDC, Pencarrow Road has an average daily traffic volume of 449 vehicles per day (vpd), with 11% heavy commercial vehicles (HCVs). A photograph of Pencarrow Road is provided in **Figure 3** below.



Figure 3: Pencarrow Road - Existing Corridor

Hooker Road forms the southern Site frontage between Pencarrow Road and Duncan Road and continues east toward Cambridge Road. It is also a two-lane rural connector within an approximately 20m legal road corridor. It has an approximately 6.0m sealed carriageway, a 100km/h posted speed limit and mean operating speed of approximately 70km/h. Te Awa River Ride follows the northern side of Hooker Road adjacent to the Site. Based on data provided by WDC, Hooker Road has average daily traffic of 849vpd, with 7% HCVs. **Figure 4** shows a photograph of Hooker Road.



Figure 4: Hooker Road - Existing Corridor

Duncan Road forms the eastern Site frontage, turning to the southeast parallel to SH1 before terminating in a dead-end. It currently provides access to a few dwellings on either side of the road corridor. The road corridor has a posted speed limit of 100km/h, but a much lower mean operating speed of 58km/h. Based on data provided by WDC, Duncan Road has average daily traffic of 172vpd, with 9% HCVs. It provides a rural local connection between Hooker Road and the wider rural road network. **Figure 5** below shows a photograph.



Figure 5: Duncan Road - Existing Corridor

The principal strategic connection to SH1 is via Pencarrow Road / Tamahere Drive and the Tamahere Interchange. This interchange has roundabouts sitting underneath the main SH1 alignment. The interchange was recently upgraded by NZTA to provide additional capacity and active mode infrastructure.

The Cambridge Road / Hooker Road / Racecourse Road intersection system provides the principal eastern connection toward Cambridge.

6.3 Public Transport

Public transport provision is limited in the immediate Site catchment. The Site is outside the established urban frequent public transport network and, for day-to-day travel, is expected to remain dependent on private vehicles. This context reinforces the importance of realistic event transport planning, coach and shuttle opportunities, rideshare management and safe connections for active modes where practical.

6.4 Walking, Cycling and Micromobility

The most significant existing active-mode facility is Te Awa River Ride, which follows the Pencarrow Road and Hooker Road Site frontages. Te Awa River Ride is a 3.0m wide off-road shared path between Ngāruawāhia, Hamilton, Tamahere and Cambridge (some 65km in length), providing a dedicated route for foot and bike travel through the region. This facility enables a good level of urban-rural walking and cycling connectivity to the Site.

This is a high-value regional walking and cycling route and is a key design constraint for every proposed access that crosses it. The Project access designs each provide clear priority, visibility, low-speed crossing geometry and appropriate markings / signage so that increased vehicle activity does not compromise the safety or attractiveness of the route.

Apart from Te Awa River Ride, the surrounding rural roads provide limited dedicated pedestrian and cycling infrastructure. The internal masterplan provides its own coherent walking and cycling network which connects safely to Te Awa River Ride. This is shown in **Figure 6** below.

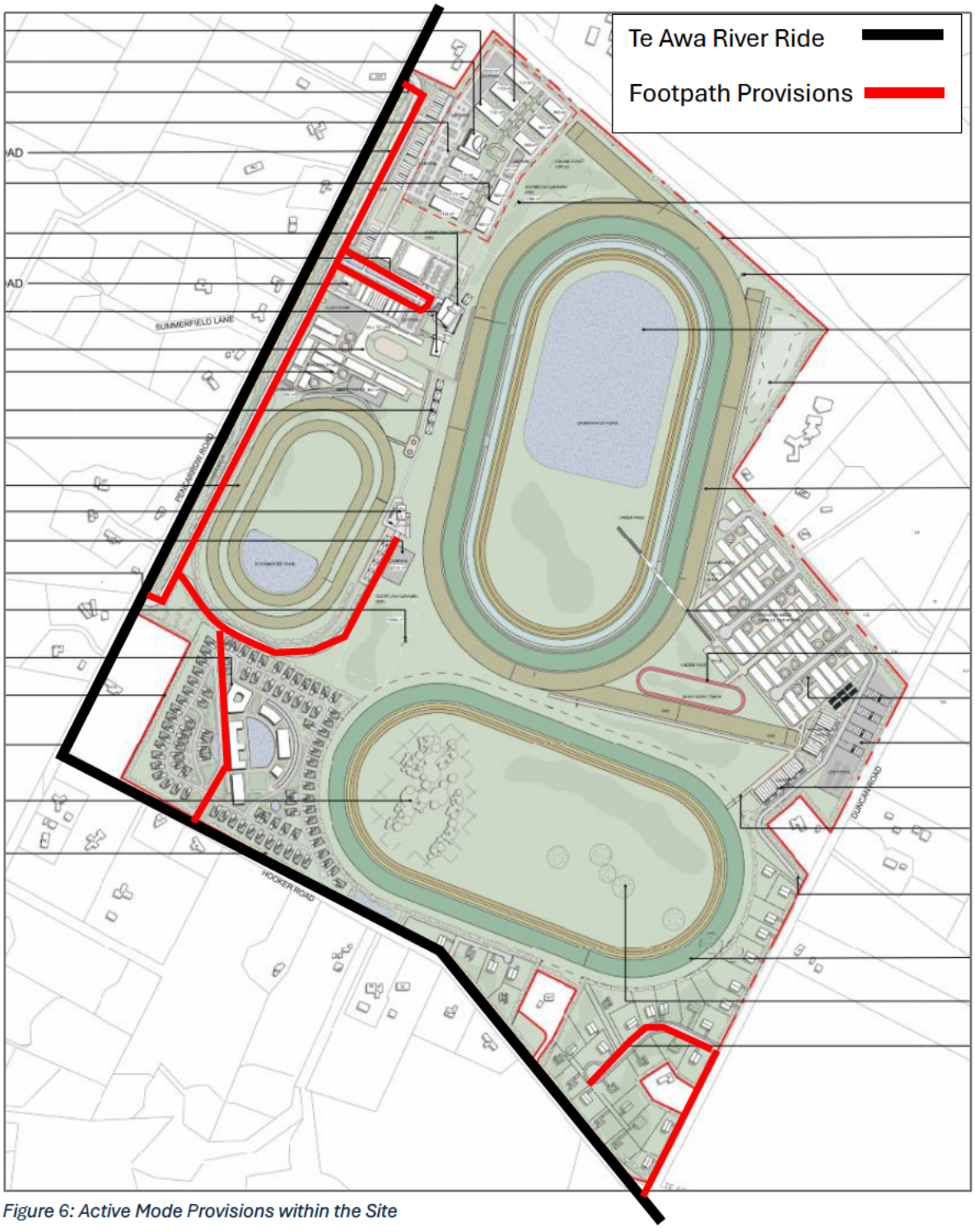


Figure 6: Active Mode Provisions within the Site

6.5 Road Safety

A review of NZTA Crash Analysis System (CAS) data and a wider risk assessment has been undertaken for all reported crashes that have occurred in the vicinity of the Site along the

Pencarrow Road, Tamahere Drive, Hooker Road, and Duncan Road corridors. Within the search area, the following intersections (50m radius) were also included:

- Tauwhare Road / Airport Road / SH1 southbound off-ramp;
- Tamahere Drive / Airport Road / SH1 northbound on-ramp;
- Airport Road / Pencarrow Road;
- Hooker Road / Pencarrow Road;
- Duncan Road/Hooker Road; and
- Cambridge Road / Hooker Road / Racecourse Road.

The extent of the safety assessment area is shown in **Figure 7** below, and the crash history has been analysed for the entire route and also the individual intersections. A detailed analysis was completed for the reported serious and minor injury crashes.

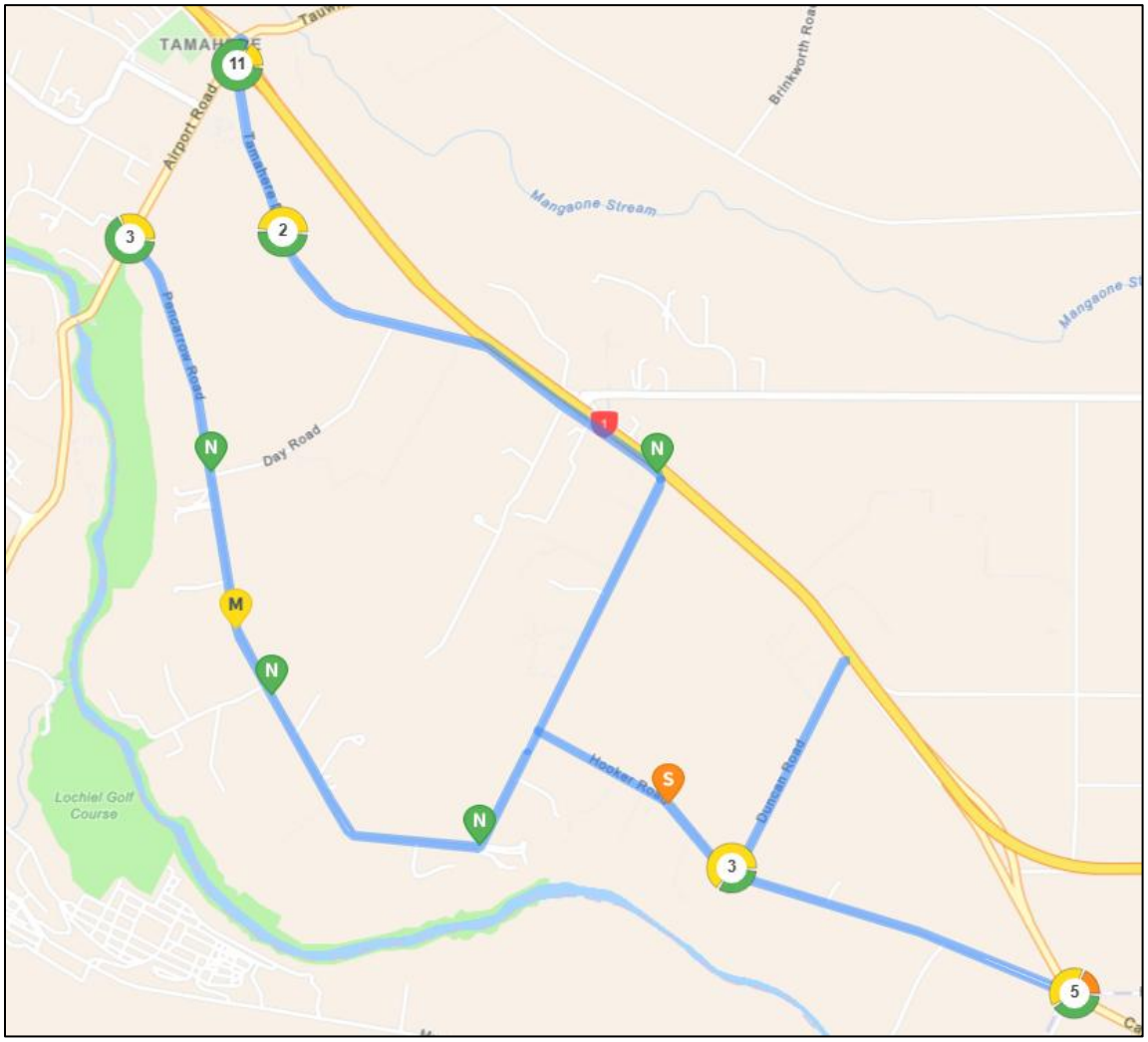


Figure 7: CAS Search Data

The search includes all crashes over the last five-year period from 2021 to 2025 (including all available results from 2026). A total of 30 crashes were reported within the study area. This includes two serious injury crashes, nine minor injury crashes, and 19 non-injury crashes. As shown in **Table 3** below, a large proportion of these crashes (63%) occurred at intersections:

Table 3: Intersection Crash Summary

Intersection	Number of crashes by severity				Total
	Fatal	Serious	Minor	Non inj.	
Tauwhare Rd / Airport Rd / SH1 southbound off-ramp	0	0	0	3	3
Tamahere Dr / Airport Rd / SH1 northbound on-ramp	0	0	0	4	4
Tamahere Dr / SH1 northbound off-ramp	0	0	2	1	3
Airport Rd / Pencarrow Rd	0	0	1	2	3
Duncan Rd / Hooker Rd	0	0	0	1	1
Cambridge Rd / Hooker Rd / Racecourse Rd	0	1	2	2	5
Total	0	1	5	13	19

One of the two serious injury crashes occurred at the Cambridge Road / Hooker Road / Racecourse Road intersection and one along the Hooker Road mid-block. As per the crash report on the CAS database, the crash at the intersection occurred due to a driver waiting along Hooker Road at the intersection, and failing to identify an approaching northbound vehicle before attempting to turn onto Cambridge Road. The second serious injury crash involved a vehicle erratically travelling northbound (swerving across lanes) and having a head-on collision with a southbound vehicle at the curve outside #82 Hooker Road.

The nine minor injury crashes are spread across the CAS search area and are briefly described below:

- Tamahere Drive / SH1 northbound off-ramp: Driver on the SH1 off-ramp failed to give-way to northbound vehicle along Tamahere Drive.
- Tamahere Drive / SH1 northbound off-ramp: Driver travelling south along Tamahere Drive has lost control of their vehicle due to a medical event.
- Tamahere Drive midblock: Driver exiting the Tamahere Country Club vehicle crossing failed to identify an approaching northbound cyclist resulting in a collision.
- Pencarrow Road / Airport Road: It is understood this crash has been incorrectly geolocated on the CAS system as it actually occurred at the Airport Road / Narrows Lane intersection.
- Pencarrow Road midblock: Driver travelling northbound along Pencarrow Road lost control of their vehicle on a slight right hand bend. Driver was speeding and believed to be under the influence of alcohol.

- Hooker Road midblock: Driver travelling northbound along Hooker Road swerved to avoid a cat resulting in loss of control and the truck rolling onto its side.
- Hooker Road midblock: Driver travelling east along Hooker Road attempted to overtake a slower leading vehicle and lost control while merging back into the lane.
- Hooker Road / Cambridge Road / Racecourse Road: Driver travelling east along Hooker Road attempting to turn right onto Cambridge Road failed to identify an approaching vehicle and give way.
- Hooker Road / Cambridge Road / Racecourse Road: Driver travelling west along Racecourse Road failed to slow down or give way at the intersection. Driver was speeding and under the influence of alcohol.

As outlined above most of serious and minor injury crashes have occurred primarily due to driver error, and no crashes involved the subject Site. No common crash trends or factors have been identified across the search area.

The NZTA MegaMaps database has also been used to identify both the Personal and Collective risk ratings for the roads included in the CAS search area as outlined above.

- Collective Risk is the measure of how likely a crash is to happen along a given stretch of road network. It is effectively a measure of the number of deaths and serious injuries that can be expected at a site over the next analysis period (typically five years).
- Personal risk related to the chance that if a crash does occur that it involves a given individual. It is not unusual to see higher personal risks on a road, particularly when there are low traffic numbers.

Table 4 below shows a summary of the MegaMaps Risk Ratings for surrounding roads.

Table 4: MegaMaps Collective and Personal Risk Ratings

Road	Location	Collective Risk	Personal Risk
Tamahere Dr	Day Rd to Pencarrow Rd	Low	Low
Tamahere Dr	Tamahere Interchange to Day Rd	Medium	Low Medium
Pencarrow Rd	Hooker Rd to Tamahere Rd	Low	Low
Pencarrow Rd	Hooker Rd to Day Rd	Low Medium	Medium
Pencarrow Rd	Day Rd to Airport Rd	Low	Low
Hooker Rd	Pencarrow Rd to Racecourse Rd	Low Medium	Medium High
Duncan Rd	-	Low	Low

The associated risk ratings of Low collective and personal risk ratings along Tamahere Drive (between Day Road to Pencarrow Road), Pencarrow Road (between Hooker Road to Tamahere Road, and between Day Road to Airport Road), and Duncan Road align with the observed crash record given there have been no injury crashes on these sections of these

corridors. The medium collective and low medium risk for Tamahere Drive (between Day Road to Tamahere Interchange) also aligns with the observed crash record given there have been four minor injury crashes along this section of the corridor.

The Low Medium collective and Medium personal risk along Pencarrow Road (between Day Road and Airport Road) does not align with the observed crash record given only one minor injury crash has occurred on this section of the corridor and according to the crash report, the driver was believed to be under the influence of alcohol at the time of the crash. The Low Medium Collective Risk along Hooker Road also does not align with the observed crash record given one severe, and two minor injury crashes have occurred along this corridor between Pencarrow Road and Duncan Road. Despite the Low medium, Medium and Medium high collective and personal risk ratings for some of these corridors, it is noted that no crashes involved the subject Site.

