High Level Transportation Advice

3 Brick Hill Road, 18 Noyna Road, Sawyers Bay

Prepared for	K&L Accommodation Ltd
Job Number	KLAL-J001
Revision	A
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Reviewed by	Dave Smith, Technical Director, Transportation Planning

1. Introduction

Abley was engaged by K&L Accommodation Ltd to provide traffic and transportation advice in respect of the proposed rezoning of 3 Brick Hill Road and 18 Noyna Road, Sawyers Bay from Rural to Residential.

1.1 Scope

This technical note is a high-level assessment of the transportation effects of the proposed rezoning. This is not intended to be read as an Integrated Transport Assessment (ITA) report, but rather is intended to provide a high-level assessment of the transport issues associated with rezoning the land and offers potential solutions to these issues.

1.2 Declaration

For completeness, the report writer wishes to declare their prior involvement with providing transportation advice in relation to this site in their prior capacity as a Council Officer. Note that this advice was provided on 31st March, which was prior to the report writer applying for a new position at Abley. On that basis, Abley is satisfied that there are no actual or perceived conflicts of interest.

2. Existing Site Information

2.1 Locality

The site is located between Noyna Road and Brick Hill Road as shown in Figure 2.1. The site is 3.4ha in area and is currently zoned Rural Hill Slopes in the Dunedin 2GP. It is adjoined by Township and Settlement zoned land to the northeast, Rural Residential 1 zoned land to the southwest, and Industrial zoned land to the east. Sawyers Bay School is within 200m walking distance to the northeast of the site.

Figure 2.1 Site Location (source: DCC Council Rates Maps).

3. Existing Transportation Network

3.1 General Description

The site has frontage to Brick Hill Road along its north-western boundary and Noyna Road along its south-eastern boundary. Noyna Road is typically a single lane two-way road that intersects with Sir John Thorn Drive (SH88) via a priority controlled 'GIVE WAY' intersection.

Brick Hill Road provides access into Sawyers Bay township via Blanket Bay Road and Stevenson Avenue. Blanket Bay Road intersects with SH88 in two separate locations and runs largely parallel to SH88. There is a bridge on Brick Hill Road / Stevenson Avenue, adjacent to the subject site where the road formation reduces to approximately 4.8-5.0m wide.

It is noted that the SH88 Dunedin to Port Chalmers Safety Improvement includes provision for a 3.0m wide and well-lit shared walking path between Port Chalmers and Dunedin. This is currently under construction and will improve safe provision for pedestrians and cyclists in the wider area, including new residents and visitors to the development, and will make walking and cycling a more attractive and feasible mode of transport. Bus stops are located directly adjacent to the site on SH88.

3.2 Road Classifications

The classification of the surrounding roads in the 2GP Road Classification Hierarchy is shown in Table 3.1, below.

Table 3.1 2GP Road Classification Hierarchy

Road	Classification
Brick Hill Road	Local Road
Stevenson Avenue	Local Road
Blanket Bay Road	Local Road
Noyna Road	Local Road
Sir John Thorn Drive (SH88)	Strategic Road

3.3 Traffic Volumes

The estimated average annual daily traffic volumes (AADT) for the adjacent roads are shown in Table 3.2, below. This data is sourced from the Mobile Roads website and are estimates unless indicated otherwise.

Table 3.2 Traffic volume information for adjacent roads

Road	Estimated AADT
Brick Hill Road	530
Stevenson Avenue (between Tannery Creek Bridge and Station Road)	500
Blanket Bay Road (between northern-most intersection with SH88 and Upper Junction Road intersection)	120
Blanket Bay Road (between southern and northern-most intersections with SH88).	60
Noyna Road	35
Sir John Thorn Drive (SH88)	5,612[1] (Waka Kotahi Maphub)

[1] https://maphub.nzta.govt.nz/public/?appid=31305d4c1c794c1188a87da0d3e85d04

3.4 Road Safety

Report Crash History

Waka Kotahi NZ Transport Agency Crash Analysis System (CAS) has been used to identify the reported crashes on the surrounding transport network in the most recent 5-year period (2017-2022)[2]. Figure 3.1 shows the search area.

Figure 3.1 Image showing CAS search area and output.

This search returned a total of 13 reported crashes within the above parameters. The reported crashes are summarised below in Table 3.3.

[2] https://cas.nzta.govt.nz/query-builder

Table 3.3 Summary of reported crashes

Crash road	ID	Date	Time	Description of events	Crash factors	Junction	Severity
BLANKET BAY ROAD	2022218014	4/04/2022	8:10	Truck1 WDB on BLANKET BAY ROAD hit rear end of Car/Wagon2 stop/slow for queue	-	Nil (Default)	Minor
DUNEDIN-PORT CHALMERS ROAD	2021196787	29/07/2021	8:30	SUV1 NDB on DUNEDIN-PORT CHALMERS ROAD hit rear end of Truck2 stop/slow for queue	SUV1, failed to notice car slowing, stopping/stationary	T Junction	Minor
SH 88	201815163	8/06/2018	19:35	Car/Wagon1 WDB on SH 88. Ravensbourne Rd lost control turning right, Car/Wagon1 hit non specific cliff, non specific pole	CAR/WAGON1, alcohol test above limit or test refused, lost control when turning, speed entering corner/curve	Nil (Default)	Minor
SIR JOHN THORN DRIVE	2020151507	4/05/2020	9:03	Truck1 SDB on SIR JOHN THORN DRIVE hit Car/Wagon2 turning right onto AXROAD from the left	TRUCK1, alcohol test below limit CAR/WAGON2, alcohol test below limit, failed to give way at priority traffic control, mental illness (depression, psychosis)	T Junction	Non-Injury
SH 88	201737621	12/04/2017	16:30	Car/Wagon1 EDB on Sir John Thorn Drive hit rear end of Car/Wagon2 stop/slow for queue	CAR/WAGON2, failed to notice roadworks CAR/WAGON1, failed to notice roadworks, following too closely, ENV: heavy rain	Nil (Default)	Non-Injury
BLANKET BAY ROAD	2020165483	29/05/2020	18:00	Car/Wagon1 WDB on BLANKET BAY ROAD hit Car/Wagon2 manoeuvring, Car/Wagon1 hit parked	CAR/WAGON1, too far left	Nil (Default)	Non-Injury

