

Integrated Transport Assessment Prepared for

KĀINGA ORA

29 Hamilton Street, East Gore

May 2023



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Introduction

- 1. Kāinga Ora has commissioned Novo Group to prepare an Integrated Transport Assessment (ITA) for the development of 24 residential units at 29 Hamilton Street, Gore.
- 2. This report provides an assessment of the transport aspects of the proposed development. It also describes the transport environment in the vicinity of the site, describes the transport related components of the proposal and identifies compliance issues with the transport provisions in the District Plan. It has been prepared broadly in accordance with the Integrated Transportation Assessment Guidelines specified in New Zealand Transport Agency Research report 422, November 2010 and other relevant best practice guides.
- The site is located to the east of Hamilton Street between Oxford Street (to the south) and Waverley Street (to the north). The site also has right-of-way access to Oxford Street. This is identified in Figure 1 below. A copy of the site plan is included in Appendix 1.



Figure 1: Site Location (source: intramaps.co.nz)

Transport Environment

- 4. The application site has frontage and access to two roads including Hamilton Street to the west and Oxford Street to the south.
- From a transport perspective, it is relevant to note that the site has previously been occupied by the Longford Tavern, Bottle Store and Function Centre. This included more than 50 marked car parking spaces and had vehicle access from both Hamilton Street and Oxford Street.



Road Network

Hamilton Street

6. The key characteristics of Hamilton Street are summarised in **Table 1** below.

Table 1: Road Characteristics - Hamilton Street

Key Feature or Characteristic	Comment
Road Classification	Hamilton Street is not listed as an arterial road in Table 5.3 of the District Plan. It is referred to as a <i>Collector and Local Road</i> .
	(The geometry and directness of Hamilton Street relative to other streets in the locale suggests it operates as a collector road in a Gore context)
Cross-Section Description	Two lane road (one lane in each direction) with a painted centreline.
	11.4m wide carriageway (kerb to kerb).
	5.7m wide lanes with unrestricted parking against the kerb face. (Typically negligible parking demand).
	1.4m (min) footpath on both sides with variable berms (some grass, some planted, some metalled).
	(See photographs attached as Figure 2 and Figure 3 below)
Traffic Volumes	1,800vpd (2% HCV), estimated 18/05/2022 by Mobile Road.
Speed Limit	50 km/h
Cycling Infrastructure	There are no dedicated cycle lanes or other infrastructure along Hamilton Street near the site.
Pedestrian Infrastructure	Sealed footpaths along both sides
Public Transport	No public transport infrastructure or services
Road Safety	The NZTA Crash Analysis System (CAS) reveals that there have been two reported crashes along Hamilton Street in the vicinity of the site in the five-year period ending 5 May 2023.
	Crash 2020173632 occurred on Sunday 20/12/2020 at 9:45am. The police report noted that driver lost control while doing a burn out along the road and crashed into fence. Non injury.
	Crash 201981932 occurred on Monday 30/09/2019 at 6:30pm. The car collided with a post. Witnesses stated that two cars with young drivers were involved with one car towing the other away. Non injury.
Other Notable Characteristics	Grace Church located opposite.
	Stop control at the intersection with SH1 (priority to SH1). Flush medians and right-turn bays provided on SH1.





Figure 2: Hamilton Street (Outside the Site looking South)



Figure 3: Hamilton Street (Outside the Site looking North)