7 Future Land Use and Committed Transport Environment

7.1 Hamilton Southern Links

Hamilton Southern Links is a long-term strategic transport project intended to improve connections between SH1, SH3 and the western / southern Hamilton transport network. Earlier referral-stage work considered future scenarios with Southern Links because of its potential to change traffic distribution in the Tamahere area.

The current position is less certain. NZTA's August 2026 project update states that Southern Links has always been on a longer timeline and that, given current fiscal constraints, NZTA is slowing the next planning steps and will review these against future funding availability. The project remains identified as important, but its current status is investigation rather than committed delivery. This was confirmed in the meeting with NZTA on 23rd July 2026, where a NZTA representative confirmed that the Southern Links was now beyond the scope of this ITA due to uncertainty around funding and delivery timeframes.

Accordingly, this substantive ITA does not rely on Southern Links to mitigate or accommodate Project traffic. This is a conservative and appropriate approach because the Project's acceptability should not depend on infrastructure for which delivery timing and funding are uncertain.

7.2 Other Future Transport Changes

The Waikato Regional Land Transport Plan 2024-2054 provides the current long-term regional transport strategy and investment framework. The Waikato Regional Public Transport Plan 2022-2032 sets the current public transport priorities for the region, including improved connections between Hamilton and surrounding metropolitan urban centres. Neither document is treated in this ITA as committing a specific new public transport service to the Site.

During a consultation meeting with Waipa DC on 10th September 2026, it was stated that an upgrade to the Cambridge Road / Hooker Road / Racecourse Road staggered crossroads intersection was currently under consideration, although no designs had yet been published. As such, this report considers the effect of the development on the existing intersection layout, and consideration can be given to the updated design should it be published through this Fast Track process.

8 The Project and Transport Strategy

8.1 Overview

The Project will establish a comprehensive greenfield racing and equine precinct on approximately 164 ha of land at Pencarrow Road, Tamahere. The development is intended to consolidate a number of WTR's existing racing and training functions within a single purpose-built facility, together with complementary equine, commercial, residential and senior-living activities.

The Project is considerably broader than a conventional racecourse. In transport terms, it comprises a number of distinct activities with different operating hours and travel characteristics. These range from early-morning daily training activity and permanent employment through to residential and commercial activity, horse transport, bloodstock events and intermittent race meetings. The development has therefore been assessed as an integrated mixed-use precinct rather than by applying a single overall trip-generation rate.

The principal components and yields relevant to the transport assessment are summarised in **Table 5**.

Table 5: Project Components and Transport-Relevant Yields

Project Component	Proposed Activity / Yield	Transport Characteristics
Thoroughbred Racing Precinct	Purpose-built thoroughbred racing precinct incorporating the main racing track, associated warm-up / training facilities, race-day facilities, spectator and industry areas and supporting infrastructure.	Generates intermittent race-day spectator, staff, participant, service and horse-transport demand, in addition to regular operational activity.
Thoroughbred Training Precinct	The masterplan provides on-site stables and yards for up to 900 horses on-site (after 2045), with training tracks, slow-work tracks, horse circulation areas, float/trailer parking and supporting trainer facilities.	Predominantly early-morning activity. For transport modelling purposes the current operational scenario provides for 350 thoroughbred training personnel in the AM period and 40 in the PM period, together with service vehicles and regular employees.
Harness Racing and Training Precinct	Dedicated 1,000m harness track, harness stabling and associated training/racing facilities. The masterplan identifies approximately 3,800sqm of harness stables.	Generates training, horse-float, staff and intermittent race/event traffic. Harness race activity is separately represented in the event assumptions.
Bloodstock Precinct	Dedicated bloodstock sales and event precinct. The current masterplan identifies 11 bloodstock stable buildings, together with associated event / function space and supporting facilities.	Periodic high-attendance activity rather than conventional daily traffic generation. Assumed up to approximately 1,000 attendees.
Village Centre / Commercial and Equine Support Activities	Approximately 8,825sqm GFA: a mix of office, hospitality, bakery, convenience retail, medical and general retail activities.	Generates regular staff, customer, visitor and servicing movements throughout the day. Traffic is distributed between the principal Pencarrow Road accesses according to the location of the commercial GFA.
Senior Living Precinct	Approximately 90 single storey villas, 40 apartments and 180 bed care facility.	Conventional residential-type travel, via a dedicated access is proposed from Hooker Road.
Lifestyle Residential Precinct	34 lifestyle residential dwellings.	Generates conventional residential travel.
Regular Employment	In addition to trainers and activity-specific staff embodied within the commercial assumptions, a further 50 regular employees are assumed to be associated with the racing/training precinct.	Regular commuter movements, principally inbound during the morning and outbound during the afternoon.
Horse Servicing / Operational Traffic	Regular horse-related servicing, feed, waste, maintenance and other operational vehicle movements.	Includes a higher proportion of large vehicles and vehicles towing horse trailers than would be expected for a conventional development.
Modelled Race Events	Race-day scenarios comprising up to 1,500 attendees for harness or thoroughbred racing events , with the applicable peak-period arrival/departure proportions.	This scenario has been used to assess the effect of a substantive racing event coinciding with background and other development traffic.
Feature Events	Larger, infrequent racing or other feature events above the normal modelled event envelope.	These events are subject to event-specific traffic and parking management through an Event Traffic Management Plan.
Parking and Event Parking	Extensive permanent and overflow parking distributed throughout the precinct. The masterplan identifies three principal overflow parking areas accommodating approximately 2,030 vehicles, in addition to permanent car parks and dedicated float/trailer parking.	Enables event parking demand to be accommodated on-site and allocated between accesses according to the event type and operational traffic-management plan.

The Project therefore combines both regular daily activity and intermittent event activity. This distinction is important when considering its transport effects.

The regular operation of the Site will principally comprise early-morning thoroughbred and harness training, employees, commercial and equine-support activities, residents, servicing and horse movements. The assessment reflects the specialised nature of the training activity using operational information and survey information from WTR's existing facilities rather than treating the racing precinct as a generic recreational activity. The earlier referral assessment similarly identified training as occurring predominantly during the morning and derived vehicle occupancy and arrival/departure characteristics from surveys at the existing Cambridge facility.

The residential and commercial elements generate more conventional travel patterns.

The event component is inherently different. Race meetings and bloodstock events create concentrated but intermittent visitor demand, and the scale and timing of that demand varies considerably between events. The transport assessment therefore distinguishes between smaller events, the race-day scenarios incorporated into the network modelling, and larger feature events. The latter will occur infrequently and will be actively managed through event-specific measures rather than requiring the surrounding permanent road network to be designed around the largest conceivable event.

A key purpose of the Project is also the consolidation of existing Waikato racing and training activities. The referral material identifies the intention to consolidate the Te Rapa, Waipa and Cambridge thoroughbred facilities and the Cambridge harness facility within the new hub. Accordingly, while the Site will generate substantial activity locally, little of the racing, training and horse-transport activity represents wholly new travel at a regional level.

8.2 Overall Access Strategy

As shown in **Figure 8**, the different Project components are arranged around the racing and training facilities so that activities with different transport requirements can, as far as practicable, be separated.



Figure 8: Proposed Masterplan

As shown in **Figure 8** above, the thoroughbred racing and principal public/event facilities occupy the central and western parts of the Site, with the main public and commercial access functions concentrated toward Pencarrow Road. The harness and bloodstock facilities form separate identifiable precincts, while trainer and horse-related operational activity is principally connected to Duncan Road. The senior-living precinct has a dedicated access from Hooker Road, and the lifestyle residential development is provided with separate residential access arrangements.

This arrangement is important from a transport perspective because it avoids requiring all Project traffic to use a single entrance. In particular, it enables:

- spectator and visitor traffic to be directed to the principal event parking areas;
- commercial and village-centre traffic to use the Pencarrow Road accesses;
- trainer, horse-float and operational traffic to be concentrated toward the Duncan Road trainer access;
- senior-living traffic to use its dedicated Hooker Road access; and
- residential traffic to use the access arrangements serving the relevant residential precinct.

The Site also provides extensive internal circulation, parking and horse-movement infrastructure. The current masterplan identifies dedicated float and trailer parking, internal horse routes, slow-work tracks, permanent car parks and substantial overflow parking areas. The intention is therefore for the operational and event demands of the Project to be accommodated predominantly within the Site, rather than relying on parking or circulation on the surrounding rural road network.

8.3 Active Modes and Public Transport Integration

The Project will provide an internal walking and cycling network that connects the principal activity areas and residential components. The design prioritises low-speed internal environments, direct pedestrian routes between parking and event destinations, and safe connections to Te Awa River Ride.

The Pencarrow Road and Hooker Road access designs are required to cross Te Awa River Ride. The design preserves route continuity and provides clear intervisibility and a legible priority arrangement. These crossings are not treated as ordinary rural vehicle crossings. At each access, the shared path is diverted further behind the vehicle limit line than its typical alignment, providing separation from the intersection of the access and the road, thereby allowing cyclists and drivers to identify and respond to the crossing in advance.

The points where the shared path crosses an access are clearly defined, with good intervisibility maintained between path users and approaching vehicles.

Where the realigned shared path extends onto private property, it is assumed that maintenance will continue to be undertaken by WDC through the existing maintenance arrangements.

Public transport accessibility to the Site is currently limited. The Project's event strategy nevertheless provides for buses, coaches, shuttles, taxis and rideshare pick-up / drop-off, so larger events can reduce reliance on single-occupant vehicle travel.

8.4 Proposed Road Corridor Upgrades

As part of the proposed development, upgrades are proposed to improve safety and operation of the roading network in vicinity of the Site. This includes imposing reduced speed limits of 80km/h or less along Tamahere Drive, Pencarrow Road, Hooker Road and Duncan Road. Given the large scale of the commercial development along Pencarrow Road, and the retirement village access along Hooker Road, and the higher traffic volumes expected to travel along these roads, the reduced speed limits will improve safety and reduce likelihood of crashes. Given these speed changes are imminent, and will be in place prior to development of the subject Site, all intersections / vehicle crossing designs and District Plan compliance checks have been completed for a posted speed limit of 80km/h.

It is noted that simply introducing reduced speed limits without installation of any physical speed calming measures to enforce these reduced limits is not effective. As such, it is proposed to provide gateway treatments along Duncan Road, Hooker Road, Pencarrow Road and Tamahere Drive, to ensure approaching drivers are aware of the reduced speed limits and adjust their operating speed accordingly. While the design and location of these gateway treatments is not yet confirmed, this can be finalised as part of subsequent design stages and in co-ordination with WDC.

Given the reasonably high demand for right-turn in manoeuvres into the Site, the accessdesigns include provision of right-turn bays on the frontage roads for both accesses off Pencarrow Road, and the access serving the retirement village off Hooker Road.

A right-turn bay will also be designed and constructed at the Duncan Road / Hooker Road intersection, prior to the training precinct becoming operational. While the SIDRA modelling showed an excellent level of service (LOS A/B), and no queuing at this intersection (see Attachment 2), provision for a right-turn bay is considered to be necessary

in the future once the training precinct is operational as it will likely result in a high number of right-turn in manoeuvres for trainers visiting the Site from Cambridge via Hooker Road. This is discussed further in the traffic modelling section later in this report.

9 Transport Design Report

9.1 Masterplan, Road Hierarchy and Site Access

The proposed masterplan showing the different road types is provided below as **Figure 9**.

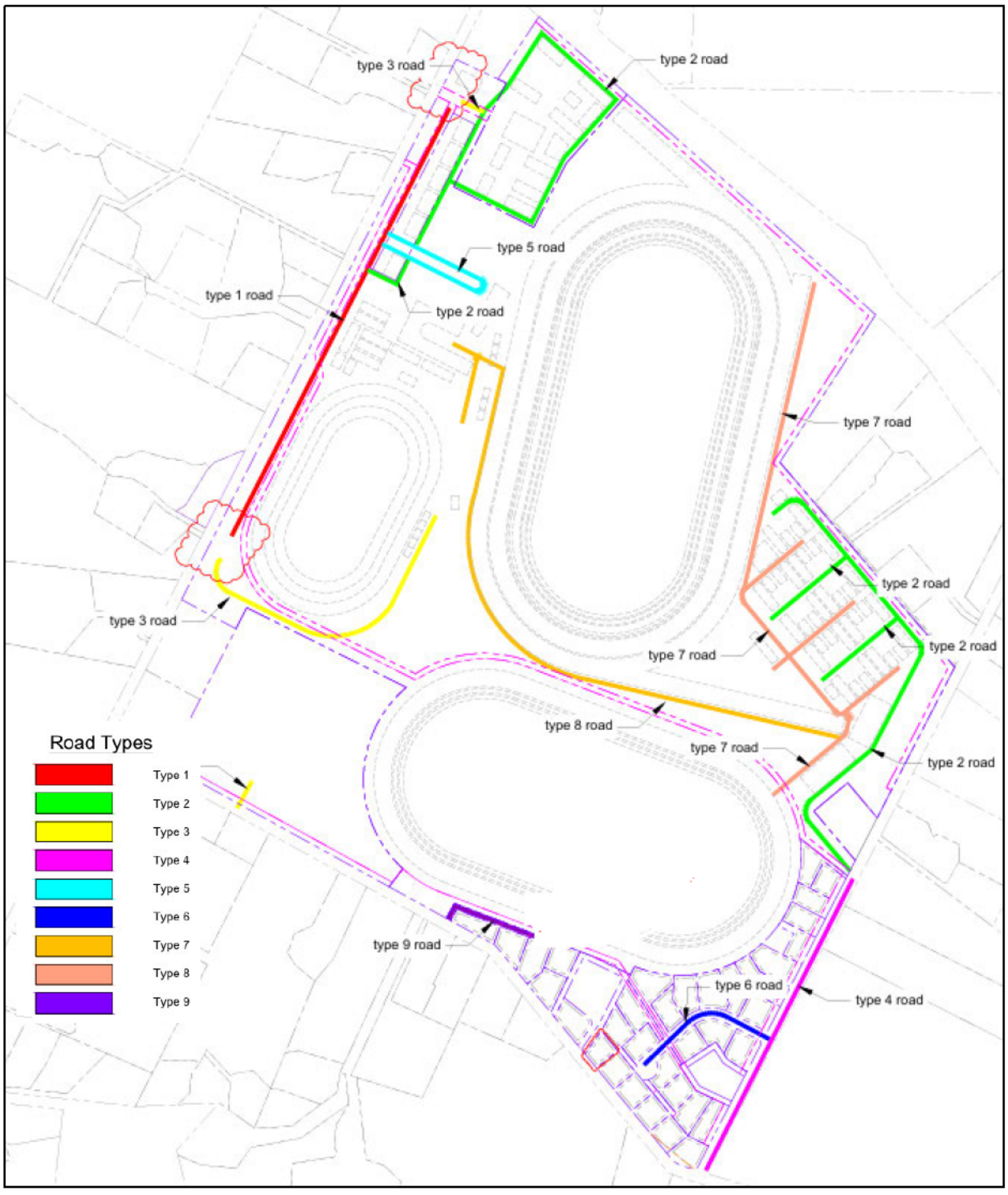


Figure 9: Masterplan with Road Typologies

As shown in **Figure 9**, it is proposed to provide several internal road corridors within the development, and also one publicly vested road corridor serving the proposed residential lifestyle lots in the south-eastern corner of the Site (Type 6 road, as circled in red). The

internal road corridors will provide access onto Pencarrow Road, Hooker Road, and Duncan Road along the western, southern and eastern sides of the subject Site.

- Type 1: Primary road corridor with footpath provision on one side, extending along the western boundary of the Site connecting onto Pencarrow road at its northern and southern ends. This road corridor provides access to other internal road corridors within the Site.
- Type 2: Road corridor with no footpath provision as it provides access to the Bloodstock precinct and the Trainers Zone at its western and eastern ends respectively.
- Type 3: Two-way road corridor with provisions for a footpath on one side, providing access to the Harness Events Building and associated carpark.
- Type 4: Upgraded Duncan Road corridor along the eastern boundary of the subject Site with provisions for a footpath on the western side of the corridor.
- Type 5: Two-way road corridor serving as the main Thoroughbred Boulevard entry consisting of a large water feature between the two lanes, and footpath provisions on both sides of the road corridor.
- Type 6: Road corridor with provisions for footpaths on both sides serving the proposed residential lots. This corridor will connect to Duncan Road at its eastern end and will be publicly vested to Waikato District Council, hence the road corridor has been designed to comply with the Regional Infrastructure Technical Specifications (RITS) v2.
- Type 7: This will exist as a horse race carriageway, and will primarily only be used by horses and trainers moving within the Site.
- Type 8: Same as type 7 with a reduced width.
- Type 9: Privately owned right-of-way serving the residential dwellings off Hooker Road.