Crash road	ID	Date	Time	Description of events	Crash factors	Junction	Severity
				(unattended) vehicle			
BLANKET BAY ROAD	2020154258	29/05/2020	7:00	Car/Wagon1 DIRN on BLANKET BAY ROAD hit parked veh, Car/Wagon1 hit parked (unattended) vehicle	CAR/WAGON1, too far left	Nil (Default)	Non-Injury
UPPER JUNCTION ROAD	2021220916	31/07/2021	16:00	Left scene1 SDB on UPPER JUNCTION ROAD hit parked veh, Left scene1 hit parked (unattended) vehicle	-	Nil (Default)	Non-Injury
BLANKET BAY ROAD	2021188167	16/05/2021	1:38	Ute1 NDB on BLANKET BAY ROAD lost control turning left; went off road to right, Ute1 hit bank	UTE1, alcohol test below limit, drugs suspected, new driver/under instruction, swung wide on bend	Nil (Default)	Minor
BRICK HILL ROAD	2021189190	21/05/2021	9:01	Car/Wagon1 NDB on BRICK HILL ROAD lost control on curve and hit SUV2 head on, Car/Wagon1 hit drainage	SUV2, alcohol test below limit CAR/WAGON1, alcohol test below limit, other lost control, ENV: slippery road due to rain	Nil (Default)	Non-Injury
REEVES STREET	2020159581	28/07/2020	18:00	Car/Wagon1 EDB on Reeves Street missed inters or end of road, Car/Wagon1 hit bank	CAR/WAGON1, alcohol test below limit, driver over-reacted, mental illness (depression, psychosis), other lost control	Nil (Default)	Non-Injury
STEVENSON AVENUE	201987218	11/12/2019	14:30	Bus1 SDB on STEVENSON AVENUE hit obstruction, Bus1 hit fence, bus shelter	BUS1, misjudged own vehicle	Nil (Default)	Non-Injury

Crash road	ID	Date	Time	Description of events	Crash factors	Junction	Severity
STATION ROAD	2020167346	11/10/2020	4:45	Left scene1 DIRN on STATION ROAD lost control; went off road to right, Left scene1 hit parked (unattended) vehicle	LEFT SCENE1, too far right	Nil (Default)	Non-Injury

It is noted that there were no death or serious injury (DSI) crashes reported in the vicinity of the site in the most recent 5-year period. There are no ongoing crash trends that indicated underlying safety concerns in the vicinity of the site, including there being no reported crashes at or near the one-lane bridge on Brick Hill Road immediately to the north of the site.

Waka Kotahi MegaMaps

MegaMaps has been used to identify the collective and personal risk ratings for the surrounding roads[3].

Collective safety risk is defined as: risk density measured as the number of fatal and serious casualties over a distance, e.g., deaths and serious injuries (DSI) per kilometre or within a set distance of an intersection[4].

Personal Safety Risk is defined as: risk to the individual of fatal or serious casualties per million vehicle kilometres travelled[4].

[3] https://maphub.nzta.govt.nz/megamaps/
[4] https://www.nzta.govt.nz/planning-and-investment/planning-and-investment-knowledge-base/archive/201821-nltp/assessment-of-activities-by-activity-class/assessment-of-local-road-regional-and-state-highway-improvement-activities/safety-risk-definitions/