Oxford Street

Table 2: Road Characteristics - Oxford Street

Key Feature or Characteristic	Comment
Road Classification	Oxford Street is not listed as an arterial road in Table 5.3 of the District Plan. It is referred to as a <i>Collector and Local Road</i> .
	(The geometry and low traffic volume suggests it operates predominantly as a local access road in a Gore context)
Cross-Section Description	Two lane road (one lane in each direction) with no painted centreline.
	10.7m wide carriageway (kerb to kerb).
	Unrestricted parking against the kerb face. (Typically negligible parking demand).
	1.4m footpath on both sides generally with a grass berm.
	(See photographs attached as Figure 4 and Figure 5 below)
Traffic Volumes	445vpd (14.5% HCV), estimated 18/05/2022 by Mobile Road.
Speed Limit	50 km/h
Cycling Infrastructure	There are no dedicated cycle lanes or other infrastructure along Oxford Street near the site.
Pedestrian Infrastructure	Sealed footpaths along both sides
Public Transport	No public transport infrastructure or services
Road Safety	The NZTA Crash Analysis System (CAS) reveals that there has been one reported crash along Oxford Street in the vicinity of the site in the five-year period ending 5 May 2023.
	Crash 2021206031 occurred on Thursday 25/11/2021 at 3:00pm. A vehicle has reversed from a site and crashed into a parked vehicle. Non injury.
Other Notable Characteristics	Kindergarten located 40m west of the site (+100m access)
	Pedestrian (Zebra) crossing located at the eastern end (140m east of the site access) opposite East Gore School.
	Watch for pedestrians/School and Zebra permanent warning signs located on approach to Wentworth Street.
	Give-way control at intersection with Hamilton Street (Priority to Hamilton Street).





Figure 4: Oxford Street (Outside the Site looking West)



Figure 5: Oxford Street (Outside the Site looking East)



The Proposal

- 7. It is proposed to redevelop the site as follows:
 - 24 Social Housing units, including:
 - o 7 x 1-bedroom units;
 - 10 x 2-bedroom units;
 - 4 x 3-bedroom units;
 - o 2 x 4-bedroom units; and
 - 1 x 5-bedroom unit.
 - 30 on-site car parking spaces. Each unit will be provided with at least one car parking space including their own access and vehicle crossing (Unit 1, 2, 3, 12, 14 & 24 will each be provided with two parking spaces).
 - Cycle parking can be provided within a shed associated with every unit.
 - 18 Units¹ will be served by a new vested cul-de-sac road from Hamilton Street. This will include a 6.0m carriageway width (kerb to kerb) set within an 11.0m reserve. A 1.4m footpath will be provided along both sides. The cul-de-sac bulb has a diameter of 19m (kerb to kerb).
 - 6 Units² will be served from an existing right-of-way (ROW) from Oxford Street. This will include a minimum trafficable width of 6.0m and a footpath along one side. A hammerhead turning design is provided at the far end.
- 8. Car parking survey and design guidance suggests the demand will be 7-21 spaces over the entire site, including all resident and visitor demand³.
- 9. The site as a whole is estimated to generate 72-96 vehicle movements per day, including seven vehicle movements in the AM peak hour and four in the PM peak hour⁴. When distributed over the two access points, the total traffic generation is estimated to be:
 - Hamilton Ave (18 Units) = 54-72 vehicle movements per day; and 5 in the AM peak hour and 3 in the PM peak hour; and
 - Oxford Street (6 Units) = 18-24 vehicle movements per day; and 2 in the AM peak hour and 1 in the PM peak hour.

¹ Including Units 1-15, 22-24.

² Including Units 16-21.

³ This is based on Christchurch Council Social Housing Surveys which revealed an average of 0.28 cars parked per unit; but recommended 1 space per unit with 2 bedrooms or more and 0.5 spaces per unit for 1-bedroom.

⁴ This is based on Christchurch City Council Social Housing Surveys which concluded that social housing complexes generate 3-4 vehicle trips per day; and 0.28 trips per unit in the AM peak and 0.18 trips per unit in the PM peak.



District Plan Compliance Assessment

- 10. The site is located in the **Residential A Zone**. An assessment of compliance against the Chapter 5 Transportation rules of the District Plan has been undertaken (refer to **Appendix 2**). No non-compliances have been identified. Specifically, the following points are noted in relation to the three Transportation Rules:
 - No car parking spaces are required. Rule 5.9.2 states that the provision of no off-street car
 parking for all land use activities within the Gore urban environment is a permitted activity;
 - There are no loading requirements for residential activities in urban zones (Rule 5.9.3); and
 - There are no District Plan transportation rules that refer to access in Residential zones (Rule 5.9.1). It is noted that Table 5.2 (P.5-2) refers to access standards for collector and local roads which refers the Gore District Council Subdivision and Development Bylaw 2011. However, there is no associated District Plan rule that points to this Table.