All road corridors proposed within the Site boundary except the Type 6 corridor will remain privately owned. Given the various uses within the Site (residential, commercial/retail, horse racing etc.) the precinct's network has been designed to support the movement and interaction of horses, trainers, pedestrians, horse floats, service vehicles, and buses. The detailed cross-section of all road corridors, proposed cul-de-sac dimensions and vehicle swept-path analysis is discussed further below, and illustrated in Attachment 1: Roading Drawings.

9.2 Active Modes

The subject Site has been designed with careful consideration to the Te Awa River Ride which extends along the western and southern boundaries of the subject Site along Pencarrow Road and Hooker Road respectively. As such, vehicle crossings onto these two road corridors have been minimised, and those proposed bring the shared path crossing points slightly within the Site to reduce conflicts. White line markings will be added to highlight the alignment of the shared path across the accesses during detailed design. This is discussed further below.

Duncan Road does not currently provide any active mode facilities. It is proposed to upgrade this road corridor to provide a footpath along the western side of the road between the intersections with Hooker Road and the new public vested road corridor at its southern and northern ends respectively. This is further discussed below.

A footpath connection will also be provided between the senior living precinct located at the south-western corner of the Site, the Harness racing precinct, and the retail/commercial development located along the western boundary. This provides a practical and feasible alternative to what would otherwise be short private vehicle trips between the retail development and the dwellings within the senior living precinct site.

Figure 6 above shows the dedicated cycle and pedestrian facilities proposed within the Site, and also the existing and proposed active mode facilities along the surrounding road corridors.

9.3 Internal Road Cross Sections

Each of the roads within the boundaries of the Site will remain privately owned roads / accessways, except for the Type 6 Road corridor in the south-eastern corner of the Site. As such, while these roads have been designed with some reference to *Table 13 – Access and Road Standards (GRUZ – General rural zone and RLZ – Rural lifestyle zone)* from Part 2, section *TRPT – Transportation* of the Waikato District Plan – Operative in Part (Transport Section of the District Plan), referred to as "District Plan Table 13" throughout this report, compliance has not always been achieved as a greater focus has been placed on the expected usage demand of the roads.

Road cross sections (and other road design drawings) are shown in Attachment 1 of this report (Sheets C-350 to C-352). A detailed summary of the cross-section of each of the internal roads is provided below.

Type 1 Road

The Type 1 road, cross section shown in Attachment 1, Sheet C350, is proposed to be a two-way road corridor comprising two 3.0 m wide traffic lanes (one lane in each direction); one 1.8 m wide footpath with crossing facilities provided at anticipated pedestrian crossing desire lines, which also serve to channel pedestrian movements towards predictable crossing locations. Two 1.5m wide service corridors are provided on both sides of the corridor, and a 5m swale is also provided on the western side of this corridor separating the road from the parallel Pencarrow Road corridor.

District Plan Table 13 requires an accessway serving between 4 to 8 allotments or activities to provide a minimum right-of-way (ROW) reserve width of 10m consisting of a 5m trafficable carriageway / seal width. The proposed design exceeds these requirements outlined in the District Plan.

Type 2 Road

The Type 2 road, cross section shown in Attachment 1, Sheet C-350, is proposed to be a two-way road corridor with a total 6m seal width, 1.5m service corridors on both sides of the corridor, and no pedestrian provision. This road corridor serves the trainers zone accessed off Duncan Road and the Bloodstock precinct off the Type 1 road. Both these zones are not expected to be accessible by general public, and will likely only be accessed by trainers and their horses. As such, the road corridor will have an advisory 10km/h speed limit to ensure safe trainer and horse movements occur within the 6m wide lane. This is reflective and consistent with infrastructure at other horse racing precincts including the Karaka bloodstock venue.

District Plan Table 13 requires an accessway serving between 4 to 8 allotments or activities to provide a minimum ROW reserve width of 10m consisting of a 5m trafficable carriageway/seal width. The proposed design exceeds the 5m trafficable carriageway, but only provides 9m ROW reserve width.

Type 3 Road

The Type 3 road, cross section in Attachment 1, Sheet C-350 Error! Reference source not found. , is proposed to be a two-way road corridor comprising two 3.0 m wide traffic lanes (one lane in each direction), a 1.8 m wide footpath on the eastern side of the corridor and 1.5m service corridors on either side. This road corridor will be provided at the entrance to the senior village precinct off Hooker Road and off the southern vehicle crossing onto Pencarrow Road. A footpath has been provided along this road corridor as it will connect to the footpath within the residential precinct accessways, and also the footpath provided on the easter side of the Type 1 road.

District Plan Table 13 requires an accessway serving between 4 to 8 allotments or activities to provide a minimum ROW reserve width of 10m consisting of a 5m trafficable carriageway/seal width. The proposed design exceeds these requirements outlined in the District Plan.

Type 4 Road (Duncan Road)

The Type 4 road, cross-section is shown in Attachment 1, Sheet C-351. It is proposed to upgrade the section of Duncan Road fronting the Site to provide a 6.5m trafficable carriageway consisting of 3.25m wide lanes in both directions, and an additional 0.5m sealed shoulder and 0.5m unsealed shoulder on both sides of the carriageway. A 1.8m wide footpath will also be provided on the western side of the corridor to facilitate pedestrian movements along the road frontage of the subject Site. Additionally, the western side of the road corridor will also provide a 4m wide front berm between the footpath and road corridor, a 1.5m wide service corridor berm, and a 5m swale between the footpath and the road corridor boundary.

District Plan Table 13 requires a local road serving more than 8 lots to provide a minimum ROW reserve width of 20m consisting of a 6m trafficable carriageway/seal width and no specific requirement for footpaths or shared paths (subject to specific design). The proposed design exceeds these requirements outlined in the District Plan and additionally also provides a footpath on the western side of the corridor.

Type 5 Road

The Type 5 road, cross section shown in Attachment 1, Sheet C-351, is proposed to serve as the main thoroughbred boulevard entry for the main function and events building and the associated carpark. The road corridor exists as two 4m wide one-way traffic lanes separated by a 15m wide water feature/planting along the middle. Footpaths of 1.8m in width are provided along both sides of the road corridor to facilitate pedestrian movements between the Type 1 road and the main events building. Service corridors of 1.5m in width are also provided on either side of the footpaths on both sides of the corridor.

District Plan Table 13 requires an accessway serving between 4 to 8 allotments or activities to provide a minimum ROW reserve width of 10m consisting of a 5m trafficable carriageway/seal width. The proposed design significantly exceeds these requirements and also provides footpaths on both sides of the corridor.

Type 6 Road

The Type 6 road, cross section shown in Attachment 1, Sheet C-351, is proposed to be a public vested road corridor serving the lifestyle residential dwellings in the south-eastern corner of the Site. The road cross-section consists of a 6m wide trafficable carriageway, 3.2m wide front berms/service corridors, 1.8m wide footpath, and a 1.5m wide rear berm/service corridor on both sides. The road corridor will connect to Duncan Road at its eastern terminate in a cul-de-sac at its western end , . Once vested, this will be classified as a local road within the District Plan.

District Plan Table 13 requires a local road serving more than 8 lots to provide a minimum ROW reserve width of 20m consisting of a 6m trafficable carriageway/seal width, with no specific requirement for footpaths or shared paths (subject to specific design). The District Plan also requires the road corridor to provide a turning head to accommodate an 8m rigid truck. As shown in Attachment 1, Sheet C-324, the proposed design meets these requirements outlined in the District Plan and additionally provides a footpath on both sides of the corridor.

Type 7 & 8 Roads

The Type 7 and 8 road corridors, cross sections shown in Attachment 1, Sheet C-352, are designed to primarily be used by horses and trainers and will rarely be accessed by motor vehicles, hence these corridors have been designed to suit such specific needs. The only difference between Type 7 and 8 road corridors is the proposed width of 6m and 4m respectively.

Type 9 Road

The Type 9 road, cross section shown in Attachment 1, Sheet C-352, is a private ROW corridor with a legal width of 9m, consisting of a 4m wide trafficable lane and minimum 2m wide service corridor on both sides of the accessway. This corridor will connect to Hooker Road and serve the proposed residential lots in the southern portion of the Site. No footpath provision is provided along this ROW.

District Plan Table 13 requires an accessway serving between 4 to 8 allotments or activities to provide a minimum ROW reserve width of 10m consisting of a 5m trafficable carriageway/seal width. The proposed design does not meet these requirements as it only provides a 5m carriageway and 9m total width.

9.4 Intersections and Vehicle Crossings

The proposal includes five major vehicle access points onto the public road network: two onto Pencarrow Road (western boundary), one onto Hooker Road (southern boundary), and two onto Duncan Road (eastern boundary) as shown in **Figure 10** below. A few additional minor vehicle crossings are also provided on Hooker Road and Duncan Road to serve the JOAL and individual lots. The vehicle crossings serving individual lots are not discussed in detail in this section given they only serve one dwelling.

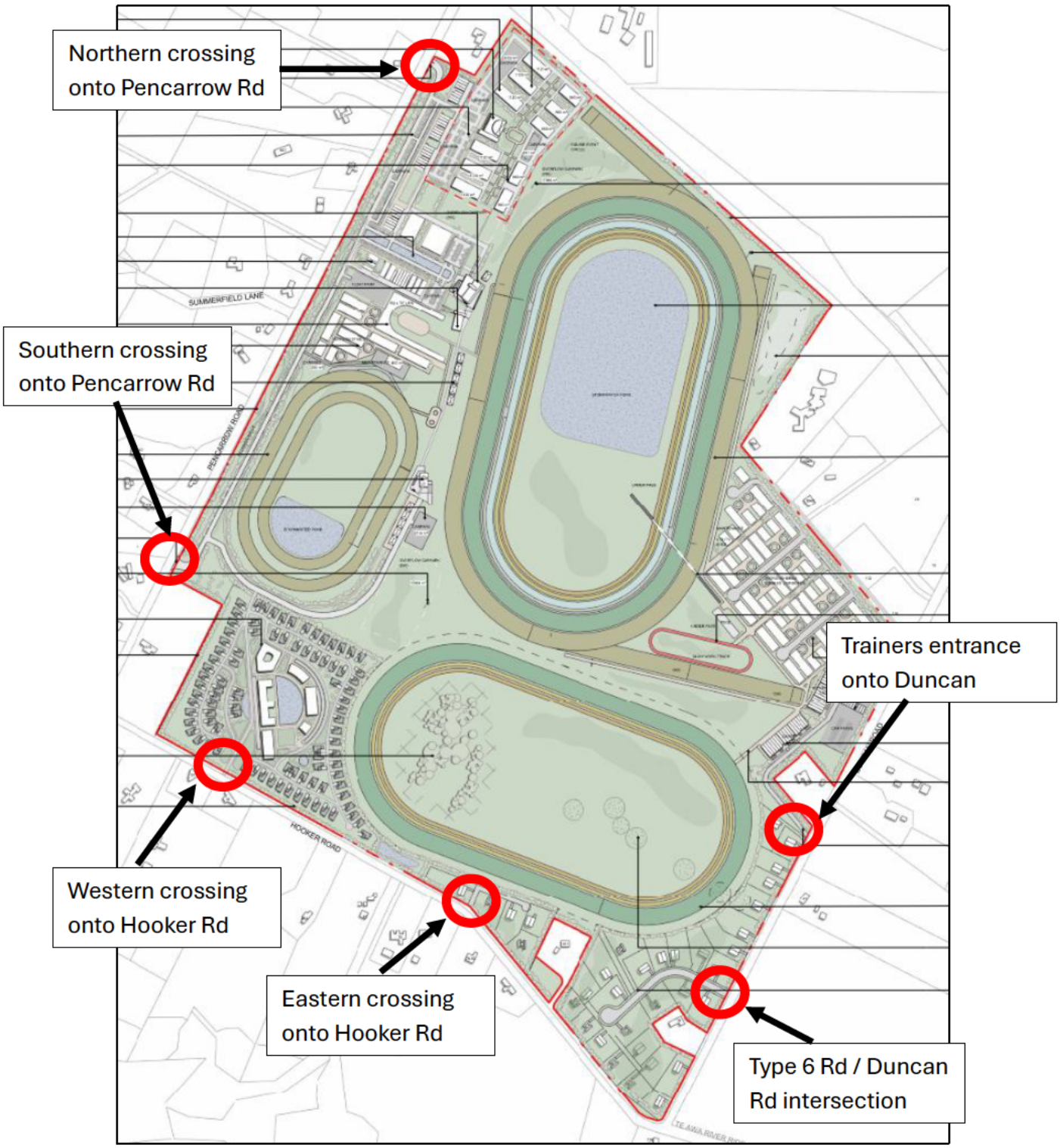


Figure 10: Vehicle Crossings Overview

Site Intersections

Northern Vehicle Crossing onto Pencarrow Road

The northern vehicle crossing onto Pencarrow Road primarily serves the bloodstock precinct/stables, the large function spaces and associated carparks, horse racing track, and the commercial buildings facing Pencarrow Road. As shown in Attachment 1, Sheets C-320 and C-320A, it is proposed to provide a right-turn bay along Pencarrow Road to allow vehicles to safely refuge in the flush median as they wait to turn right into the Site. This minimises disruption for through vehicles travelling northbound along Pencarrow Road. The vehicle crossing has also been designed with two exit lanes (one each for the LT and RT movements). While the design shown in Attachment 1 shows two outbound lanes and one inbound lane, it is proposed that this vehicle crossing will initially be constructed with one inbound and outbound lane only, with future provision to add an additional outbound lane. The second outbound lane is not required for 'normal' operation, but a second lane may eventually be provided to ease congestion and allow for easier exiting movements on the major event days, although these will only occur a few times each year. A shared path crossing facility is also provided across the vehicle crossing to assist users of the Te Awa River Ride, with the crossing point moved somewhat back from the give-way line, as described further in Section 9.2 of this report.

Southern Vehicle Crossing onto Pencarrow Road

The southern vehicle crossing onto Pencarrow Road serves the Harness track, the main Harness events building, Harness trainers area and the associated carparks. As shown in Attachment 1, Sheet C-321 and C-321A, the proposed design of this vehicle crossing is very similar to that of the northern vehicle crossing onto Pencarrow Road including a right-turn bay for motorists travelling north along Pencarrow Road, two exit lanes, and a diverted shared path crossing facility. Similar to the above, this vehicle crossing will also be constructed with one inbound and outbound lane, with provision for an additional outbound lane to be constructed at a later date.

Western Vehicle Crossing onto Hooker Road

The western vehicle crossing onto Hooker Road provides access to the senior living residential precinct. As shown in Attachment 1, Sheet C-322 the proposed design of this vehicle crossing is similar to that of the vehicle crossings onto Pencarrow Road including a RTB to facilitate right-turn movements for motorists travelling westbound along Hooker Road, and a diverted shared path crossing facility. The main difference being that this proposed vehicle crossing does not have provision for an additional exiting lane onto Hooker Road as it only serves the retirement village and will not experience the higher

traffic volumes on the larger race days that the accesses to Pencarrow Road will accommodate.

Southern Intersection with Duncan Road

The southern intersection of the Type 6 road with Duncan Road, which provides access to several residential lots in the south-eastern corner of the Site, is shown in Attachment 1, Sheet C-323. This intersection has been designed as per RITS v2 standards and is typical for an intersection between two local roads.

Northern Vehicle Crossing onto Duncan Road

The northern vehicle crossing onto Duncan Road, which serves the Trainers Zone and provides access to the trainer's carpark, backtrack and the borrow sites, is shown in Attachment 1, Sheet C-325. This vehicle crossing has been designed to accommodate simultaneous inbound/outbound movement of a large rigid truck which is the largest design vehicle expected to use this vehicle crossing. It is highly unlikely that a large rigid truck will be entering and exiting the vehicle crossing at the same time given flows are expected to be tidal (mostly inbound at the start of training time, and outbound at the end of training time).