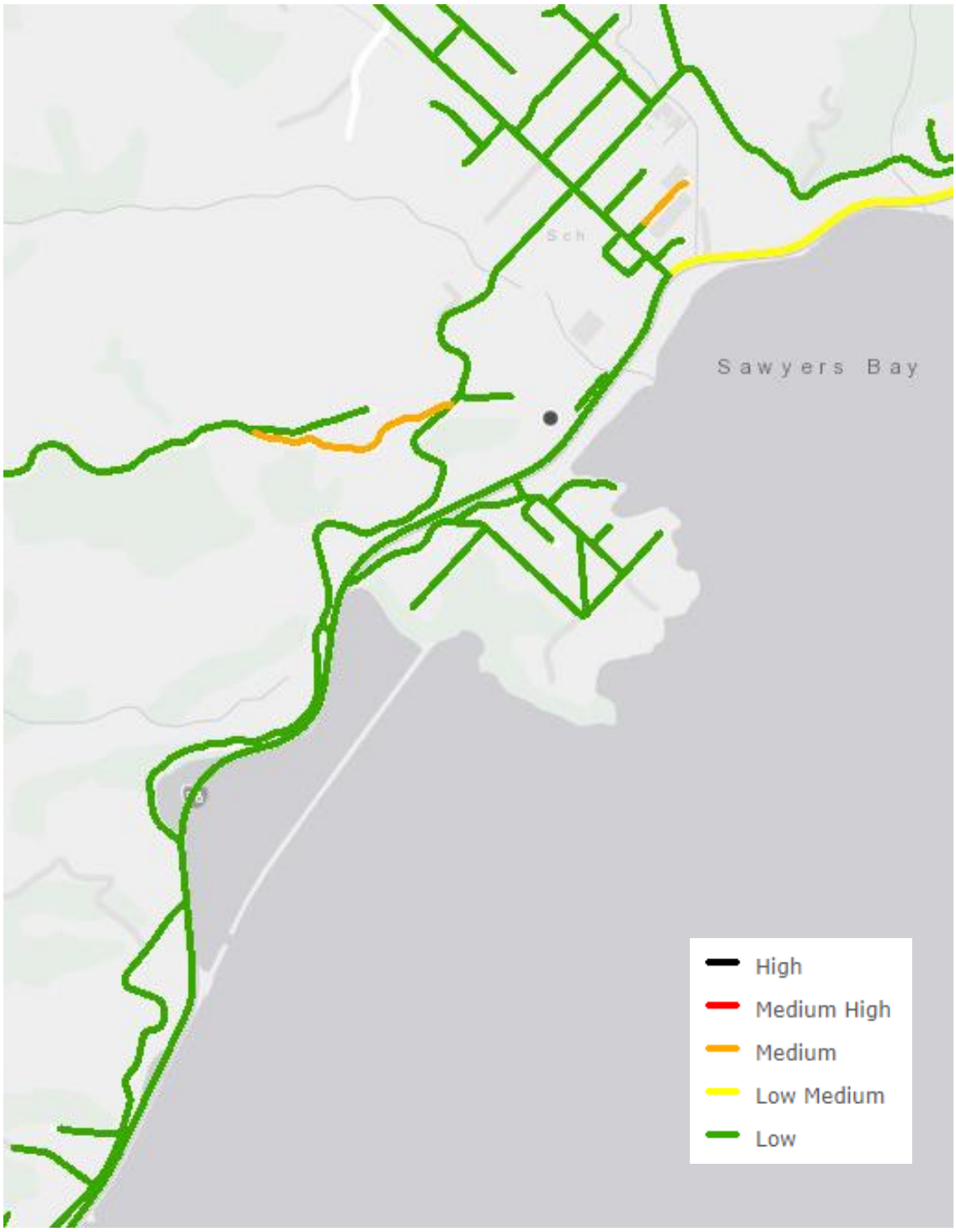

Figure 3.2 Excerpt from MegaMaps showing Collective Risk Ratings

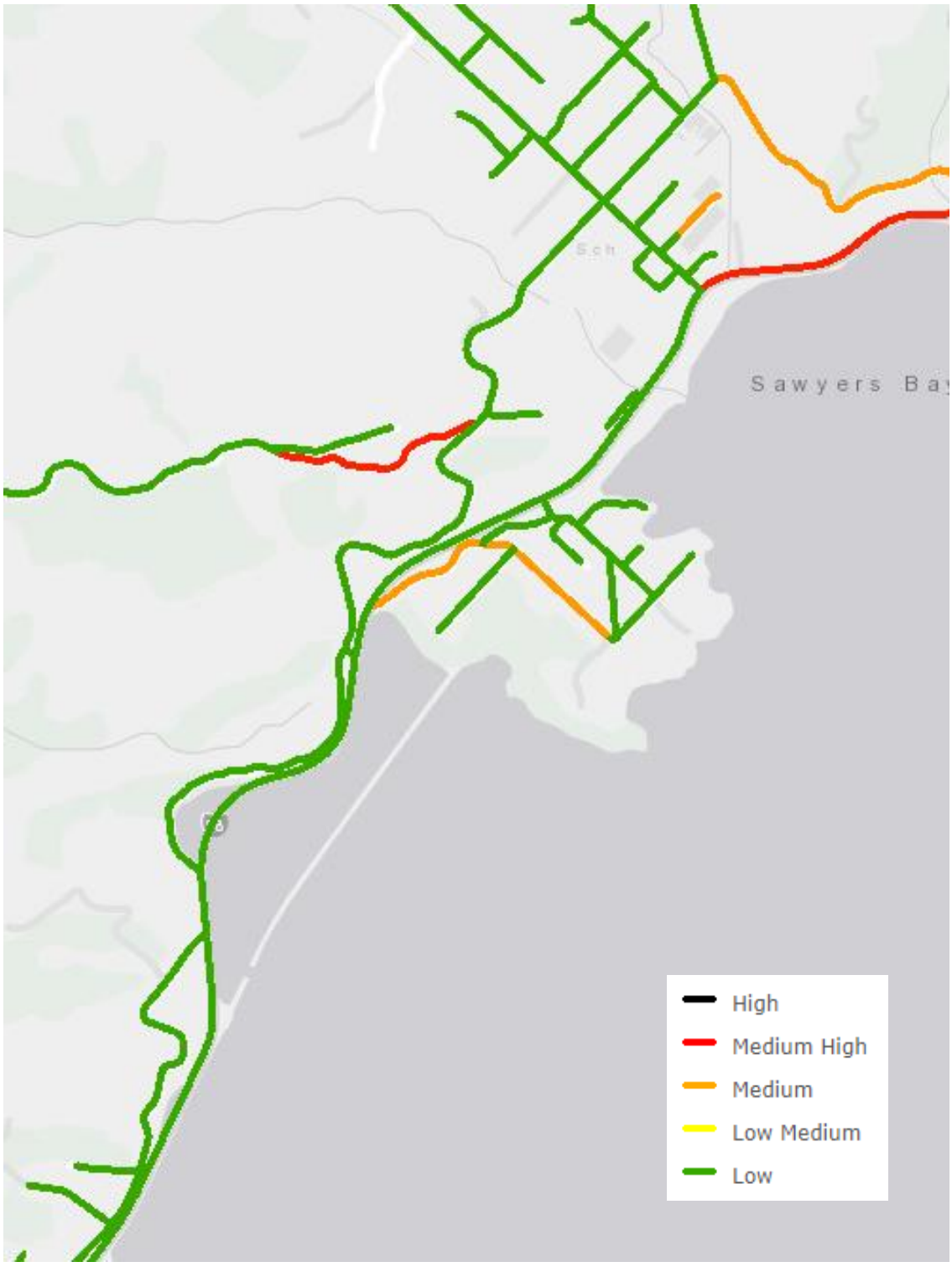

Figure 3.3 Excerpt from MegaMaps showing Personal Risk Ratings

It can be seen from Figure 3.2 and 3.3 that the key roads in the vicinity of the site have a 'low' personal and collective risk rating which demonstrates that the local traffic environment is expected to have good road safety performance.

3.5 Speed Environment

According to the Waka Kotahi National Speed Limit Register, Stevenson Avenue, Blanket Bay Road and Noyna Road all have posted speed limits of 50km/h. Sir John Thorn Drive has a posted speed limit of 80km/h[5].

The 85th percentile operating speeds on these roads are currently unknown. It is noted however, that MegaMaps records a mean operating speed of 38km/h on Brick Hill Road as it passes the subject site, and a mean operating speed of 71km/h on Sir John Thorn Drive as it passes Noyna Road.