Subdivision, Land Use and Development Bylaw 2019 Compliance Assessment

- 11. Although there are no breaches of any District Plan transportation rules, the assumption is that any new road, as a starting point, should align with the Gore District Council *Subdivision, Land Use and Development Bylaw*⁵. Dispensation is therefore sought for the following aspects in relation to this Bylaw:
 - 3.3.1 (Table 3.1): The proposed road reserve width of the new cul-de-sac road from Hamilton Street is 11.0m (15m required); and
 - 3.3.1 (Table 3.1): The private right-of-way from Oxford Street will serve more than 6 units (The maximum number of units permitted to be served from a private ROW is 6).
- 12. The following additional comments are specifically noted in relation to the *Subdivision, Land Use and Development Bylaw*:
 - The cul-de-sac road serves 18 units and otherwise complies with the 6.0m carriageway width, which comprises 1 x 2.5m parking lane and 1 x 3.5m traffic lane (see Table 3.1 of the *Bylaw*);
 - The cul-de-sac road provides a compliant 1.4m footpath, noting that this is only required on one side. A footpath is provided on both sides (see Table 3.1 and 3.3.11.1 of the *Bylaw*);
 - A footpath is provided alongside the ROW to Oxford Street (see 3.3.11.1 of the *Bylaw*);
 - The cul-de-sac road is anticipated to generate less than 99 vehicle movements per day (see Table 3.1 of the *Bylaw*);
 - The cul-de-sac road has a minimum carriageway width of 6.0m for a distance of more than 10m from the Hamilton Street road boundary to provide passing opportunities for opposing vehicles (see Table 3.1, Note 3b of the *Bylaw*);

⁵ The District Plan text refers to the Gore District Council Subdivision and Development Bylaw 2011, however this was revised in 2019. For the purposes of this assessment the latest (2019) version is referred to.



- The cul-de-sac road has lot corner splays of 4.0m at the Hamilton Street intersection (see 3.3.7 of the Bylaw);
- Pedestrian access is provided for from both a mid-location and the cul-de-sac head to the ROW and out to Oxford Street (see 3.3.8 and 3.3.11.1 of the Bylaw);
- Traffic signs and road markings can be agreed with Council as the future road controlling authority. A no-stopping restriction (broken yellow lines) has been suggested along the southern side of the road and around the cul-de-sac head. (See 3.3.12 of the *Bylaw*);
- A hammerhead / Y shaped turning head is provided at the far end of the ROW (see 3.3.16 & Figure 3.4 of the Bylaw);
- A cul-de-sac with a kerb to kerb diameter of 19m is provided (see 3.3.16 & Figure 3.3 of the Bylaw); and
- All regularly used vehicle crossings serving residential sites will typically have a 3.5m width at the kerb (see 3.3.17 & Table 3.2 of the *Bylaw*).

Assessment of Effects

- 13. There are no District Plan transportation non-compliances.
- 14. The assessment and commentary that follows specifically addresses some information requirements raised from Council at a pre-application stage. It also provides assessment in relation to the two matters that require dispensation in relation to the Gore District Council Subdivision, Land Use and Development Bylaw.

Traffic Generation

- 15. The likely traffic generation has already been quantified in **Paragraph 9**. This has been based on Christchurch City Council *Social Housing Traffic Surveys*⁶ and identifies an 8:30-9:30 AM peak of 0.28 trips per occupied unit; and a 4:30-5:30 PM peak of 0.18 trips per occupied unit. The survey conclusion suggests that a daily trip rate of 3-4 vehicle trips per unit is appropriate.
- 16. Table 3 uses this survey information and applies it to the proposed development.