Existing Intersections

Duncan Road / Hooker Road

Only one change is proposed to the existing intersections in the vicinity of the subject Site. It is proposed to consider a right-turn bay at the Duncan Road / Hooker Road intersection to facilitate the increased demand for right-turn movements from trainers travelling to the Site daily. A large majority of these trainers are expected to travel from Cambridge, hence will turn right via the Hooker Road/Duncan Road intersection. Development of the Site will be staged so that the racing and bloodstock precinct is constructed earlier than the training precinct. Given that the right-turn demand at this intersection will only occur once the training precinct is operational, it is proposed to consider this right-turn bay at a later date, prior to the training precinct becoming operational.

Pencarrow Road / Tamahere Road

Although not technically an intersection, Pencarrow Road transitions into Tamahere Road through an approximately 45-degree horizontal bend near the Site. The bend is relatively pronounced and is currently delineated by chevron signage, together with an advisory speed of 25km/h. The existing alignment is proposed to remain unchanged as part of the Project. It is acknowledged that concerns regarding the safety of the bend have been raised by local residents. However, the recorded crash history does not indicate a pattern of crashes at this location, with one reported crash occurring at the bend during the most

recent five-year period. While any recorded crash is relevant from a safety perspective, a single crash does not in itself indicate a recurring deficiency that would warrant reconstruction of the existing road alignment.

The bend is also an established and readily identifiable feature of the road environment. Its geometry, chevron delineation and 25km/h advisory speed provide approaching drivers with clear advance information that a substantial reduction in speed is required. Importantly, the Project is expected to be accompanied by a reduction in the posted speed limits on the roads surrounding the Site to at least 80km/h. While the timing and final form of any speed limit change is a matter for the Road Controlling Authority, a reduction from the existing higher speed rural environment would reduce the speed differential between the adjoining road sections and the 25 km/h advisory bend, and would be expected to result in lower approach speeds generally.

The Project does not require the bend to perform a new access or intersection function, nor is any Site access proposed at the bend itself. The Project traffic will therefore encounter the same clearly defined geometric constraint as existing road users and will be required to negotiate it at an appropriate speed. On the available crash history, there is no evidence of a systemic safety problem that would justify substantial realignment of the existing public road as mitigation for the Project. Retention of the existing alignment is therefore considered appropriate, particularly having regard to the existing advisory speed and delineation and the anticipated reduction in the surrounding posted speed environment.

Cambridge Road / Hooker Road / Racecourse Road

The Cambridge Road / Hooker Road / Racecourse Road intersection is currently a staggered cross-roads intersection. It is understood that Waipa District Council and Waikato District Council are currently considering some upgrades to improve the safety of this intersection. Given there is currently some uncertainty around the future design and expected traffic volumes at this intersection, the completed traffic modelling has been based on the current intersection layout, however if there are any changes to the layout, these can be considered through this Fast Track process. All other intersections in vicinity of the Site are expected to remain as-is.

9.5 Individual Lot Access

Separation Distances

Table 1 and Figure 6 from the Transport Section of the District Plan outline specific separation distances between adjacent vehicle crossings, vehicle crossings to intersections and adjacent intersections on the road corridor. As discussed in Section 8.4

of this report, it is understood that all road corridors adjacent to the Site boundaries (Pencarrow Road, Hooker Road, and Duncan Road) will have a reduced speed limit of 80km/h or lower prior to the Site becoming operational. None of these road corridors are mentioned in *Table 5 – Road Hierarchy list* in the Transport Section of the District Plan, which outlines all the national, regional arterial, arterial and collector routes within the Waikato District. As such, these roads are assumed to be classified as Local roads within the District Plan.

Vehicle crossings onto Local roads with a posted speed limit of 80km/h should achieve minimum separation of 80m from the nearest intersection and any adjacent vehicle crossing on the same side of the road corridor. Vehicle crossings onto the side road should achieve minimum 60m separation from the major road/side road intersection. Road 6 (proposed to be vested as a public corridor) will have a posted speed limit of 50km/h, hence all vehicle crossings are required to have minimum 20m separation from the major/minor road intersection, and 15m separation between adjacent vehicle crossings. **Table 6** below assesses the proposed vehicle crossings against these requirements.

Table 6: Vehicle Crossing Separation Requirements

Vehicle Crossing	Separation from nearest vehicle crossing on same side of the road	Separation from nearest intersection
Northern Pencarrow Rd entrance	160m	800m+
Southern Pencarrow Rd entrance	88m	250m+
Western Hooker Rd entrance	500m+	250m+
Eastern ROW onto Hooker Rd	280m+	600m+
Individual vehicle crossings on Hooker Rd	81m	325m+
Individual vehicle crossings onto Duncan Rd	Varies from 10m+	45m
Trainers entrance onto Duncan Rd	20m	600m+
Dwellings onto Road 6	10m	50m+

As shown in Table 6 above, all proposed vehicle crossings onto Pencarrow Road and Hooker Road comply with the minimum separation requirements by achieving the minimum required separation distance from adjacent vehicle crossings or intersections. However, some of the 10 proposed vehicle crossings onto Duncan Road, and the vehicle crossings along Road 6 do not comply with minimum separation requirements.

Duncan Road is a no-exit road serving a few dwellings, and has very low average daily traffic of 172vpd (as of November 2025 - data from Mobile Roads). Along the road frontage of the subject Site, Duncan Road has a straight alignment and relatively flat topography ensuring excellent visibility in all directions. It should be noted that the separation non-compliance is frequently observed for residential dwellings fronting onto local roads with an 80km/h to 100km/h posted speed limit, as is the case for several existing dwellings on both Hooker

Road and Pencarrow Road (both of which have considerably higher daily traffic volumes). As such, this non-compliance is unlikely to have a material effect on the safe and efficient movement of vehicles along the road corridor.

Road 6 is also proposed to be a no-exit road, only serving a small number of dwellings. The road corridor will have very low daily traffic volumes, provides a curve in the alignment, a channelised kerb and active mode facilities (footpath) on both sides of the corridor, which is similar to that of an urban environment rather than a rural one. As such, vehicle operating speeds are also expected to be lower than the posted speed limit of 50km/h. Given the lower operating speeds, with vehicle crossing separation being consistent with an urban environment, the non-compliant separation distances for the few vehicle crossings are unlikely to have any adverse effect on the safe and efficient operation of the road corridor.

Minimum sight distances

Table 2 and Figure 8 from the Transport Section of the District Plan outlines minimum sight distance requirements for vehicle crossings. Vehicle crossings onto road corridors with a design speed of 90km/h (posted speed of 80km/h) and design speed of 60km/h (posted speed of 50km/h) are required to achieve a minimum sight distance of 215m and 115m respectively. **Table 7** below assesses the proposed vehicle crossings against the minimum sight distance requirements.

Table 7: Minimum Sight Distance Requirements

Vehicle Crossing	Minimum sight distance
Northern Pencarrow Rd entrance	175m in northern direction. 300m+ in southern direction.
Southern Pencarrow Rd entrance	250m+ in both directions.
Western Hooker Rd entrance	250m+ in both directions.
Eastern ROW onto Hooker Rd	240m+ in both directions.
Individual vehicle crossings onto Hooker Rd	190m in western direction. 250m+ in eastern direction
Residential dwellings onto Duncan Rd	Minimum 60m in southern direction (for southernmost dwelling). 250m+ in northern direction.
Trainers entrance	250m+ in both directions.
Dwellings onto Road 6	55m in some directions for some crossings.

As shown in Table 7, the southern vehicle crossing onto Pencarrow road, western and eastern ROW onto Hooker Road, and the trainers' entrance onto Duncan Road comply with the minimum sight distance requirements.

The northern vehicle crossing onto Pencarrow Road only provides 175m visibility in the northern direction due to the road curvature where Tamahere Drive meets Pencarrow Road. This curve is marked with a 35km/h curve speed advisory sign, hence vehicles are expected to be travelling significantly slower than the 80km/h posted speed limit. As per Table 2 in

the Transport Section of the District Plan, a design speed of 70km/h only requires a minimum sight distance of 150m. Vehicles travelling towards the Site will be travelling significantly slower than the 70km/h threshold, and the available sight distance exceeds 150m. As such, while the requirements of the District Plan are not met, the non-compliance is unlikely to adversely affect safe operation of the vehicle crossing or road corridor. The vehicle crossing provides more than 300m visibility in southern direction.

The vehicle crossings serving the individual lots along Hooker Road have been located as close to the eastern boundary as possible, to minimise the effect of the non-compliance (200m provided, 215m required). Despite the non-compliance, given the vehicle crossing only serves one lot and still provides 200m visibility, it is unlikely to have a material impact.

The two vehicle crossings serving the two proposed dwellings south of 18 Duncan Road do not comply with minimum sight distance requirements as these vehicle crossings are located within 215m of the Duncan Road / Hooker Road intersection. However, these vehicle crossings achieve the minimum required separation from a major/minor road intersection (60m) as outlined in the above section. Additionally, vehicles turning from Hooker Road onto Duncan Road will be travelling significantly slower than the 90km/h design speed, hence reducing the required practical visibility requirement due to reduction in the expected operating speed.

Some dwellings onto Road 6 also do not achieve compliance with the required 115m sight distance. However, given this is a 6m wide cul-de-sac road corridor, serving approximately 20 dwellings, daily traffic volumes are expected to be very low, and with the design being similar to that of an urban residential environment (active mode facilities on both sides of corridor, and channelised kerbs) and the curved road alignment, vehicle operating speeds are expected to be lower than the 50km/h posted speed limit, and therefore the sight distance requirement will also reduce. The exact location of the vehicle crossings onto Road 6, and non-compliances(if any) will be confirmed and assessed in subsequent consent applications. Due to the reasons mentioned above, these non-compliances are unlikely to have a material effect on the safe and efficient movement of vehicles along the road corridor.

Vehicle Crossing Widths

Figures 7 and 8 from *Part 3: Appendices – A Traffic* of the District Plan outline the design requirements for rural and urban vehicle crossings respectively. In the rural zone, the specific design parameters for vehicle crossings further rely on whether it is being used for residential, commercial or heavy commercial purposes.

The two vehicle crossings onto Pencarrow Road and the western vehicle crossing along Hooker Road have been effectively designed as intersections, as they are expected to cater for high traffic volumes and turning movements into/out of the Site. As such, these vehicle crossings have not been assessed against the vehicle crossing width standards as outlined in the District Plan. Instead, these intersections have been designed in accordance with guidance from AUSTROADS and the RITS v2 specification documents. As shown and discussed in section 9.4, each of these three vehicle crossings provide channelised right-turn treatment bays with a short turn slot (CHR(s) as per AUSTROADS documents), and a slight re-alignment of the Te Awa River Ride shared path to improve crossing safety for vulnerable road users.

The design requirements for vehicle crossings in rural environments depends on several factors such as the setback from the road centreline to existing fence line, road centreline to gate, and total splay width at the road edge. It is expected that all vehicle crossings proposed in rural environments (JOAL off Hooker Road, and the individual vehicle crossings onto Duncan Road) will be designed and constructed in accordance with District Plan requirements for vehicle crossings in a rural environment.

Vehicle crossings in urban environments (primarily those accessing via Road 6) are required to have a vehicle crossing width of 3m, and splay width of 4.5m at the road kerb. Similar to the above, it is expected that each vehicle crossings will be designed and constructed in accordance with District Plan requirements for vehicle crossings in an urban environment.

9.6 Loading and Bicycle Parking Assessment

Table 6 and Table 8 from the Transport Section of the District Plan outlines the required loading bays and bicycle parking spaces for the subject Site. However, given the large size and various activities proposed within the Site, for the purposes of these assessments, the Site has been divided into individual super lots as shown in **Figure 11** and accordingly categorised into the various activities mentioned within the District Plan which best suits each individual super lot.

- The north-western super lot contains buildings which cater to ‘Retail’, ‘Office’, ‘Hospitality services’ and the ‘Clubrooms at sports facilities’ activity.
- The central-western and central-eastern super lots are best classified as ’Clubrooms at sports facilities’.
- The south-western super lot is best classified as ’retirement village’.
- The south-eastern super lot is best classified as a ‘residential unit’ development.

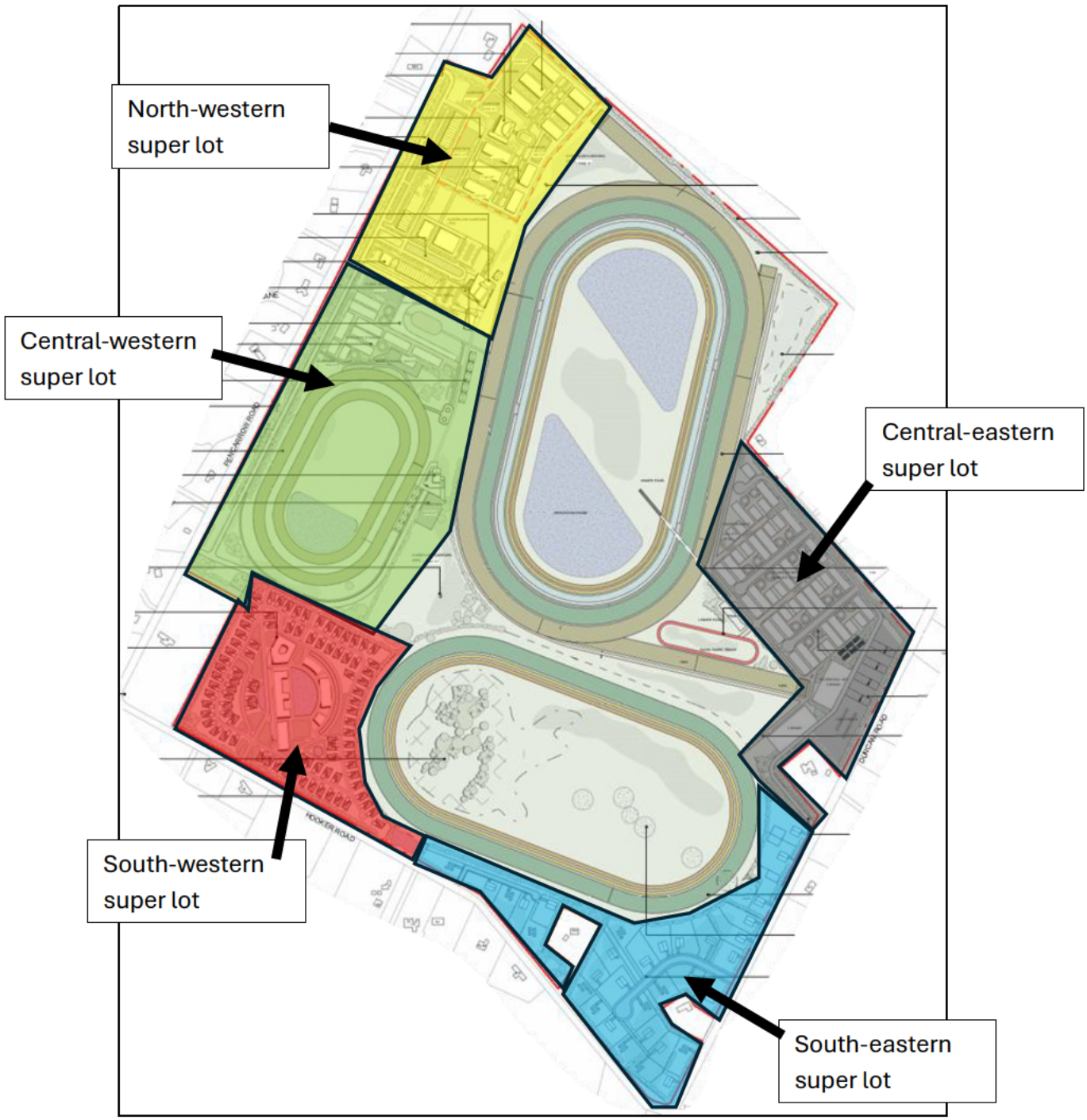


Figure 11: Various super lots within the Site

Loading Zones

The 3 super lots which provide the *Clubrooms at sports facilities'* and the *'Hospitality Services'* activities each require a minimum of one heavy goods vehicle loading bay. The central-western and central-eastern super lots both only provide the 'Clubrooms at sports facilities' activity, hence will provide one loading bay each. The north-western super lot

which contains both activities requiring a loading bay will provide two loading bays which is considered appropriate to serve the subject Site and also achieves the District Plan requirement compliance with District Plan requirements. The other activities proposed within the Site including 'Retail', 'Office', 'Retirement village' and 'residential-unit development' do not have any specific loading bay requirements. As such, the proposed loading bays comply with requirements outlined in the District Plan.

Bicycle Parking

Bicycle parking requirements for the various activities proposed within the Site are outlined in **Table 8** below.