4. Proposed Development

K&L Accommodation has lodged a submission with the Dunedin City Council (DCC) as part of the 2GP Variation 2 process, seeking to rezone 18 Noyna Road and 3 Brick Hill Road from Rural – Hill Slopes to Township and Settlement. It is understood that this would enable subdivision of the land down to minimum site sizes of 400m². In addition, it is understood that a Residential Transition Zone (RTZ) overlay would be applied to the site. This would prevent development from occurring on the site until such time that DCC was satisfied that any transportation and/or three waters servicing infrastructure constraints had been adequately addressed.

Figure 4.1 is a concept for a potential layout of a residential subdivision on the site. Road access is provided from Brick Hill Road and pedestrian access is available through the site, connecting SH88 with Brick Hill Road for pedestrians and cyclists via a connection onto Noyna Road. The concept shows 39 new residential sites, however for the purposes of this high-level assessment, a yield of 40 sites has been assumed.

[5] https://speedlimits.nzta.govt.nz/?views=Results

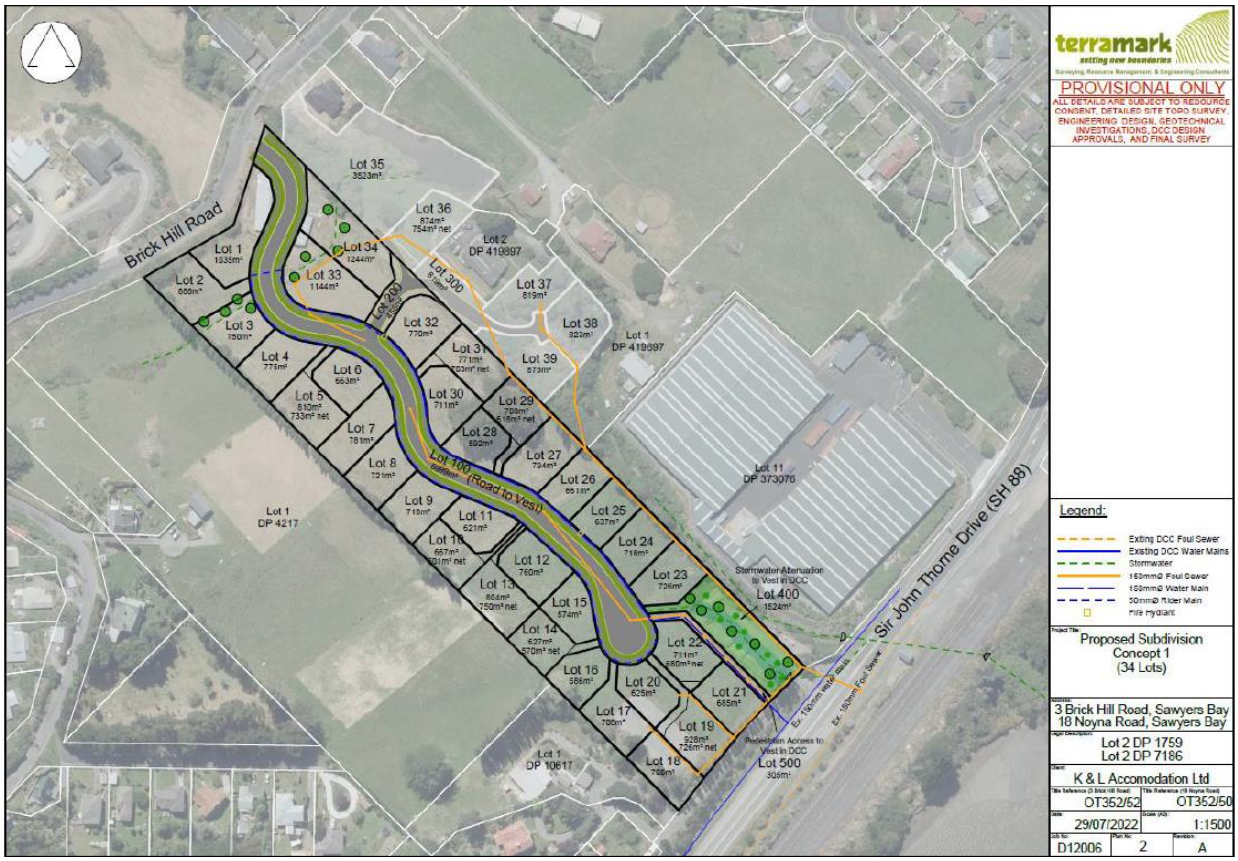

Figure 4.1 Subdivision Concept

4.1 Traffic Generation & Distribution

NZTA Research Report 453 *Trips and parking related to land use* has been used (RR453) to anticipate the likely peak hourly and daily traffic generation of the development. For outer suburban dwellings, Table C.1 of RR453 records an 85th%ile trip generation of 0.9 peak hour trips and 8.2 daily trips per dwelling. Table 4.1 depicts the likely traffic generation of the development based on this data.

Table 4.1 Development Traffic Generation Assumptions

# Of sites	Average Daily Trips	Peak Hour Trips
40	328	36

Residential traffic generation is typically tidal; that is, in the morning peak most trips are outward trips and, in the evening, peak most trips are inwards trips. It is assumed that 80% of the morning peak hour trips are outward trips and 20% are inwards trips, with the reverse applied to the evening peak hour. Table 4.2 shows this distribution for 40 lots.

Table 4.2 Incoming and outgoing trip numbers

Peak Hour	Outgoing Trips	Incoming Trips
Morning peak (8-9am)	29	7
Evening peak (5-6pm)	7	29

It is expected that most of the traffic in peak hours would be travelling to and from the Dunedin city centre. Based on the location of the proposed access, this would require one of the following routes:

- Travelling west along Upper Junction Road, then connecting to North Road, eventually accessing the city from North East Valley.
- Travelling northeast along Stevenson Avenue, then southeast along Station Road, eventually connecting to State Highway 88 via the main entry point to Sawyers Bay.
- Travelling southward along Brick Hill Road/Blanket Bay Road, eventually connecting to State Highway 88 just south of District Road.

The first two routes mentioned are shown spatially with indicative vehicular travel times and distances calculated by Google Maps in Figure 4.2.