Table 3: Estimated Traffic Generation

	AM 8:30 – 9:30 (0.28 trips/unit/hour)	PM 4:30 – 5:30 (0.18 trips/unit/hour)	DAILY (3-4 trips/unit/day)
Hamilton Street cul-de- sac road (18 units)	5	3	54-72
Oxford Street Private ROW (6 units)	2	1	18-24
TOTAL	7	4	72-96

⁶ Christchurch City Council Social Hosing Traffic Surveys (2013), prepared by Abley Transportation Engineers



- 17. The overall site generated traffic during the peak hours is considered to be low and even lower when distributed to each access. An access generating 2-5 trips during the morning peak equates to one vehicle arriving or departing every 12-30 minutes. Again, this level of traffic is very low and able to be easily accommodated by the adjoining local road network.
- 18. The traffic generation from social housing units is considerably lower when compared to standard residential houses and does not align with the typical network peaks which usually align with standard residential 'home-to-work' trips and vice versa. This means that the traffic generated by the proposal is significantly lower when compared to standard residential houses. Putting this into context, the overall quantum of hourly and daily traffic generated from 18 Kāinga Ora units on the proposed cul-de-sac road would be akin to 3-7 houses⁷.
- 19. The previous use of the site is also a relevant consideration. This included use as a Tavern, Bottle Store and Function Centre. The traffic generation of this activity in unable to be quantified, however the historical aerial photography reveals at least 50 marked on-site car parking spaces, which suggests that the overall generation could easily have been ten times greater than that of the proposed social housing.

Access

20. With the exception of Unit 1 & 24 which have direct driveway access to Hamilton Street, all vehicles will be able to safely and efficiently manoeuvre onto and off the cul-de-sac road or the right-of-way such that they can then approach either Hamilton Street or Oxford Street in a forward motion. Unit 1 and 24 will require a direct reverse manoeuvre onto Hamilton Street. Given the good lines of sight (including the flat and horizontal alignment) and low traffic volumes (< 2,000 vpd), these vehicles will be able to reverse off with relative ease and without compromising safety.

Car Parking

- 21. The District Plan does not require any car parking. From the outset, we note the tension between the District Plan rules (as directed by the NPS-UD 2020) and the thrust of some Council staff comments made at a pre-application stage. In our opinion, the NPS-UD (and the subsequent changes to the District Plan) are clear that is, there is no longer any minimum car parking requirements, or any ancillary objectives, policies or assessment matters relating to minimum car parking in the Gore urban areas. In addition, the directive from the NPS-UD 2020 is that Councils are responsible with managing any effects associated with the supply and demand of car parking.
- 22. The Gore District Council *Subdivision, Land Use and Development Bylaw* also does not specify a minimum number of kerbside car parking spaces. The Bylaw does however provide for a cul-de-sac road design where it serves less than 20 units and this consists of a 6.0m carriageway. This carriageway is intended to provide for a 1 x 2.5m parking lane and 1 x 3.5m traffic lane. This has been provided.
- 23. Notwithstanding the complying carriageway width which is intended to cater for some kerbside car parking, and the nil District Plan parking requirement, the proposal includes 30 on-site car parking spaces. This includes at least one car parking space for each unit. As discussed in **paragraph 7**, the larger Units 1, 2, 3, 12, 14 & 24 will each be provided with two parking spaces. The carriageway also

⁷ This is based on a standard residential house generating around 10 trips per day; and one movement during each of the AM and PM peak hours.



provides for at least eight further cars to park along the northern kerb of the cul-de-sac road (see **Figure 6** below).

24. The Christchurch City Council *Social Housing Traffic Surveys* referred to above also analysed the car parking demand. This equated to around 0.28 cars parked per unit, which amounts to a demand of only seven spaces. Ultimately, the survey conclusion included a higher design recommendation of one space for units with two or more bedrooms; and 0.5 spaces for one-bedroom units and bedsits. Given that seven one-bedroom units are proposed, the design guidance implies a total demand for 21 spaces⁸. This includes all visitor demand. This can easily be accommodated by the 30 on-site car parking spaces plus the eight spaces available along the cul-de-sac road.