Table 8: District Plan Bicycle Parking Requirements

Activity	Requirement
Clubrooms and sports facilities	GFA less than or equal to 3,500 m2 = No bicycle space required; For GFA greater than 3,500 m2 = 1 bicycle space for every 3,500 m2 GFA or part thereof
Residential unit	Less than or equal to 10 residential units = No bicycle space required; For greater than 10 residential units = 1 bicycle space for every 10 residential units or part thereof
Retirement village	Less than or equal to 10 residential units = No bicycle space required; For greater than 10 residential units = 1 bicycle space for every 10 residential units or part thereof
Hospitality services	Net public floor area less than or equal to 100 m2 = No bicycle space required; Net public floor area greater than 100 m2 = 1 bicycle space for every 100m2 net public floor area or part thereof
Office	GFA less than or equal to 350 m2 = No bicycle space required; For GFA greater than 350 m2 = 1 bicycle space for every 350m2 GFA or part thereof
Retail activity	GFA (including indoor and outdoor retail area) less than or equal to 300 m2 = No bicycle space required; For GFA (including indoor and outdoor retail area) greater than 300 m2 = 1 bicycle space for every 300 m2 GFA (including indoor and outdoor retail area) or part thereof

The north-western super lot contains approximately 13,500sqm of 'Clubrooms and sports facilities', approximately 2,650 sqm of office space, 5,300sqm of Hospitality services, and approximately 3,300sqm retail activity space. As such, it requires a total of 76 bicycle parking spaces. These bicycle parking spaces will be spread across the north-western super lot to increase convenience for cyclists relying on these parking spaces. The central-western and central-eastern super lots only provide approximately 1,000sqm and 3,800sqm of 'clubrooms and sports facilities' respectively. To achieve compliance with District Plan requirements, one bicycle parking space will be provided in the central-eastern super lot. The south-western super lot containing the senior living retirement village units will have spaces provided in suitable locations in the village as determined through detailed design. The south-eastern super lot contains several large lifestyle residential lots however each lot only contains one residential dwelling/unit, hence no requirement for bicycle parking spaces in this super lot.

As such, it is expected that a compliant number of bicycle parking spaces will be provided throughout the Site at locations which are convenient and encourage usage of these parking spaces.

9.7 Car Parking Assessment

Car Parking Design

Table 9 from *Part 2: District-wide matters TRPT – Transportation* of the District Plan outlines the car manoeuvring and parking space dimension requirements. It is understood that all proposed parking spaces within the Site will be designed in accordance and therefore achieve compliance with the requirements outlined in this table. It should be noted that some parking spaces within the Site will be designed for specific purposes and vehicles such as "float and trailer parking". These parking spaces will be designed appropriately to accommodate the vehicles expected to use these spaces.

Rule TRPT-R2 of the District Plan also requires all on-Site car parking spaces and loading bays to be sealed and marked if five or more spaces are provided. All formal carparks proposed within the Site will be sealed and marked apart from the two overflow carparks located near the north-western corner of the Site. Given these overflow carparks will likely only be used for the one large race day each year, it is proposed to leave this carpark unsealed and unmarked. This is also in-line with the rural characteristics of the area. For these large event days, it is proposed to provide an appropriate level of traffic management and parking wardens both throughout the Site and on surrounding road corridors. As such, use of the unsealed overflow parking on these large event days is unlikely to have any adverse impact on the safe and efficient operation of vehicles within the Site.

Accessible Car Parking

Table 7 from the Transport Section of the District Plan outlines that parking spaces and accessible routes must be provided in accordance with *the New Zealand Building Code D1/AS1 New Zealand Standard for Design for Access and Mobility - Buildings and Associated Facilities (NZS: 4121- 2001)*. This standard requires one accessible space for a carpark with 1-20 parking spaces, two accessible spaces for a carpark with 21-50 parking spaces, and one additional accessible space for every additional 50 parking spaces.

It is expected that all parking spaces such as those adjacent to the commercial development, the Bloodstock precinct, main function and events building, and the Harness events building will provide accessible parking spaces in accordance with the minimum requirements outlined in NZS4121-2001 and therefore achieve compliance with the District Plan.

Queueing Space

Table 7 from the Transport Section of the District Plan outlines the minimum queueing length at each vehicle entrance depending on the number of parking spaces. There is no minimum queueing space requirement for residential activities, hence all residential lots comply with this requirement. The exact number of parking spaces in all the other carparks is yet to be finalised. It is expected that most of these parking spaces will provide more than 150 parking spaces, and will provide queueing length well in excess of 25.5m, hence achieving compliance with this requirement of the District Plan.

10 Traffic and Network Effects

10.1 Assessment Approach

The traffic assessment has been updated for the substantive application to reflect the current masterplan, development yields and operational information provided by WTR. The assessment considers the combined effects of the residential, training, commercial/retail and racing activities proposed across the Site.

The traffic generation model has been prepared as a component-based model, with the traffic associated with each activity calculated separately before being distributed through the surrounding road network. This approach is particularly appropriate for the Project because its different activities have materially different travel characteristics. Residential and commercial activities generate conventional weekday peak-hour travel, while training activity has been derived principally from the known operating characteristics of WTR facilities and racing/event traffic has been derived from expected attendance, vehicle occupancy and event timing.

The assessment has concentrated on the PM network peak for the SIDRA capacity assessment. This represents the period when background network traffic is highest and also coincides with material Project-generated commercial, residential and event traffic. The modelling therefore provides an appropriately conservative assessment of the effects of the Project on the surrounding road network.

Traffic counts were available for the local road intersections assessed. However, suitable contemporary traffic counts were not available for the SH1 interchange double-roundabout system. There are currently roadworks affecting this part of the network, such that undertaking new traffic surveys at this time would not provide a meaningful representation of normal operating conditions. The baseline volumes for these intersections have therefore been derived from the Waikato Regional Transportation Model (WRTM). It is

understood that the WRTM volumes are likely to be lower than actual existing traffic volumes.

Accordingly, the present SH1 interchange SIDRA results should be regarded as interim or placeholder results for the purposes of lodgement rather than the final assessment of those intersections. Once the current roadworks have progressed sufficiently for representative traffic surveys to be undertaken, new counts will be collected, and the relevant SIDRA models will be rerun using the observed traffic volumes. This work is intended to be undertaken through the post-lodgement process and is expected to be completed prior to the formal comments process. The updated modelling will therefore be available to inform the substantive consideration of the application. This approach has been discussed with the road controlling authorities and confirmed as acceptable.

The Hooker Road / Cambridge Road / Racecourse Road intersection arrangement also requires some explanation. Hooker Road and Racecourse Road form offset T-intersections with Cambridge Road, effectively operating as a staggered crossroads. Because traffic passing between the two side roads interacts through the short section of Cambridge Road separating the intersections, the two intersections have been modelled together as a SIDRA network rather than as independent intersections. The results for this network are consequently reported below.

10.2 Development Traffic Assumptions

The trip-generation assumptions adopted in the model are summarised in **Table 9**. Where conventional land-use activities are proposed, published trip-generation sources have been used. For the more specialised WTR activities, including training and racing events, the assumptions have instead been developed from observed WTR operations, surveys undertaken for the referral-stage ITA and information provided by WTR. The referral-stage assessment similarly derived training demand from surveys of the existing Cambridge facility rather than applying generic land-use rates.

Table 9: Traffic Generation Assumptions

Activity	Development / Operational Assumption	Trip Generation Assumption	Source / Basis
Senior Living	A conservative 125-dwelling equivalent yield has been modelled to make allowance for communal buildings and associated activity.	0.30 trips/unit/peak hour, less 25% internalisation. AM directionality 29% inbound / 71% outbound; PM 61% inbound / 39% outbound.	NZTA Research Report 453 – Trips and Parking Related to Land Use, p.98. Directionality from ITE Trip Generation. The 125-unit modelling yield is deliberately higher than the 98-dwelling masterplan yield.

Lifestyle Residential	34 dwellings.	1.40 trips/dwelling/peak hour, less 10% internalisation. Same residential directionality as above.	NZTA Research Report 453. Internalisation allowance adopted in the traffic model.
Thoroughbred Training	350 trainers/personnel in the AM and 40 in the PM.	1.5 persons/vehicle. 40% of trainer vehicles inbound and 50% outbound during the AM assessment periods; PM 20% inbound / 80% outbound.	WTR operational information and traffic surveys of the existing Cambridge training facility, carried forward from the referral ITA. The 1.5 persons/vehicle ratio was derived from the Cambridge surveys.
Training – service vehicles	Horse servicing associated with training.	4 service vehicles included in the AM training demand.	WTR operational information / referral-stage assessment.
Regular employees	50 employees.	Conservatively 1 employee/vehicle; AM 85% inbound / 15% outbound and PM 15% inbound / 85% outbound.	WTR operational information; vehicle occupancy and directionality assumptions adopted conservatively in the traffic model.
Office	30% of the 8,825m^2 commercial/retail GFA.	2.5 trips/100sqm GFA/peak hour.	NZTA Research Report 453.
Café / Restaurant / Bar	30% of commercial/retail GFA.	Base rate 15.6 trips/100sqm, reduced by 25% to 11.7 trips/100sqm to reflect the anticipated catchment. AM peak adjustment also applied using ITE data.	RR453, with peak-period adjustment informed by ITE Trip Generation Manual LUC 931, 932 and 933.
Bakery	3% of commercial/retail GFA.	Base rate 52.2 trips/100sqm, reduced by 25% to 39.15 trips/100m^2. PM reduction applied to reflect bakery operating/travel characteristics.	RR453; PM adjustment derived from ITE LUC 936.
Convenience Store	7% of commercial/retail GFA.	Base rate 17.9 trips/100sqm, reduced by 50% to 8.95 trips/100sqm. AM peak adjustment applied.	RR453; AM adjustment informed by ITE LUC 850.
Medical Centre	5% of commercial/retail GFA.	6 trips/100sqm/peak hour, with an AM peak adjustment.	First-principles assumption based on a small clinic comprising approximately one doctor and one nurse with 15-minute appointments; AM adjustment informed by ITE LUC 720.
General Retail	25% of commercial/retail GFA.	Average RR453 medium/large shopping rate, reduced by 75% to reflect the rural location and limited immediate catchment; AM adjustment applied.	RR453, with AM adjustment informed by ITE LUC 820.
Existing farm activity	Approximately 3,000m^2 of existing sheds/farm buildings removed.	Credit of approximately -1.85 trips/100m^2/peak hour.	RR453, based on the average of warehousing and manufacturing rates.
Modelled Race Event	Model includes race-day scenarios of 1,500 attendees attending either the harness or thoroughbred events on a weekly basis.	1.7 attendees/vehicle, with peak-hour proportions reflecting the anticipated event programme.	WTR event information and assumptions in the substantive traffic model.
Bloodstock Events	Up to 1,000 attendees.	1.7 attendees/vehicle.	WTR operational information. A separate network scenario has

			not been required where the assessed racing scenario produces an equivalent or greater network demand.
Feature Events	Larger infrequent events.	Not treated as the normal permanent-network design scenario.	To be managed through an Event Traffic Management Plan, including access, parking, marshals, temporary traffic management and other event-specific measures.

The commercial / retail rates intentionally do not apply a single generic retail rate to the entire 8,825sqm development. Instead, the model represents the expected mix of office, hospitality, bakery, convenience, medical and general retail activities. This provides a more realistic representation of both the magnitude and directionality of traffic during the road-network peaks.

Similarly, the racing and training components have not been represented using generic recreational or event trip rates. These activities have known operating characteristics and there is survey information available from WTR's existing facilities. The first-principles approach is therefore considered more reliable for these specialised uses than applying a generic published rate.

Overall, the assumptions are considered appropriately conservative for assessing the transport effects of the substantive application. In particular, the senior-living component is modelled at a higher equivalent yield than shown on the masterplan; employee vehicle occupancy is conservatively assumed at one person per vehicle; and the assessment includes a substantive race-day demand in combination with the other development traffic.

10.3 Trip Distribution and Assignment

Residential and commercial / retail traffic has generally been distributed 35% toward Hamilton, 50% toward Cambridge and 15% toward Te Awamutu as shown in Figure 12. Training traffic adopts a similar regional distribution but with 60% assigned toward Cambridge and only 5% toward Te Awamutu, reflecting the expected origins and travel patterns of trainers and other equine-related activity.

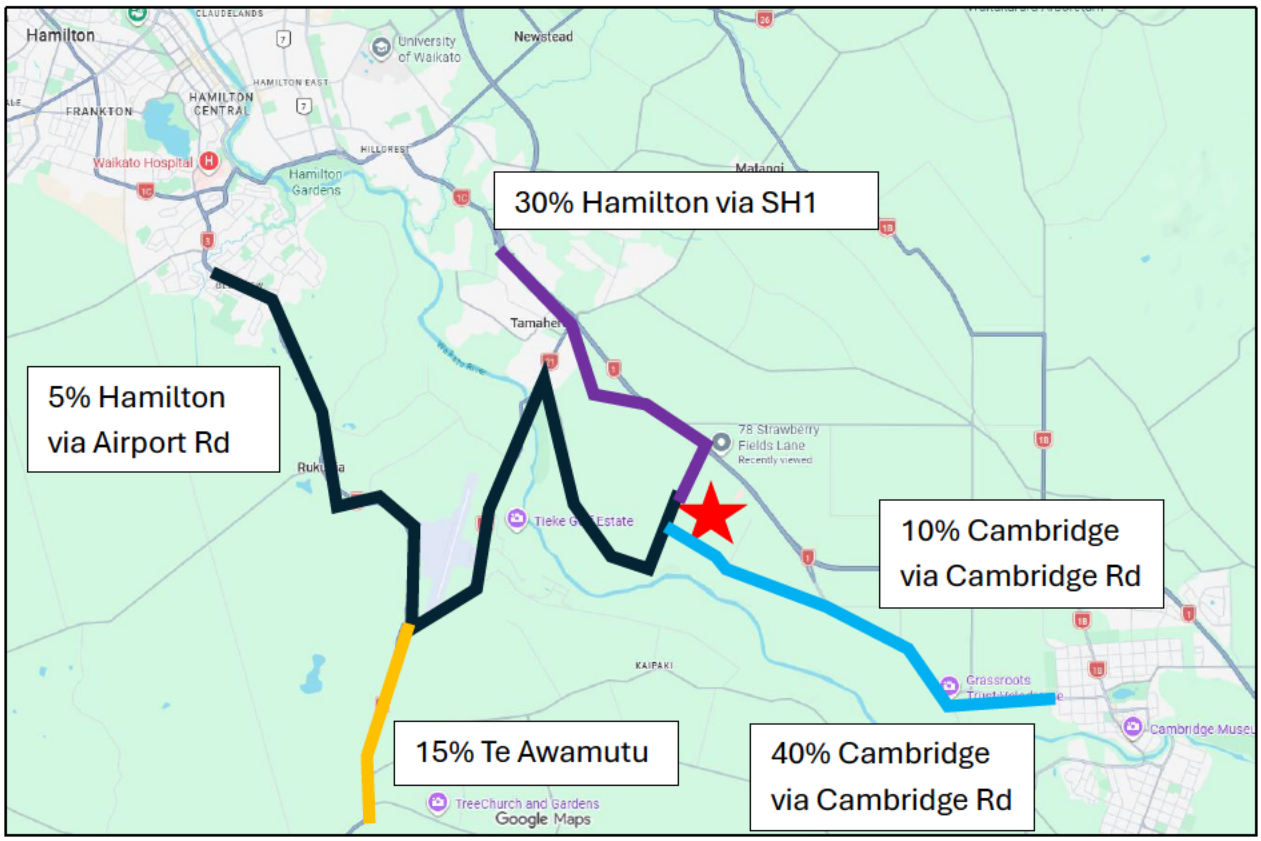


Figure 12: Traffic Distribution and Assignment

For Hamilton-bound residential traffic, 90% is assigned via SH1C and the Tamahere Interchange and 10% via SH21/Airport Road and Pencarrow Road. The model applies more detailed route splits to the training traffic, including the alternative Cambridge Road and Racecourse Road approaches. These route splits are outlined in **Table 10** below.

At the Site itself, traffic is allocated between the accesses according to the activities they serve. Training and horse-service traffic is assigned to the Duncan Road trainer access; senior-living traffic uses the dedicated Hooker Road access; and the principal commercial and event traffic is distributed between the northern and southern Pencarrow Road accesses. This reflects the intended operational separation of the different parts of the development.