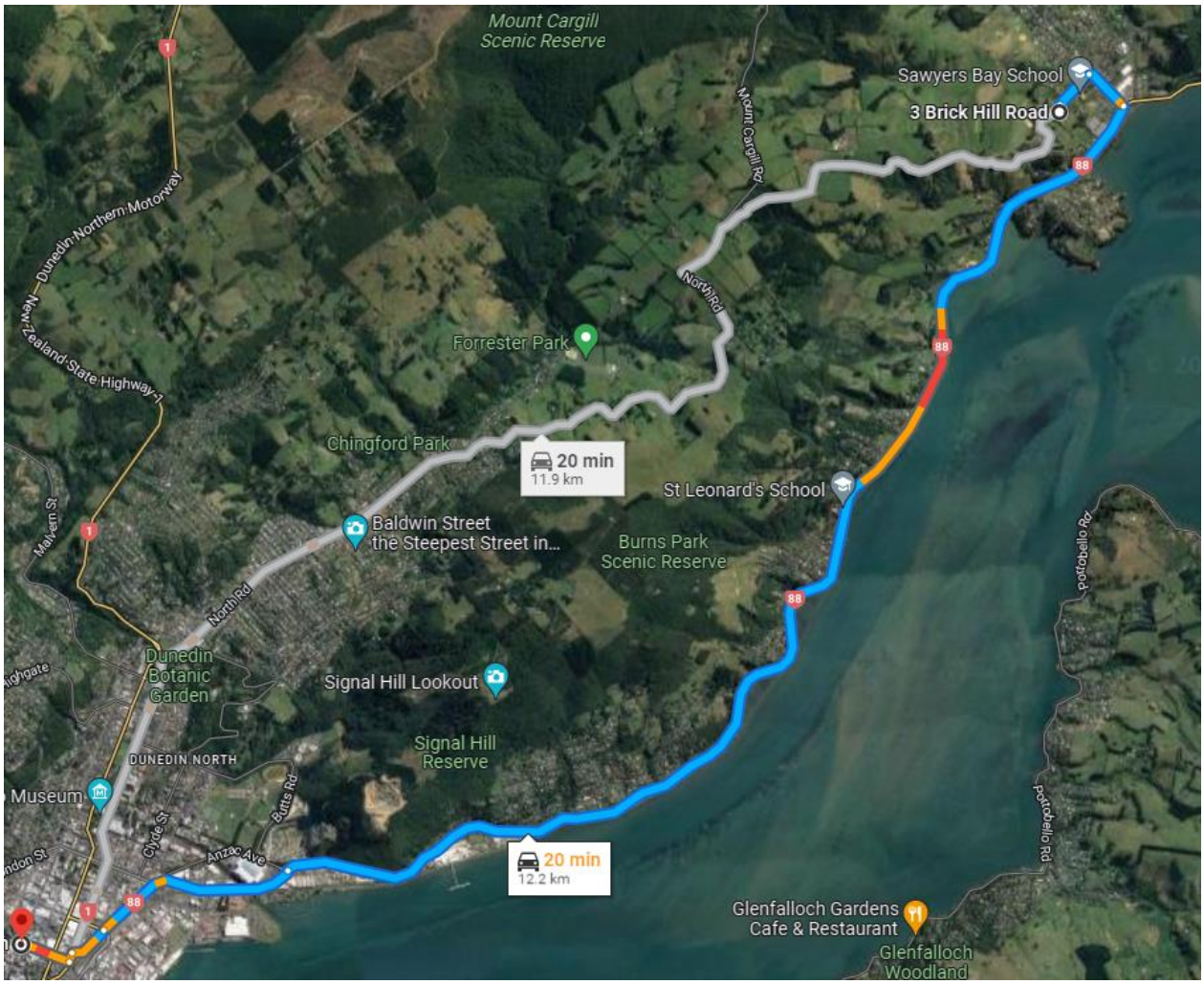

Figure 4.2 Driving routes available when accessing city centre (source: Google Maps)

A comparison between the second and third mentioned routes is shown in Figure 4.3.