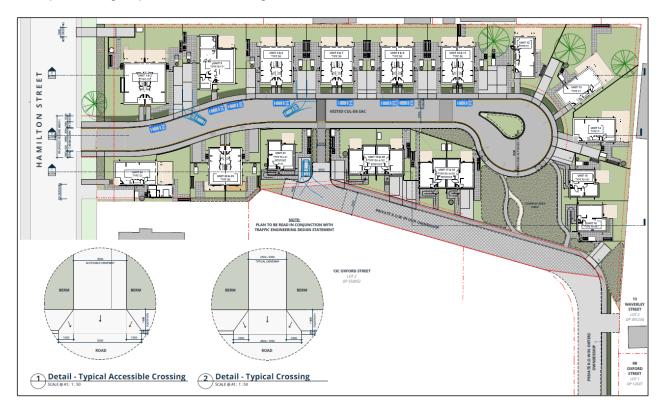


Figure 6: Car Parking

Cul-de-sac Road Design

- 25. As already discussed above, the cul-de-sac road design complies with the Gore District Council Subdivision, Land Use and Development Bylaw in all respects, except for the overall reserve width (15m required, 11m provided). It is reiterated that the proposed carriageway width fully aligns with the Bylaw requirements.
- 26. With regard to the reserve width, in our experience this is always greater than the carriageway width so that sufficient footpath and 'berm' width remains available for servicing/utilities and/or amenities (such as grass or street trees). As traffic engineers we typically do not comment on whether the required berm width is sufficient for utilities or amenities to be provided. Other experts have provided commentary on these matters. However, as noted above, the 18 units that are accessed via the cul-de-sac road would generate 54-72 vehicle movements per day; and five in the AM peak hour and three in the PM peak

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⁸ There are 7 x 1-bedroom units (=3.5 spaces) & 17 x ≥2-bedroom unit (=17 spaces), which totals 21 spaces



hour. The estimated parking demand is also considered to be less than the overall supply such that the lack of an additional 4.0m of reserve width would be inconsequential from a traffic engineering perspective.

- 27. At the pre-application stage, the Council raised potential concerns about cars attempting to park on the narrow berms or footpaths. Given that grass berms are only proposed on the northern side of the road, and that they are 1.6m wide, it follows that there is not sufficient space for a car to park. Arguably, the provision of an additional 4.0m of berm space and therefore a fully compliant legal road with a reserve width of 15m would encourage more parking by virtue of there being more space and so the concern would otherwise still remain.
- 28. Gore District Council *Roading Bylaw 2011* (clause 3.4.3) states that no person shall park a vehicle on a grass verge where it causes damage. It also states that vehicles cannot park on grass verges during the hours of darkness. Similarly, clause 3.4.21 states that it is an offence to park a vehicle on or over any part of a footpath. In this respect, the existing *Roading Bylaw* provides sufficient direction to hinder parking in these locations. Furthermore, landscaping and tree plantings can also be used as a physical and visual cue to hinder parking on the berms. These have been provided.

Private ROW Width

- 29. The Gore District Council *Subdivision, Land Use and Development Bylaw* sets out the requisite road and ROW widths. Private ROW's are capped at a maximum of six units. The ROW from Oxford Street will serve six Kāinga Ora units.
- 30. The existing ROW will be reconfigured to provide a 6.0m carriageway, plus a separate footpath. The footpath will connect through to the cul-de-sac road. The 6.0m trafficable width is sufficient for two vehicles to pass and is akin to the carriageway width for the cul-de-sac road.
- 31. The likely traffic volumes from six units on the ROW are provided for in **Table 3**. This amounts to 18-24 daily movements and 1-3 movements in the respective afternoon and morning peaks hour periods. This level of traffic is very low.
- 32. From a transport perspective, it is also relevant to note that the site has previously been occupied by the Longford Tavern, Bottle Store and Function Centre. This included more than 50 marked car parking spaces and has enjoyed vehicle access via the Oxford Street ROW leg. When comparing both activities, it is clearly apparent that the overall traffic volumes (and consequential effects) from the proposal will be significantly less than what has occurred in the past. This is a positive.

Conclusion

- 33. The proposal to redevelop the site with 24 Kāinga Ora housing units results in no District Plan traffic non-compliances.
- 34. A dispensation is being requested for the Gore District Council *Subdivision*, *Land Use and Development Bylaw* with regards to the reserve width of the proposed cul-de-sac road and the private right-of-way. The proposed road and right-of-way will both have 6.0m carriageways/formed widths, providing enough space for passing and segregated footpaths, thereby maintaining the safety of the traffic environment. The anticipated traffic volumes are low, and there will be sufficient on-site and on-street parking to meet the projected parking demand.