Table 10: Detailed Trip Distribution

Activity	Trip origin/destination		Trip Distribution
Residential	Hamilton	SH1C via Tamahere Interchange	31.5%
		SH21 via Airport Rd and Pencarrow Rd	3.5%
	Cambridge	via Cambridge Rd	40%
		via Racecourse Rd	10%
	Te Awamutu	via Pencarrow Rd	15%

Training trips	Hamilton	SH1C via Tamahere Interchange	29.8%
		SH21 via Airport Rd and Pencarrow Rd	5.2%
	Cambridge	via Cambridge Rd	48%
		via Racecourse Rd	12%
	Te Awamutu	Via Pencarrow Rd	5%
Commercial/Retail trips	Hamilton	SH1C via Tamahere Interchange	29.8%
		SH21 via Airport Rd and Pencarrow Rd	5.2%
	Cambridge	via Cambridge Rd	40%
		via Racecourse Rd	10%
	Te Awamutu	via Pencarrow Rd	15%
Event related travel	Hamilton	SH1C via Tamahere Interchange	25%
	Matangi	Via Tauwhare Rd	5%
	Pukemoremore	Via Pickering Rd	10%
	SH1 (to/from south)	Via SH1	8%
	Tamahere	Via Newell Rd	7%
	Cambridge	via Cambridge Rd	22%
		via Racecourse Rd	8%
	Te Awamutu	via Pencarrow Rd	15%

10.4 SIDRA Assessments

SIDRA Intersection 11 modelling has been undertaken for the principal Site accesses and the key intersections through which Project traffic will travel. The complete SIDRA outputs are included in **Attachment 2**.

The principal scenarios assessed are:

- Base: existing / background PM peak traffic;
- Base + Development: background traffic plus the assessed Project traffic; and
- Base + Development incl. 15% HCV Sensitivity: the development scenario with the proportion of heavy commercial vehicles increased to 15%.

The 15% HCV scenario is a sensitivity test rather than the expected operating scenario. It has been included because WTR's operations will include horse trucks, horse floats / trailers and other larger vehicles. Increasing the HCV proportion tests the extent to which intersection performance is sensitive to the lower acceleration and greater road-space requirements associated with those vehicles. It is noted that while the 15% HCV sensitivity testing may currently represent a conservative modelling scenario, it is likely that the road corridors in vicinity of the Site will experience increased HCV movements in the future due to the broader economic growth of the Tamahere and Hamilton south areas given its proximity to Hamilton Airport.

The SIDRA results are reported using degree of saturation (DoS), average delay, 95th percentile queue and Level of Service (LOS). LOS provides a readily understood indication of the delay experienced by road users, ranging from LOS A, representing very low delay and generally free-flowing operation, through to LOS F, representing higher delay and poor operating conditions. LOS should nevertheless be considered together with DoS and queuing rather than in isolation.

For roundabouts, SIDRA reports an overall intersection LOS based on average delay. For priority-controlled intersections, SIDRA does not assign an overall intersection LOS and instead reports LOS for individual movements and the minor-road approach. Accordingly, for those intersections the assessment below principally refers to the minor-road approach LOS, as this best represents the operating conditions experienced by vehicles required to give way or stop.

The Site accesses are discussed first, followed by the external intersections and then the Hooker Road / Cambridge Road / Racecourse Road network. As explained previously, the SH1 interchange results are interim and will be updated following post-lodgement traffic surveys once representative counts can be obtained.

10.5 Site Access Results

The proposed Site accesses operate as priority-controlled intersections. As the accesses do not exist in the Base case, a direct Base access-intersection result is not applicable. The Base column in **Table 11** therefore records this as N/A, with the relevant assessment being the operation of each individual access with development traffic and under the 15% HCV sensitivity.

Table 11: Site Access SIDRA Results – PM Peak

Site Access Location	Base	Base + Development	Base + Development (15% HCV Sensitivity)
Northern Pencarrow Rd Access	N/A – proposed access	Operates comfortably within capacity, with low saturation, delay and queuing. Site-access movements operate at LOS A.	DoS 0.335, average delay 4.4 sec/veh and 95th percentile queue of approximately 13 m. Continues to operate comfortably at LOS A.
Southern Pencarrow Rd Access	N/A – proposed access	Operates comfortably within capacity, with low saturation, delay and queuing. Site-access movements operate at LOS A.	DoS 0.189. Low delay and queuing, with substantial residual capacity and LOS A.
Hooker Rd Senior Living Access	N/A – proposed access	DoS 0.139, average delay 0.8 sec/veh, LOS A, with negligible queuing.	DoS 0.145. Negligible change from the standard development scenario.
Duncan Rd Trainer / Horse-Float Access	N/A – proposed access	Operates comfortably within capacity, with low saturation, delay and queuing, LOS A/B.	Continues to operate comfortably with low saturation and queuing.

Duncan Rd Residential Access	N/A – proposed access	Operates comfortably within capacity, with low saturation, delay and queuing, LOS A/B.	Continues to operate comfortably with low saturation and queuing.

The results demonstrate that each of the proposed Site accesses has substantial residual capacity. All driveways operate at LOS A or B in all tested scenarios.

Accordingly, there is no indication from the SIDRA modelling that capacity or queuing at any of the proposed Site accesses will constrain the development. The principal transport consideration is therefore the effect of distributed Project traffic on the surrounding road network rather than the capacity of the Site accesses themselves.

10.6 External Intersection Results

Table 12 summarises the principal external intersections other than the Hooker Road / Cambridge Road / Racecourse Road staggered intersection system, which is considered separately in Section 10.7.

As noted earlier, the current SH1 interchange results use WRTM-derived baseline traffic rather than contemporary observed traffic counts. The results for those intersections should therefore be read as interim results pending the post-lodgement survey and model update.

Table 12: External Intersection SIDRA Results – PM Peak

Intersection	Scenario	DoS	Avg Delay (s) / LOS	95% Q (veh / m)	Assessment
Tauwhare Rd / Airport Rd / SH1	Base	0.633	11.6 / B	6.1 / 45 m	Operates within capacity. Interim WRTM-derived baseline.
	Base + Development	0.751	14.1 / B	9.8 / 73 m	Remains within capacity with development.
	15% HCV	0.798	16.0 / B	11.8 / 93 m	Remains within capacity under sensitivity test.
Airport Rd / Tamahere Dr / SH1	Base	0.393	8.9 / A	2.5 / 19 m	Significant spare capacity. Interim WRTM-derived baseline.
	Base + Development	0.650	10.4 / B	4.5 / 34 m	Remains within capacity with development.
	15% HCV	0.696	11.2 / B	5.1 / 41 m	Remains within capacity under sensitivity test.
Tamahere Dr / SH1	Base	0.183	3.3 / A	0.7 / 5 m	Significant spare capacity. Interim WRTM-derived baseline.
	Base + Development	0.255	2.6 / A	0.9 / 7 m	Continues to operate comfortably.
	15% HCV	0.280	2.9 / B	1.1 / 8 m	Negligible sensitivity to increased HCV proportion.
Hooker Rd / Duncan Rd	Base	0.024	2.1 / A	<0.1 / <1 m	Significant spare capacity.
	Base + Development	0.136	2.1 / B	0.4 / 3 m	Negligible capacity effect.

	15% HCV	0.142	2.2 / B	0.4 / 3 m	Negligible sensitivity to HCV assumption.

The results show that all of the external intersections operate well, with LOS of A or B evident throughout.

As stated above, the baseline data for all intersections except for the Tamahere Interchange is based off surveyed traffic counts completed in late 2025 and early 2026. At the time of writing this ITA, significant roadworks are underway along SH1 in vicinity of the Tamahere interchange, hence traffic counts at the Tamahere interchange have not been undertaken to determine "base" volumes at this intersection. Instead, these values have been obtained from WRTM PM peak hour volumes. It is proposed to undertake traffic counts at this intersection once the roadworks in vicinity of the interchange are completed, and update the SIDRA modelling using volumes from the surveyed traffic count as the "baseline" volumes.

10.7 Hooker Road / Cambridge Road / Racecourse Road Network

Hooker Road and Racecourse Road form two offset T-intersections with Cambridge Road, effectively creating a staggered crossroads. Vehicles travelling between Hooker Road and Racecourse Road therefore use the short intervening section of Cambridge Road, and the operation of one intersection can influence the other.

For that reason, the intersections have been modelled together as a SIDRA network. It is appropriate to consider the performance of both component intersections together rather than presenting them as unrelated individual intersections. The results of the SIDRA network are presented in **Table 13** below.

Table 13: Hooker Road / Cambridge Road / Racecourse Road SIDRA Network – PM Peak

Intersection	Scenario	DoS	Avg Delay (s) / LOS	95% Q (veh / m)	Assessment
Hooker Rd / Cambridge Rd	Base	0.201	1.0 / B	0.1 / 1 m	Significant spare capacity.
	Base + Development	0.755	7.5 / D	2.2 / 16 m	Remains within capacity.
	15% HCV	0.880	11.1 E	3.3 / 26 m	Remains below saturation under the sensitivity test.
Racecourse Rd / Cambridge Rd	Base	0.219	1.1 / B	0.1 / 1 m	Significant spare capacity.
	Base + Development	0.366	2.2 / D	0.5 / 4 m	Continues to operate comfortably.
	15% HCV	0.459	2.7 / D	0.6 / 5 m	Continues to operate comfortably.

The network modelling indicates that the Hooker Road / Cambridge Road intersection experiences the more material increase in demand, with its degree of saturation increasing from 0.201 in the Base scenario to 0.755 with the Project. Nevertheless, it remains within capacity, with an average delay of 7.5 seconds per vehicle and a relatively short 95th percentile queue.

Under the deliberately conservative 15% HCV sensitivity, the degree of saturation at Hooker Road / Cambridge Road increases to 0.880. The intersection therefore becomes more heavily utilised but remains below saturation, with an average delay of 11.1 seconds per vehicle and a 95th percentile queue of approximately 26m.

The Racecourse Road / Cambridge Road component of the staggered arrangement remains substantially less constrained. Its development-case degree of saturation is 0.366, increasing to 0.459 under the HCV sensitivity.

Considered as a network, the results demonstrate that the staggered Hooker Road / Cambridge Road / Racecourse Road intersection system can readily accommodate the assessed Project traffic. The Hooker Road intersection is the more sensitive component of the network, but continues to operate within capacity even under the 15% HCV sensitivity test.

10.8 Feature Events

The largest feature events are different in character: they are infrequent, planned events with known dates, controllable parking supply and the ability to actively manage routes, access, marshals, coaches, shuttles and temporary traffic control.

The final consent framework should define the attendance or traffic threshold at which an Event Traffic Management Plan is required, the lead time for preparation and approval, consultation requirements with the road controlling authorities, parking and overflow arrangements, bus/shuttle and rideshare provisions where appropriate, temporary traffic management, monitoring and post-event review. This provides a proportionate response to short-duration event peaks without requiring permanent road infrastructure to be designed around one or two exceptional days each year.

10.9 Traffic Effects Summary

The SIDRA modelling demonstrates that each of the proposed Site accesses can accommodate the anticipated traffic demand with substantial spare capacity and short queues. This remains the case under the conservative 15% HCV sensitivity test, which

specifically allows the effect of the horse trucks, floats/trailers and other larger vehicles associated with WTR's operations to be considered.

The Hooker Road / Duncan Road intersection also retains substantial spare capacity. The Hooker Road / Cambridge Road / Racecourse Road staggered intersection system experiences a more noticeable increase in demand, particularly at the Hooker Road intersection, but the network remains within capacity in both the standard development scenario and the 15% HCV sensitivity test. While background growth has not been considered in the model, given that most intersections operate at a LOS A/B even with the development traffic, the typical level of background traffic growth is unlikely to have any noticeable adverse impact on the operation of these intersections.

As discussed above, the SH1 interchange assessment presently relies on WRTM-derived traffic volumes because current roadworks prevent representative intersection surveys from being undertaken. Those results are therefore appropriately regarded as interim pending post-lodgement traffic surveys and updated SIDRA modelling, expected to be completed prior to the formal comments process.

That updated assessment will provide the appropriate basis for determining the existing operation of the SH1 interchange, the incremental effect attributable to the Project, and whether any Project-specific mitigation or management response is required.

Subject to that further assessment, the modelling completed to date demonstrates that the Site accesses and the remainder of the assessed local road network can accommodate the Project traffic without material adverse effects on network capacity or operation.

11 Statutory and Policy Framework

11.1 Overview

The Project sits within a broader national, regional and district transport policy framework which seeks to provide for growth and economic activity while maintaining the safe and efficient function of the transport network. Given the scale and mixed-use nature of the Project, the most relevant themes are road safety, protection and efficient use of strategic transport corridors, integration of land use and transport, management of growth-related traffic effects, provision for different modes of travel, and the efficient movement of people and goods.

The assessment below focuses on those transport-related outcomes. Detailed compliance with the specific transportation rules and standards of the District Plan is addressed separately in the Statutory Transport Standards Assessment in Chapter 12 of this report.

11.2 Fast-track Approvals Act 2024

The Project is being considered under the Fast-track Approvals Act 2024 (FTAA). From a transport perspective, the relevant consideration is not simply whether the Project generates additional traffic, but whether the transport effects associated with enabling the Project can be appropriately avoided, remedied or mitigated while enabling the wider benefits of the Project to be realised.

A particularly relevant characteristic of the Project is the proposed consolidation of existing Waikato racing and training activities. The Project will consolidate activities currently undertaken at separate facilities, including Te Rapa, Waipa and Cambridge thoroughbred facilities and the Cambridge harness facility, within a single purpose-built racing and training hub. This has transport-efficiency benefits because trainers, staff, horses, servicing activities and industry participants will be able to undertake a greater proportion of their activities at one location rather than travelling between geographically separate facilities.

The Site is also intended to accommodate complementary equine support, commercial and service activities. To the extent that those activities serve the racing and training precinct, their co-location similarly provides an opportunity to reduce external and inter-Site travel. These benefits do not remove the need to appropriately address the local effects of concentrating activity at the Pencarrow Road Site. That is the principal purpose of this ITA. The assessment has therefore considered the Site accesses, local road network, strategic connections toward Hamilton and Cambridge, SH1 interchange effects, active modes, parking, event management and construction traffic.

The assessment concludes that the Site accesses and most of the surrounding network can accommodate the assessed Project traffic, with targeted intersection treatments and operational management proposed where appropriate. The SH1 interchange assessment will also be updated post-lodgement once representative traffic surveys can be undertaken. In this way, the transport response seeks to enable the benefits associated with consolidation while ensuring that the resulting local transport effects are appropriately identified and managed.

11.3 Government Policy Statement on Land Transport 2024

The Government Policy Statement on Land Transport 2024 (GPS 2024) establishes the Government's priorities for investment in the land transport system. Its current strategic direction places particular emphasis on economic growth and productivity, increased maintenance and resilience, safety, and value for money. These themes are relevant to the Project even though the GPS principally directs public land-transport investment rather than private development.

Economic growth and productivity are particularly relevant. The Project is intended to establish a purpose-built regional racing and equine hub and consolidate facilities that currently duplicate land, infrastructure and operational resources. From a transport perspective, bringing racing, training, bloodstock, equine-support and associated activities together provides for more efficient movement between related activities and supports the long-term operation of an economically important regional industry.

The Project also responds to the GPS emphasis on the efficient use of existing transport infrastructure. The access strategy deliberately distributes traffic across Pencarrow Road, Hooker Road and Duncan Road according to the function of each part of the development rather than concentrating all traffic at a single access. The traffic assessment demonstrates that the Site accesses have substantial residual capacity and that most surrounding intersections remain within capacity under the assessed development scenario.

Safety is an important consideration given the rural and relatively high-speed road environment surrounding the Site. The Project provides purpose-designed access arrangements, separates public/event traffic from trainer and horse-related traffic where practicable, and will provide intersection treatments where warranted by the development traffic. In particular, the increased right-turn demand at Hooker Road / Duncan Road has been assessed separately from its satisfactory SIDRA capacity performance, recognising that an appropriate right-turn treatment may be required as a safety response.

The Project therefore responds positively to the principal transport themes of GPS 2024 by supporting regional economic activity, making efficient use of the existing network, providing targeted rather than unnecessary infrastructure intervention, and treating safety as a fundamental design consideration.

11.4 Waikato Regional Land Transport Plan 2024–2054

The Waikato Regional Land Transport Plan 2024–2054 (WRLTP) provides the long-term strategic direction for the region's land transport system. Relevant WRLTP priorities include Strategic Corridors, Managing Growth, Road Safety, Access and Mobility, and Maintaining What We Have. In practical terms these seek to maintain the reliability, resilience and safety of important transport corridors; ensure transport infrastructure responds appropriately to growth; improve road safety; increase travel choices where practicable; and obtain greater efficiency from existing transport assets.