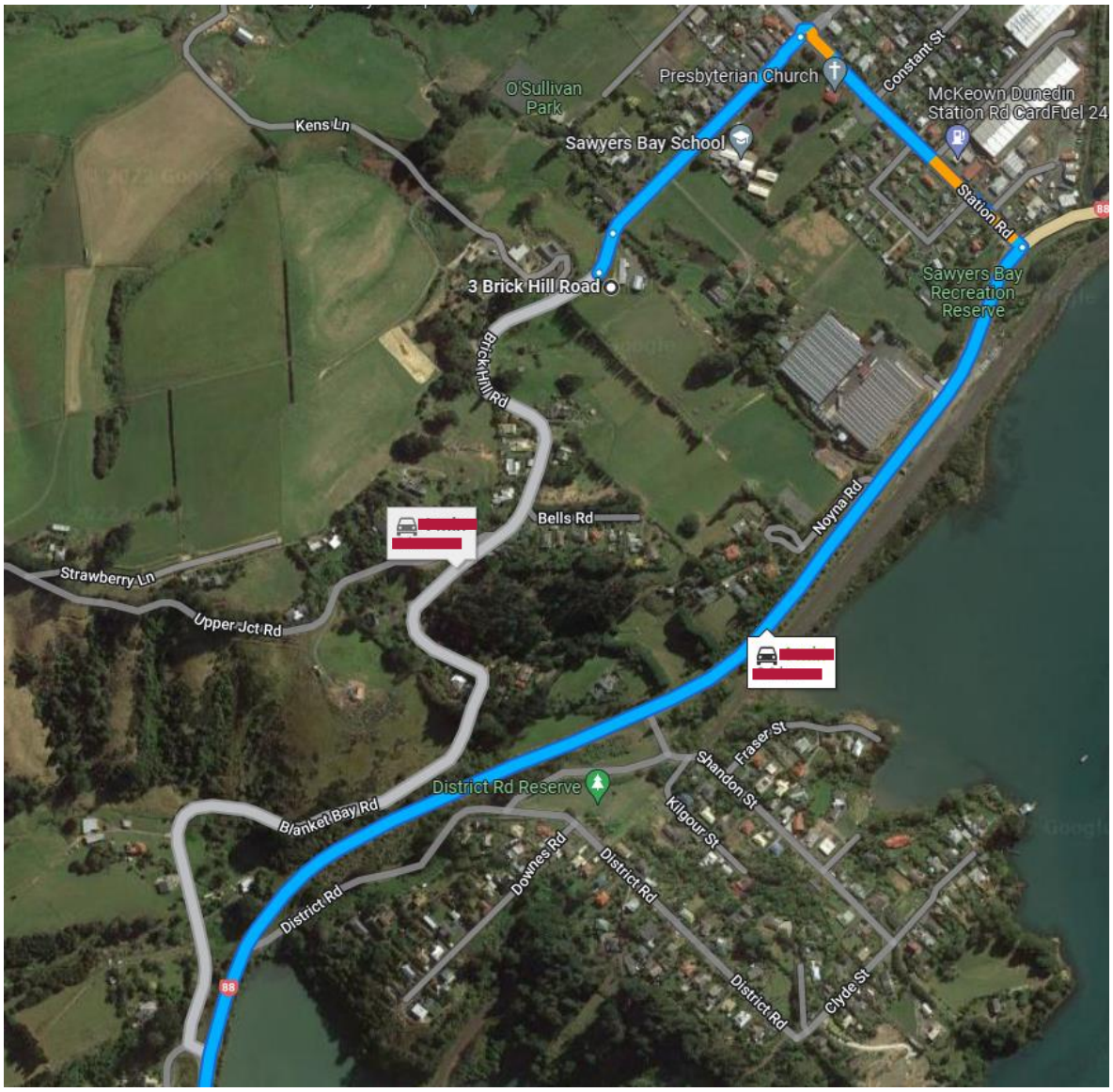

Figure 4.3 Transport routes available when accessing the City Centre from the site (Source: Google Maps)

As can be seen from Figures 4.2 and 4.3, Google Maps directs users to access the city via SH88. Additionally, out of the Blanket Bay and Stevenson Avenue routes, Google Maps directs users to use Stevenson Avenue.

It is considered that the Stevenson Avenue/SH88 route would be the most attractive route to new residents. This is because these roads have the simplest geometry and will therefore be easier to navigate than Upper Junction Road and Blanket Bay Road. That said, it is positive to note that the site has a high degree of resilience with several transport routes available to connect to the Dunedin city centre.

4.2 Transportation Issues

The following section identifies the potential transportation issues associated with the proposal and suggests possible solutions to those issues.

Sight Distances at Proposed Intersection

Austroads Guide to Road Design Part 4A Unsignalised and Signalised Intersections requires a safe intersection sight distance (SISD) of 97m based on a 2.0s reaction time and a design speed of 50km/h. This is to be measured 1.25m above ground level and along the carriageway from the approaching vehicle to the conflict point. The line of sight is to be clear to a point of 7.0m (5.0m minimum) back along the side road, measured from the conflict point i.e., the centre of the applicable traffic lane.

The current proposed access location has been reviewed based on Austroads Guidance. Based on a desktop assessment, it is expected that this sight distance could be made available to the northeast, as shown in Figure 4.4. This is likely to require removal / trimming of vegetation.