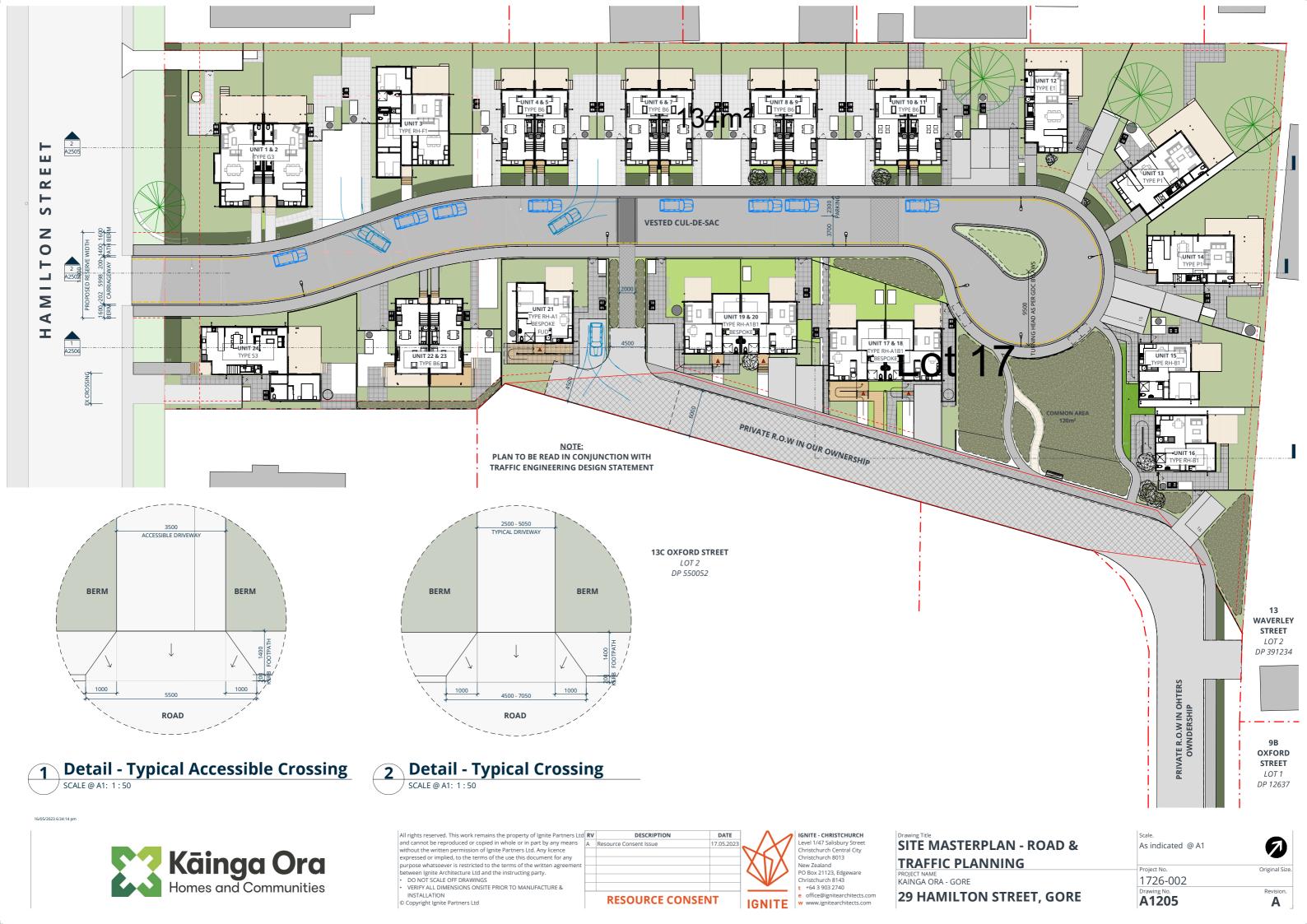


35. Accordingly, the proposal can be supported from a traffic perspective and the effects on the traffic environment is considered to be **less than minor**.