The Project has been assessed with particular regard to the strategic-corridor function of SH1 and the principal routes connecting the Site with Hamilton and Cambridge. Project traffic has been assigned across the surrounding network and key intersections have been modelled to establish whether the additional demand materially compromises their operation.

The Project also addresses the WRLTP road-safety direction through its access strategy and proposed road improvements. The surrounding network is predominantly rural and includes high-speed environments, so the assessment has considered sight distance, intersection separation, turning treatments, horse-float and HCV movements, the Te Awa River Ride interface and event traffic management in addition to conventional intersection capacity.

From a growth-management perspective, the Project is also notable in that it is not reliant upon a wholesale upgrade of the surrounding network to function. Targeted improvements can be provided where warranted, while the majority of assessed intersections have sufficient existing capacity to accommodate Project traffic.

Overall, the Project is considered consistent with the WRLTP's emphasis on protecting important corridors, safely managing growth-related demand and making efficient use of the existing transport network.

11.5 Waikato District Plan – Operative in Part

The Waikato District Plan – Operative in Part provides the principal district-level statutory framework relevant to the transport effects of the Project. The transportation provisions address matters including vehicle access, parking and loading, manoeuvring and queuing, traffic generation and the design of new roads.

At a policy level, the relevant transport outcome is that land-use activities are integrated with the transport network in a manner that maintains safe and efficient access and avoids or manages adverse effects on network operation. The rules give practical effect to this through standards governing matters such as access location and visibility, parking and loading design, on-site manoeuvring, queuing and traffic-generation thresholds.

Those matters have been integral to the development of the Project rather than being treated as matters to resolve after the land-use layout has been fixed. Multiple Site accesses are proposed so that different traffic functions can be separated, including public/event, senior-living, residential and trainer/horse-related movements. On-site circulation and parking are provided at a scale commensurate with the proposed activities, including substantial event and overflow parking.

The traffic-generation threshold applicable to the General Rural Zone is exceeded by the overall Project. That does not in itself establish that the resulting effects are unacceptable, rather, it requires the actual transport effects to be assessed. The District Plan specifically directs attention to matters including trip characteristics, road and intersection safety, network safety and efficiency during relevant peak periods, and mitigation such as travel planning, alternatives to private vehicle travel, staging and road-network improvements.

Those are the matters addressed throughout this ITA. The assessment includes quantified trip generation and distribution, SIDRA modelling, access and intersection design, parking, event management, active-mode interfaces, heavy-vehicle sensitivity testing and construction traffic management. The Project therefore provides the detailed effects assessment required where the permitted traffic-generation envelope is exceeded.

Detailed rule-by-rule assessment against TRPT-R1 to TRPT-R4 and the relevant transportation tables is provided separately in Section 12 (Statutory Transport Standards Assessment).

11.6 Te Awa River Ride and Active Modes

A distinctive transport consideration for this Site is the Te Awa River Ride, a 3m wide shared path which runs adjacent to the Hooker Road and Pencarrow Road frontages. The Project therefore considers active-mode safety not only internally but at locations where vehicle movements interact with an existing regionally important walking and cycling route.

The access and intersection designs maintain clear priority, visibility and legibility for cyclists and pedestrians and avoid creating unnecessary conflict with Project traffic. The CTMP similarly provides for management of construction interfaces with Te Awa.

The Project also provides opportunities for residents, staff and visitors to connect directly with the existing route. This is a positive transport outcome, particularly for the senior-living and employment components, because it gives the development immediate access to an established off-road active-mode connection rather than requiring a completely new external network to be created.

11.7 Policy Framework Summary

Taken together, the statutory and strategic transport framework places a strong emphasis on safety, efficient use and protection of the transport network, appropriate management of growth, accessibility and transport choice.

The Project responds to those themes through the consolidation of geographically separate racing and training activities, distribution of different traffic functions across a considered access strategy, substantial on-site parking and circulation, targeted road and intersection improvements, protection of the Te Awa River Ride interface, event and construction traffic management, and detailed assessment of effects on both the local and strategic road networks.

Importantly, the transport case does not depend on speculative future infrastructure or substantial assumed mode shift. Overall, the Project is considered to respond appropriately to the relevant transport policy framework.

12 Statutory Transport Standards Assessment

Table 14 below provides the standards-led framework for the substantive assessment against the relevant transport provisions of the Waikato District Plan – Operative in Part.

Table 14: Statutory Transport Standards Assessment

Rule	Requirement	Proposed	Compliance
TRPT-R1: Vehicle access for all activities			
1a(i)	The site has legal physical access to a formed road that is maintained by a road controlling authority;	Site has access to a formed public road.	Complies
1a(ii)	The site has a vehicle access that is constructed to comply with the relevant requirements of Table 1 – Separation distances, Figure 6 – Separation distances, Table 2 – Minimum sight distances and Figure 8 – Minimum sight distances, Tables 12 and 13 except: (1) Rule TRPT-R1(1)(a)(ii) does not apply where the separation distance requirements of Table 1 – Separation distances and Figure 6 – Separation distances cannot be achieved on a site's road frontage due to existing vehicle accesses on adjacent sites;	The Type 2 and Type 9 road corridors do not comply with requirements outlined in Table 13 of the District Plan. A few proposed vehicle crossings onto Duncan Rd do not comply with minimum separation and visibility requirements. See section XX for more detail.	Non-compliant.

1a(iii)	No new vehicle access shall be created from Newell Road (south of Birchwood Lane);	No access is provided to Newell Road.	Complies
1a(iv)	No access, access leg or right-of-way shall run parallel to any road within 30m of the road, except: (1) Rule TRPT-R1(1)(a)(iv) does not apply to farm races, or unsealed internal rural accesses in sites within the Rangitahi Peninsula Structure Plan Area and Opotoru Road;	Access along Pencarrow Road runs parallel within 30m of Pencarrow road. However the frontage along Pencarrow Road will be heavily planted to minimise headlight disruption.	Non-compliant.
1a(v)	On a site with legal access to two roads, the activity only accesses the road with the lower classification in the road hierarchy in Table 4 – Functions of roads within the Road Hierarchy and Table 5 – Road Hierarchy list (where the roads have the same classification, access is only to the road with the lower average daily traffic movements) except in the KLZ – Kimihia Lakes zone where this rule does not apply;	The Site has frontage to four road corridors, 3 of them being classified as local roads and one being a national route. The Site only provides access onto these local roads.	Complies
1a(vi)	New vehicle accesses/entrances are not to be constructed to any site from the following roads: (1) Main Street, Huntly; (2) Jesmond Street, Ngaruawahia; (3) Bow Street, Raglan (James Street to Cliff Street); (4) George Street, Tuakau (Gibson Road to Liverpool Street); (5) Great South Road, Pokeno (Selby Street to Market Street); and (6) Main Street, Te Kauwhata (Saleyard Road to Baird Avenue); and	No new accesses proposed onto these road corridors.	Complies
1a(vii)	No new vehicle access shall be created within 30 metres of a railway level crossing;	No level crossings within the vicinity of the Site	N/A
1a(viii)	All existing and new accesses and roads that cross an operational rail network via a level crossing must be maintained in accordance with the sight line triangles provided in Table 14 – Required restart sight distances for Figure 18; and	No level crossings within the vicinity of the Site	N/A
1a(ix)	New vehicle access shall not be located within an Identified Area, with the exception of a Significant Natural Area which is addressed in the ECO – Ecosystems and indigenous biodiversity chapter.	Site is not in this area.	N/A
TRPT-R2: On-site parking and loading			
1a(i)	The loading space requirements, manoeuvring and parking space dimensions in Table 6 – Required loading bays, and Table 9 – Car manoeuvring and parking space dimensions, noting: (1) When calculating the requirements for loading on the basis of the prescribed floor area, the area for parking, loading and manoeuvring shall be excluded; (2) If the calculation results in a fraction, then that figure shall be rounded to the nearest whole number; (3) 90 percentile car dimensions in Figure 9 – 90th Percentile car tracking curve minimum radius apply; (4) The requirements of Table 6 – Required loading bays do not apply to residential and rural activities; (5) Accessible parking spaces must comply with the New Zealand Building Code D1/AS1 New Zealand Standard for Design for Access and Mobility – Buildings and Associated Facilities	All parking spaces will be designed in accordance with Table 9 of the District Plan. The requirement for loading bays has been assessed in accordance with Table 6. The provision of accessible parking spaces will comply with requirements outlined in Table 7 of the District Plan and also NZS4121-2001.	Complies

	(NZS: 4121-2001) and Table 7 – Accessible parking spaces; and		
1a(ii)	On-site bicycle space requirements in Table 8 – Required bicycle spaces, except: (1) The requirements of Table 8 – Required bicycle spaces do not apply to residential and rural activities;	Bicycle parking spaces will be provided in accordance with the requirements outlined in the District Plan.	Complies
1a(iii)	Where parking is provided any on-site car parking spaces for non-residential activities within the GRZ – General residential zone and MRZ – Medium density residential zone must be set back at least 3m from the road boundary of the site and screened by planting or fencing from being viewed from the road;	The subject Site is zoned within the General Rural Zone – GRUZ, hence does not fall within these residential zones.	N/A
1a(iv)	On-site car parking spaces (where provided) and loading bays comply with the requirements of Table 9 – Car manoeuvring and parking space dimensions and Figure 9 – 90th Percentile car tracking curve minimum radius and be located on the same site as the activity;	All publicly accessible parking spaces will be designed to comply with Table 9 of the District Plan and will be able to accommodate the 90th percentile car tracking curve. Some parking spaces have been specifically designed to accommodate Site specific design vehicles such as horse floats.	Complies
1a(v)	On-site car parking spaces and loading bays are to be sealed if five or more parking spaces are provided;	All formal carparks proposed within the Site will be sealed. The overflow carparks will remain unsealed.	Non-compliant.
1a(vi)	On-site car parking spaces and loading bays are to be permanently marked if five or more parking spaces are provided;	All formal carparks proposed within the Site will be sealed. The overflow carparks will remain unmarked.	Non-compliant.
1a(vii)	On-site car parking spaces and loading bays are not to be located on any shared access or residential living court;	Parking and loading spaces will not be located on shared accesses or residential living courts.	Complies
1a(viii)	Vehicles occupying any onsite car parking or loading spaces must have ready access to the road (or relevant access or right of way) at all times, without needing to move any other vehicle occupying other onsite car parking or loading spaces	Parking and loading spaces expected to have ready access to the road at all times.	Compliance expected
1a(ix)	Loading bays are not required on sites with sole frontages to the following: (1) Main Street, Huntly; (2) Jesmond Street, Ngaruawahia; (3) Bow Street, Raglan (James Street to Cliff Street); (4) George Street, Tuakau (Gibson Road to Liverpool Street); (5) Great South Road, Pokeno (Selby Street to Market Street); or (6) Main Street, Te Kauwhata (Saleyard Road to Baird Avenue); and	Site is not in these areas.	N/A
1a(x)	New on-site parking and loading bays shall not be located within an Identified Area, with the exception of	Site is not in these areas.	N/A

	a Significant Natural Area which is addressed in the ECO – Ecosystems and indigenous biodiversity chapter		
TRPT-R3: On-site manoeuvring and queuing			
1a(i)	On-site manoeuvring space shall be provided to ensure that no vehicle is required to reverse onto from or to a road except; (1) Rule TRPT-R3(1)(a)(i) does not apply to Local Roads within the GRZ – General residential zone, MRZ – Medium density residential zone, LLRZ – Large lot residential zone and SETZ – Settlement zone with a posted speed limit of less than 60 km/h	All accessways except the residential lots provide sufficient manoeuvring space within the Site to avoid reversing onto the road corridor. However, lot and driveway layouts for the residential lots have not yet been confirmed. As such, this non-compliance will be addressed on a lot-by-lot basis as part of subsequent consent applications.	Compliance expected.
1a(ii)	A 90th percentile car, as defined in Figure 9 – 90th Percentile car tracking curve minimum radius, can enter and exit all parking spaces without making more than one reverse movement, excluding spaces required for a dwelling	All publicly accessible parking spaces will be designed to comply with Table 9 of the District Plan and will be able to accommodate the 90th percentile car tracking curve as required.	Complies
1a(iii)	On-site manoeuvring space for any heavy vehicle shall comply with the tracking curve (relevant for the type of activities to be carried out on the site and the largest combination standard configuration heavy vehicle permitted on the road(s) to which the site has frontage trucks to be used)	Truck and trailers and other large vehicles will have sufficient space within the Site to both enter and exit the Site in a forwards direction.	Complies
1a(iv)	On-site manoeuvring space shall be formed	All areas to be used for vehicle manoeuvring will be sealed.	Complies
1a(v)	On-site queuing space shall be provided in accordance with Table 10 – Queuing space for vehicles entering and exiting any on-site car parking, loading or manoeuvring space, where: (1) Length is measured from the road boundary where vehicles first enter the site; and (2) On-site queuing above must not encroach into the required on-site manoeuvring area	All proposed car parks, and loading areas provide queueing space which meet the minimum queueing space requirements outlined in the District Plan.	Complies
1a(vi)	On-site manoeuvring and queuing spaces are not required on sites with vehicle accesses/entrances to the following: (1) Main Street, Huntly; (2) Jesmond Street, Ngaruawahia; (3) Bow Street, Raglan (James Street to Cliff Street); (4) George Street, Tuakau (Gibson Road to Liverpool Street); (5) Great South Road, Pokeno (Selby Street to Market Street); (6) Main Street, Te Kauwhata (Saleyard Road to Baird Avenue)	Site is not in these areas.	N/A
1a(vii)	New on-site manoeuvring shall not be located within an Identified Area, with the exception of a Significant Natural Area which is addressed in the ECO – Ecosystems and indigenous biodiversity chapter.	Site is not in these areas.	N/A
TRPT-R4: Traffic Generation			
1a	Where any site gains access from an arterial or regional arterial (including state highway) road, there is a maximum of 50 Equivalent Car Movements (ECM) per	The Site does not gain access from any arterial or regional arterial road corridor.	N/A

	day. Note: ECM – 1 car movement is equivalent to I car movement / 1 truck movement is equivalent to 3 car movements / 1 truck and trailer movement is equivalent to 5 car movements.		
1b(i)	Within the GRZ – General residential zone, MRZ – Medium density residential zone, or RLZ – Rural lifestyle zone there is a maximum of 100 vehicle movements per site per day, and no more than 15% of these vehicle movements are heavy vehicle movements	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1b(ii)	Within the RPZ – Rangitahi Peninsula zone there is a maximum of 200 vehicle movements per site per day, and no more than 5% of these vehicle movements are heavy vehicle movements	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1b(iii)	Within the BTZ – Business Tamahere zone, COMZ – Commercial zone, TCZ – Town centre zone or LCZ – Local centre zone there is a maximum of 300 vehicle movements per site per day, and no more than 15% of these vehicle movements are heavy vehicle movements	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1b(iv)	Within the GRUZ – General rural zone: (1) There is maximum 200 vehicle movements per site per day and no more than 15% of these vehicle movements are heavy vehicle movements; (2) For activities directly associated with horticulture harvesting, a maximum of 300 vehicle movements per site per day for up to a month, once in a 12-month period and no more than 33% of these vehicle movements are heavy vehicle movements; or (3) Within the Agricultural Research Centres identified on the planning maps as a specific controls there is maximum 3000 vehicle movements per site per day	The proposed activity will generate more than 200 vehicle movements per day. SIDRA modelling has been carried out to understand the impact of the expected level of vehicle movements. Temporary activity is expected to generate over 100vpd of which more than 15% are heavy vehicle movements. Up to 4vpd from staff and 100vpd from truck movements which exceeds this threshold. See section 10 of this report.	Non-compliant
1b(v)	Within the GIZ – General industrial zone and HIZ – Heavy industrial zone (excluding the Huntly Power Station and Huntly Quarry site): (1) Maximum 250 vehicle movements per site per day and no more than 15% of these vehicle movements are heavy vehicle movements	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1b(vi)	From the Huntly Power Station site as shown as the HIZ – Heavy industrial zone on the planning maps: (1) All vehicle movements generated from all activities on the site combined (including those movements which were lawfully established prior to 5 December 2012), there is a maximum 750 vehicle movements per site per day; and (2) Maximum 300 of these vehicle movements are heavy vehicle movements	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1b(vii)	From the Huntly Quarry site: (1) All vehicle movements generated from all activities on the site combined (excluding those movements which were lawfully established prior to 5 December 2012), there is maximum 350 vehicle movements per site per day; and	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A