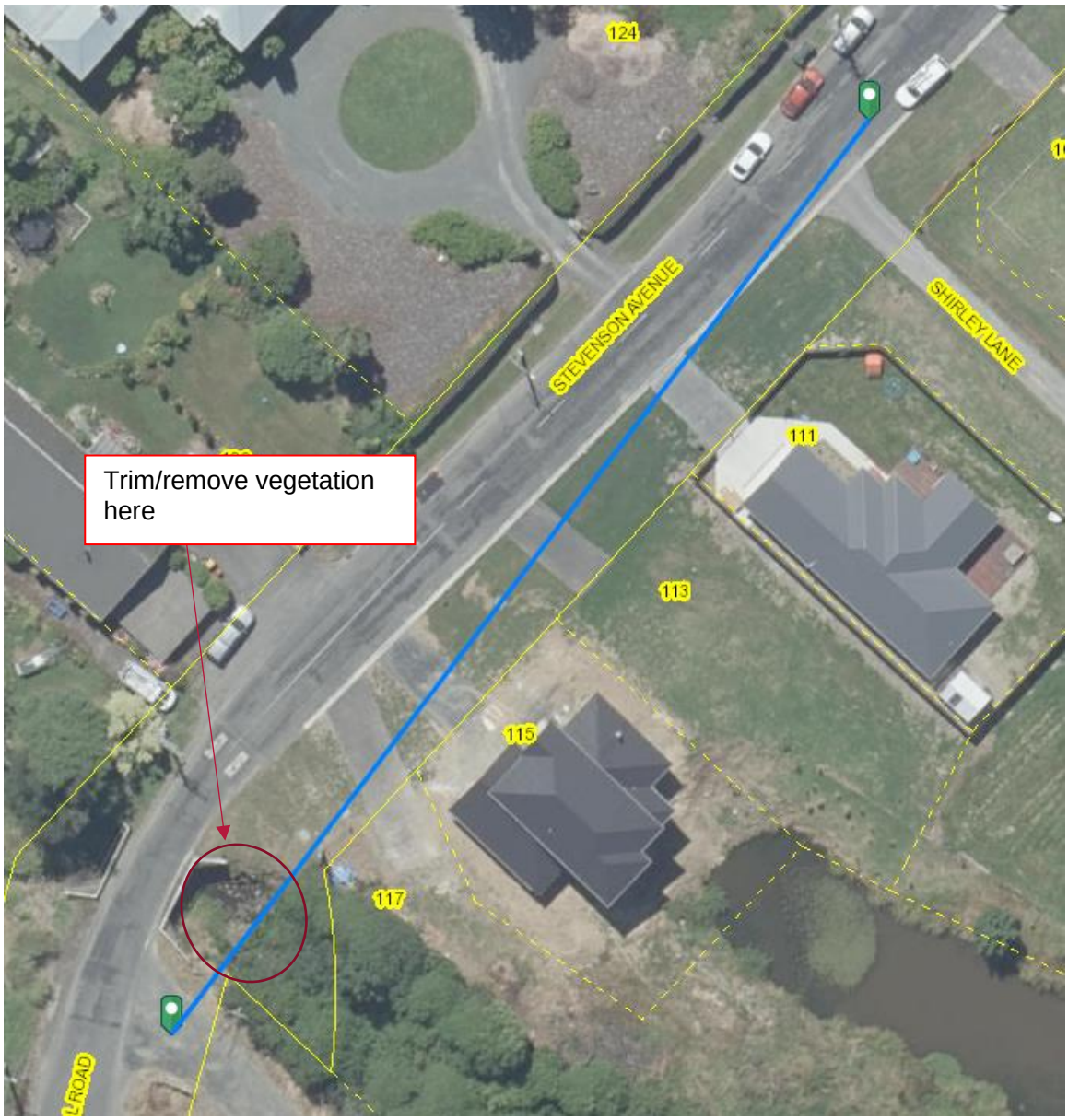

Figure 4.4 Sight distance looking northeast – approximately 97m

The sight distance cannot be made available to the southwest with the current access location. The sight distance is significantly obstructed primarily by the horizontal curvature of Brick Hill Road, as well as an embankment and vegetation on the northern side of the road.

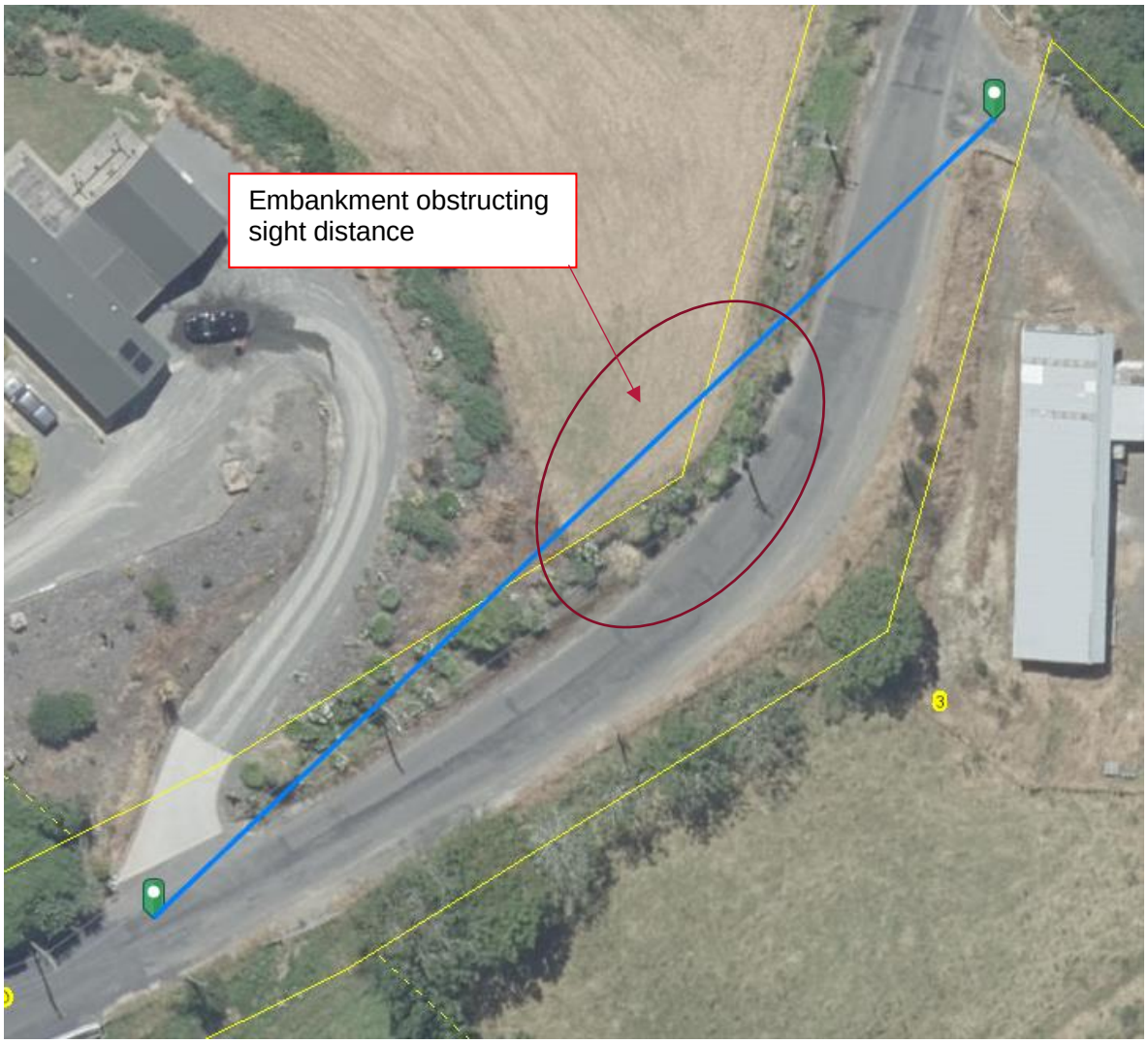

Figure 4.5 Sight distance looking southwest – approximately 97m

Abley have discussed this issue with the client's land surveyor/engineer, Terramark Ltd. It has been subsequently agreed that the location of the intersection could be shifted south, just north of the existing shed. This will require earthworks to achieve a suitable gradient for the new road.

It is expected that a sight distance in the order of 85m could be achieved to the southwest (with vegetation removal and benching of the embankment on the northern side of the road), and approximately 68m to the northeast. Hence, the required SISD of 97m still would not be achieved in this location based on a 50km/h speed environment and a 2.0s reaction time.

However, it is also noted that due to the constrained carriageway at the bridge adjacent to the site access and the tortuous alignment of Brick Hill Road, vehicles are likely to be travelling much slower than 50 km/h. The mean operating speed from Mega Maps in the vicinity of the site is 38 km/h. This gives an indication that the operating speed is considerably lower than the posted speed which will have the effect of a reduced sight distance being required.