Appendix 1

Application Plans



Kāinga Ora 29 Hamilton Street, East Gore



Appendix 2

District Plan Transport Compliance Assessment



Gore District Plan – Transportation (Chapter 5)	Comment	Comples?
5.9 Rules		
5.9.1 Access		
here the site is located in a Rural Zone and adjoins a state highway, site access to the state highway is a restricted etionary activity.	The site is not in a rural zone.	Yes
(2) Deleted	The site is not in the Gore Commercial Area.	
(3) Subject to paragraph (3) below in relation to the Gore Commercial Area, access is a permitted activity subject to	The site is not in the Commercial Zone located in the Gore Township.	
adequate provision being made for manoeuvring on-site, so that in the case of accesses onto roads classified as arterial roads within the roading hierarchy (Table 5.3), vehicles can enter and leave the site in a forward direction.	(There is no rule reference to the Text associated with Table 5.1, 5.2, & 5.3), although assessment is still	
(4) Within that part of the Commercial Zone located in the Gore township:	provided).	
(a) identified as "Pedestrian Frontage" no vehicle access shall be provided from Main Street (State Highway 1) or Hokonui Drive (State Highway 94)		
(b) other than referred to in (a) above, vehicles shall enter and leave the site in a forward direction.		
5.9.2 Off Street Car Parking Requirements		
(1) The provision of no off-street car parking for all land use activities within the Gore and Mataura Urban Environment is a permitted activity.	Off-street car parking is proposed.	Yes
(2) In areas outside the Gore and Mataura Urban Environment all land use activities meeting the parking requirements	The site is located in the Gore Urban Area.	
specified in the table (Table 5.4) below and complying with 5.9.2(3) to 5.9.2(7) is a permitted activity.	Car parking all provided on the same site.	
(3) Parking spaces are to be provided on the site of the activity requiring them.	Hamilton Street and Oxford Street are not classified as arterial roads.	
(4) The design of all spaces shall comply with the appropriate dimensions in Diagram 5.13.	arterial rodge.	
(5) For any site zoned Rural, on-site manoeuvring shall be provided so as to ensure that no vehicle is required to reverse from or onto a state highway.		
(6) Where staff parking is to be provided, all such spaces shall be so identified.		
(7) Any off-street parking area providing for more than 5 cars shall comply with the following standards:		
(a) For every 20 square metres of off-street parking, one square metre of landscaping either trees or shrubs shall be provided.		
b) Off-street parking located adjoining or within Residential Zones, shall be provided with a solid screen 1.8 metres above the level of the parking, of a design that prevents car lights from shining onto adjoining sites.		



Gore District Plan – Transportation (Chapter 5)	Comment	Comples?
(c) On-site manoeuvring shall be provided so as to ensure that no vehicle is required to reverse onto or off any arterial road.		
(d) Stormwater shall be contained and treated.		
(e) The surface of the car park area and all accesses shall:		
(i) be maintained to an all weather dust free standard; and		
(ii) avoid the tracking of loose metal, mud or other material onto any public road.		
(f) The access(es) to parking areas shall be clearly defined and the remainder of the property road boundary shall have physical barrier which separates the parking area from the road.		
(g) On-site manoeuvring shall be provided for a 90 percentile car (as shown on Diagram 5.14) so that all turning manoeuvres can be undertaken in one movement.		
5.9.2 Vehicle loading		
(1) The following land use activities shall provide for the loading and unloading of vehicles on-site (Table 5.5):	No loading required for residential activities	Yes
(2) Where vehicle loading or unloading is provided as part of any activity, the following standards shall apply:	No diagram 5 is provided	
(a) Access to loading facilities shall be appropriate for the type of vehicles servicing the site, but in all cases the minimum standard specified for two axled trucks in Diagram 5 shall apply.(b) Entrance to and egress from the site by vehicles using the loading facility shall be by forward direction.	(FYI, the cul-de-sac head aligns with the 19m diameter in the Bylaw and can accommodate a MRV)	