	(2) No more than 150 of these vehicle movements are heavy vehicle movements, increasing to 200 once the Huntly Bypass section of the Waikato Expressway is open for public use		
1b(viii)	From the Pokeno Traffic Overlay the maximum number of vehicles per day must be no more than 1200 (including those that were previously established prior to January 2022) and no more than 420 of these movements can be heavy vehicles, provided that: (1) No more than 250 vehicle movements are generated from Record of Title 614850 (or any allotments subsequently created from that title) and of those 250 vehicle movements no more than 15% can be heavy vehicles; and (2) All vehicle movements must access to and from McDonald Road.	Site is not in this overlay.	N/A
1b(ix)	Within PREC27 and PREC28 of the TKAZ – Te Kowhai airpark zone there is a maximum 250 vehicle movements per site per day and no more than 15% of these vehicle movements are heavy vehicle movements	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1b(x)	Within PREC29 and PREC30 of the TKAZ – Te Kowhai airpark zone there is a maximum of 30 vehicle movements per site per day and no more than 4 of these vehicle movements are heavy vehicle movements except:	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1b(xi)	Movement restrictions do not apply if the activity is an event or promotion (including temporary events) in PREC29 or a community facility in PREC29	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1b(xii)	From the Horotiu Industrial Park does not exceed 15.4 trips/ha gross land area/peak hour	Site is not in the Horotiu Industrial Park.	N/A
1b(xiii)	Within the KLZ – Kimihia Lakes zone there is a maximum of 850 vehicle movements per hour and no more than 15% of these vehicle movements are heavy vehicle movements	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
TRPT-R5: Operation, maintenance and minor upgrading of existing public roads, State Highways and associated road network activities			
1a(i)	The works occur within the road reserve or railway corridor	The proposed development will require some works within the road reserve along Pencarrow Road, and Hooker Road. These works will be co-ordinated with Waikato District Council.	Non-compliant.
1a(ii)	Works within the road or railway corridor must be for the purpose of: (1) Maintaining or improving effectiveness or efficiency consistent with the function of the existing public road or railway corridor; or (2) Maintaining or improving safety for road users or adjacent properties	All works proposed within the road corridor will be undertaken to improve safety and efficiency for road users.	Complies
1a(iii)	Lighting shall be designed and located to comply with the Australia New Zealand Roading Lighting Standard	Lighting to be assessed by others.	N/A

	1158, (series) – Lighting for Roads and Public Spaces: 2005		
1a(iv)	Any earthworks must comply with Rule AINF-R8	Earthworks to be assessed by others.	N/A
1a(v)	New trees must be planted at least 1.5m from underground services, or 1m with a root protection barrier approved by the relevant network utility operator.	Landscaping to be assessed by others.	N/A
TRPT-R6: New public roads, including where the road has been identified on the planning maps as an indicative road, and associated road network activities			
1a(i)	The public road is located within road or unformed road as shown on the planning maps	The proposed public road is not located within the road or unformed road as shown on the planning maps. However, the proposed road corridor has been designed in accordance with RITS v2.	Non-compliant
1a(ii)	The public road is not located within an Identified Area	The public road corridor is not located within an Identified Area.	N/A
1a(iii)	The design requirements of Tables 12 or 13 based on their function within the Road Hierarchy as set out in Table 4 – Functions of roads within the Road Hierarchy, except: (1) Any National routes or Regional arterial roads shall be subject to Rule TRPT-R6(2); (2) The specified minimum Road/right of way reserve widths in Tables 12 or 13 do not include any additional width required for a turning head; (3) Any private access, right of way or access allotment over 70m in length must be constructed to be in accordance with the highest dimensions required for an access allotment in Tables 12 or 13; and (4) The requirements of Tables 12 or 13 shall not apply to taxiways within the TKAZ – Te Kowhai airpark zone; and (5) Roads located within PREC36 – Te Kowhai West Precinct, the relevant road typology requirements as detailed on the Te Kowhai West Structure Plan take priority over the standards in Table 12 in the event of any conflict.	The proposed local road (Type 6 road) complies with the requirements of a Local Road in GRUZ and RLZ as specified in Table 13 of the District Plan. The Type 2 and 9 road corridors do not comply with the minimum requirements outlined in the District Plan.	Non-compliant
1a(iv)	Within road or unformed road located within the Tamahere RLZ – Rural lifestyle zone, all roads must:	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1a(v)	Comply with the minimum widths specified in Figure 12; and	Figure 12 only outlines cross-sections for roads in the Tamahere Country Living Zone. Site is zoned as GRUZ.	N/A
1a(vi)	Have swale drains on both sides of the carriageway capable of collecting all road runoff and overland flow towards the road or right of way from a 20% Annual Exceedance Probability event; and	Stormwater capacity requirements to be assessed by others.	N/A
1a(vii)	In areas of poorly-drained soils, either the stormwater is to be directed to areas with higher infiltration, or infiltration systems are to be constructed	Stormwater capacity requirements to be assessed by others.	N/A

1a(viii)	Within road or unformed road located within the RPZ – Rangitahi peninsula zone, the relevant access and road requirements of the Rangitahi Structure Plan take priority over the standards in Table 12 or 13 in the event of any conflict	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1a(ix)	The road connection between Wayside Road and Travers Road comprising the extension of Bragato Way, Te Kauwhata	Site is not located in Te Kauwhata.	N/A
1a(x)	All roads and vehicle accesses shall be constructed in accordance with Table 12 and Figures 14, 15 and 16	Site is not located in Te Kauwhata.	N/A
1a(xi)	Stormwater collection must be through grassed swales prior to reaching reticulated systems	Stormwater capacity requirements to be assessed by others.	N/A
1a(xii)	Any earthworks must comply with Rule AINF-R8	Earthworks to be assessed by others.	N/A
1a(xiii)	New trees must be planted at least 1.5m from underground services, or 1m with a root protection barrier approved by the relevant network utility operator.	Landscaping to be assessed by others.	N/A
TRPT-R7: Access and new roads in the TKAZ – Te Kowhai airpark zone			
1a(i)	The design requirements of Table 12 or 13, based on their function within the Road Hierarchy as set out in Table 4 – Functions of roads within the Road Hierarchy, except: (1) The requirements of Table 12 or 13 shall not apply to taxiways within Te Kowhai airpark.	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1a(ii)	Road alignment and the taxiway network within the TKAZ – Te Kowhai airpark zone shall be in general accordance with APP10 – Te Kowhai Aerodrome	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1a(iii)	The western boundary of the TKAZ – Te Kowhai airpark zone shall provide for future connectivity options (vehicular and / or pedestrian) in general accordance with the location identified in APP10 – Te Kowhai Aerodrome.	Site is zoned as General rural zone – GRUZ, hence does not fall within these zones.	N/A
1a(iv)	Any earthworks must comply with Rule AINF-R8	Earthworks to be assessed by others.	N/A
TRPT-R8: Off-road pedestrian walkways and cycleways, being sections of the public walkway and cycleway network that are not located within the road network			
1a(i)	Have a minimum 2.0m width or 2.5m where alongside an arterial road or forming a shared path	No off-road pedestrian walkways proposed as all proposed footpaths will be adjacent to a private or public vested road corridor.	N/A
1a(ii)	Are formed	All footpaths on the private and public vested road corridors will be formed.	Compliant
1a(iii)	Any earthworks must comply with Rule AINF-R8	No off-road footpaths or cycleways proposed.	N/A
1a(iv)	Are not located within an Identified Area	Site is not in these areas.	N/A

TRPT-R9: Stock underpasses			
1a(i)	Any earthworks must comply with Rule AINF-R8	No stock underpasses proposed.	N/A
1a(ii)	Are not located within an Identified Area	Site is not in these areas.	N/A
TRPT-R10: Esplanade reserves and strips where a road is stopped			
1a	Where land comprising a stopped road or any part of a stopped road adjoins:	No esplanade reserves or stopped roads within the vicinity of the Site.	N/A
1a(i)	The mark of mean high water springs of the sea	Site is not in these areas.	N/A
1a(ii)	The bank of any river with an average width of 3m or more	Site is not in these areas.	N/A
1a(iii)	The margin of any lake with an area of 8 hectares or more Section 345(3) of the Local Government Act 1974 and section 118 of the Public Works Act 1981 will apply only where the land comprising the stopped road or part of the stopped road is identified	Site is not in these areas.	N/A
1a(iv)	In APP7 – Esplanade priority areas	Site is not in these areas.	N/A
1a(v)	On the planning maps as requiring an esplanade reserve, esplanade strip or access strip to be set aside	Site is not in these areas.	N/A
TRPT-R11: Buildings and structures within a road/rail level crossing sight triangle			
All zones	(1) Activity status: RDIS Activity-specific standards: Nil. Council's discretion is restricted to the following matters: (a) The extent to which the safety and efficiency of rail and road operations will be adversely affected; (b) The outcome of any consultation with KiwiRail; and (c) Any characteristics of the proposed use that will make compliance unnecessary.	No level crossings within the vicinity of the Site.	N/A

The assessment above has identified eight non-compliances with the transportation rules of the District Plan. These non-compliances relate to the minimum separation between vehicle crossings, minimum available sight distance, an access running parallel to a road corridor, some carparks to remain unsealed and unmarked, the expected level of traffic generation, allowance for works within the road reserve, and the design of some private road corridors not complying with the requirements outlined in the District Plan.

The first non-compliance relates to the separation distance between adjacent crossings. The District Plan requires adjacent vehicle crossings to have minimum 80m and 20m separation on roads with 80km/h and 50km/h posted speed limits respectively. Some of the vehicle crossings along Duncan Road and Road 6 do not comply with this requirement, however the number of non-compliant vehicle crossings has been minimised by providing

combined vehicle crossings on the boundary of two adjacent lots wherever possible. Some of the proposed vehicle crossings also provide non-compliant sight distances. It is not possible to comply with the required at some locations such as the Tamahere Drive/Pencarrow Road corner, and the curve along Hooker Road, where the road alignment limits visibility. It should be noted that for these locations, vehicle crossings have been strategically located (as far away from the curve as possible) to provide the maximum available sight distances and reduce the non-compliance to be minimal. Given the mitigation factors, these non-compliances are unlikely to have any significant adverse effect on the safe and efficient operation of the road corridor or the vehicle crossing.

The second non-compliance relates to the alignment and location of the Type 1 Road corridor which runs parallel within 30m to the Pencarrow Road corridor. It is noted that this road frontage of the Site will be heavily landscaped along its entire length, hence mitigating the risk that drivers travelling along Pencarrow Road are distracted or disturbed by vehicle movements along the access.

The third and fourth non-compliance relates to the overflow carparks within the Site remaining unsealed and unmarked. As outlined in Section 9.5 of this report, all formal carparks within the Site will be sealed and marked, apart from the overflow carparks which will only be utilised on the large event days occurring few times each year. It is noted that on these large event days, parking wardens, and appropriate traffic management will be provided both within the Site and on the surrounding road corridors to assist visitors on where to park. Given the rare use of these overflow carparks, and the rural nature of the surrounding Sites, it is considered to be appropriate to retain these carparks as unsealed and unmarked.

The fifth non-compliance relates to the expected level of vehicular movement. Given the large scale, and the various activities proposed within the Site, it will generate more than 200 vehicle movements per day. As such, extensive SIDRA modelling has been carried out to understand how the additional traffic volumes will impact the existing roading network and intersections in vicinity of this Site. As shown and extensively discussed in section 10.4, the additional traffic volumes do not have any considerable adverse effects on the existing roading network, hence this non-compliance is only technical in nature.

The sixth non-compliance relates to certain design elements of the private road corridors within the Site as two of the proposed road corridors do not comply with requirements outlined in District Plan Table 13. It is noted that despite the non-compliances, each road corridor been designed to serve it's purpose, and vehicle tracking has been carried out to ensure each road provides the required facilities to accommodate the expected vehicle

movements. As such, these non-compliances are unlikely to have any significant adverse effect on the safe and efficient operation of vehicle movements within the Site.

The remaining two non-compliances are all related to the proposed works within the existing road reserve including the construction of the right-turn bays on Hooker Road and Pencarrow Road, provision for a new public road corridor to be vested with Waikato District Council and assessment. As discussed throughout the report, these proposed works within the road reserve are expected to improve safety for both background traffic motorists travelling to/from the Site. The public road has been designed to gain access off Duncan Road to limit an additional vehicle crossing over the Te Awa River Ride.

13 Construction Transport Effects

A Draft Construction Traffic Management Plan (CTMP) has been prepared by BCD Group to support the substantive Fast-track application and is included as **Attachment 3** to this ITA. The CTMP establishes the overarching principles for managing construction-related transport effects and is intended to form the basis of the final CTMP to be prepared by the appointed contractor prior to the commencement of physical works.

Construction is currently anticipated to commence in late 2027 and occur over several construction seasons. The principal construction activities include enabling works, bulk and detailed earthworks, construction of the racing and training tracks, installation of stormwater and other infrastructure, internal roads and parking areas, building construction, landscaping and external access / intersection works. Indicative construction traffic volumes vary by phase, with the draft CTMP identifying approximately 200-500 vehicle movements per day during enabling works, 100-300 movements per day during bulk earthworks, and 300-500 movements per day during detailed earthworks and landscaping. These estimates will be refined once the detailed construction methodology, programme and contractor arrangements are confirmed.

The principal construction transport effects will arise from the delivery of construction materials, plant and equipment; importation of sand and aggregates; concrete and structural deliveries; workforce travel; and temporary interaction between construction vehicles and existing road users. The final CTMP will confirm the construction access locations and heavy vehicle haul routes once material sources and contractor arrangements are known. In selecting those routes, appropriate road hierarchy and function will be considered, unnecessary use of local roads and sensitive areas will be minimised, and routes suitable for heavy and over-dimension vehicles will be preferred.

Particular attention is given in the CTMP to the interface between construction activity and existing users of the surrounding transport network. Construction access locations will be selected having regard to visibility, gradients, vehicle types and volumes, construction staging and safe pedestrian and cyclist movements. Te Awa River Ride is intended to remain open as far as practicable, with controlled crossing points and additional traffic management measures provided where construction vehicles cross the path. Emergency access, school bus services, neighbouring property access and other existing road users are also specifically addressed.

The CTMP also establishes requirements for temporary traffic management, workforce parking, road protection and maintenance, stakeholder communication and monitoring. It is expressly intended to be a live document that will be progressively updated as the design, construction sequence, access arrangements, material sources, haul routes and contractor methodology are confirmed. The draft identifies that the final CTMP will also confirm matters including the construction programme, responsible personnel, heavy vehicle routes, construction access points, construction traffic volumes, stakeholder management and pre- and post-construction road-condition assessment and remediation requirements.

On this basis, the construction-related transport effects of the Project are considered capable of being appropriately managed through the measures established in the attached CTMP and its subsequent contractor-led updates. The effects will be temporary in nature and, subject to implementation of the CTMP and any required stage-specific temporary traffic management plans, are not expected to result in enduring adverse effects on the safe and efficient operation of the surrounding transport network.

14 Conclusion

This ITA has assessed the transport implications of the Waikato Thoroughbred Racing Project located in Tamahere. The Project is a regionally significant equine and racing precinct that combines daily training and employment activity, residential and commercial development, horse-float and servicing movements, and intermittent racing and bloodstock events.

The substantive masterplan provides a clear access hierarchy using Pencarrow Road, Hooker Road and Duncan Road. The arrangement separates major public and commercial movements from trainer / horse-float traffic and provides dedicated access for the senior-living and residential components.

The traffic assessment has been updated to reflect the substantive development schedule and provides a transparent basis for SIDRA testing of the Site accesses and key external intersections, including the Tamahere Interchange and the Cambridge Road / Hooker Road / Racecourse Road system. The largest feature events are appropriately treated as infrequent managed events rather than as the permanent-network design case, provided that a robust event-management condition framework is secured.

Southern Links is not relied upon in reaching the transport conclusions because its delivery timing and funding are presently uncertain. This ensures that the assessment is not dependent on speculative future infrastructure.

Overall, the Project is expected to be capable of being established with transport effects that are appropriately managed through access design, on-site parking, event management, and construction management.

Hughes Traffic & Transportation Limited

Attachment 1: Roading Drawings

Attachment 2: SIDRA Outputs

Attachment 3: Construction Traffic Management Plan

Attachment 4: Event Traffic Management Plan