The report writer has driven the road several times and considers that the likely operating speed of cars travelling northeast on this section of Brick Hill Road is unlikely to be greater than 40km/h. Using the contours on Council GIS Maps, there is a vertical change of 8m from the bridge to the boundary between 3 Brick Hill Road and 5 Brick Hill Road, which is a distance of approximately 75m. The indicative longitudinal gradient of Brick Hill Road is therefore about -11% on this section.

Austroads Guide to Road Design Part 4A Unsignalised and Signalised intersections contains the SISD equation. SISD is defined as the minimum sight distance which should be provided on the major road at any intersection. The SISD is influenced by gradient, operating speed, decision time (which is observation time + reaction time) and coefficient of deceleration. The required SISD has been calculated based on an operating speed of 40km/h. Note that a reaction time of 2.0s has been used, which is considered appropriate for drivers travelling north based on Austroads guidance. Based on these parameters, a SISD of 81m is required. Hence, it is considered that the SISD to the south can be met subject to a suitable access location and design.

Applying the same to the north (but assuming an uphill gradient of 3% (noting that the carriageway of Brick Hill Road ascends adjacent to the proposed intersection)), a SISD of 72m is required, which cannot be achieved due to the vegetation shown in Figure 4.4. Again, this assumes a 2.0s reaction time. It is also noted that the Safe Stopping Distance (SSD) to the potential conflict point will also exceed the required minimum of 38m. The SSD is defined as the distance to enable a normally alert driver, travelling at the design speed on wet pavement, to perceive, react and brake to a stop before reaching a hazard on the road ahead. Therefore, the intersection is expected to function safely.

It is also noted that in the unlikely event of a conflict, the collision speed would likely be less than 30km/h, which reduces the likelihood of any collision to result in serious injuries. Additionally, it is emphasised that Brick Hill Road has a ‘low’ personal and collective risk as discussed in Section 3.4.

Based on this review, it is considered that a safe intersection can be constructed, with suitable design, to service a residential development in the future. The design will need to be confirmed as part of a subdivision consent process. It will be important to ensure that the intersection is carefully designed to maximise sight distances, and to ensure that the downslope gradient of the new road where it meets Brick Hill Road is minimised to no greater than 1 in 8 for the first 5.0m. This will provide a near level platform for drivers as they enter and exit the new road.

Bridge

Since it is expected that most traffic will make a right turn when exiting the development and a left turn when entering the development, additional traffic movements are expected over the bridge. The sealed width of the road formation on the bridge is approximately 4.8m-5.0m. This is a constrained width for a two-way traffic environment, but it does enable two-way operation at slow speed. There are currently no pedestrian facilities on the bridge. Pedestrians are therefore currently expected to share the road space with vehicles. Currently the number of pedestrians is minimal due to the low density of development on the south side of the bridge. However, rezoning this land will increase the number of pedestrians approaching Sawyers Bay from the south side of the bridge.

Having reviewed the operation of the bridge for vehicle traffic and vulnerable road users, three options have been considered:

- Option 1 – Widen the bridge to a minimum trafficable width of 5.5m to allow easier two-way traffic movement and construct a pedestrian facility.

This option would make the bridge more comfortable for vehicles passing each other but would still require construction of a separate pedestrian facility. Increasing the width of the bridge is also likely to increase the operating speed in the vicinity of the proposed intersection which would be a poor outcome from a safety perspective.

- Option 2 – Retain the bridge at its current width, retain two lane/two-way operation and construct a separate pedestrian facility.

This option would leave the bridge as a constrained traffic environment for two-way traffic, but it is considered that this is an acceptable outcome from a traffic safety perspective. The traffic volumes on Brick Hill Road are low, and acceptable inter-visibility can be made available between southbound

traffic on Brick Hill Road and traffic waiting to turn right from the new road to travel north across the bridge.

A driver waiting to turn right out of the new intersection will be able to see any vehicles travelling toward the bridge and vice versa. Southbound traffic is also likely to be slowing down due to the presence of the bridge which will allow drivers waiting at the intersection more time to either turn onto Brick Hill Road and cross the bridge at slow speed or wait for the southbound vehicle to pass or turn into the new intersection. Given the low existing and anticipated traffic volumes, this is also expected to occur infrequently.

Based on this, and the slow speeds, this arrangement is expected to operate safely.

- Option 3 – Reduce the bridge to two-way/one lane operation and utilise the remaining bridge space to install a pedestrian facility.

A benefit of this option is that the remaining width on the bridge could be re-purposed to create a safe passage for vulnerable road users i.e., pedestrians and cyclists, and would not necessitate any widening. However, it is considered that the traffic volumes will remain sufficiently low that carriageway width improvements/adjustments on the bridge are considered unnecessary.

Bridge Options Summary

It is considered that Option 2 is the preferred option in this instance. It is noted that the bridge is considered to have an excellent safety record with no crashes reported on the bridge in the past 20 years. It is expected that even with the additional traffic generated by the subdivision that bridge will continue to operate safely due to the slow speed environment, low number of traffic movements, and low frequency of contraflow movement.

However, this will require a separated pedestrian facility to be provided. This will likely require either a separate pedestrian bridge or a clip-on to the existing bridge. An alternative option could be to provide a public pedestrian route that connects the subdivision with Stevenson Avenue through the property at 117 Stevenson Road, generally as shown below in Figure 4.6.

Figure 4.6 Potential pedestrian path

Provision for Active Transport Modes

The development concept (Figure 4.1) shows a new access intersecting with Brick Hill Road. This access will be constructed (albeit in a slightly different location) to the standards set out in the Dunedin Code of Subdivision and Development 2010 and vested with the Council. A pedestrian/cycle access will also be provided that connects to Noyna Road and can in turn connect to the shared path on the south side of SH88.

There are currently no footpaths on Brick Hill Road or on Stevenson Avenue between the bridge and Shirley Lane. Since the development is within walking distance to Sawyers Bay, including Sawyers Bay School, it is recommended that a footpath be constructed that connects the new road with the existing footpath on Stevenson Avenue. This will require upgrades to the bridge to safely accommodate vulnerable road users. The extent of the recommended upgrade works is illustrated in Figure 4.7.

Figure 4.7 Recommended future footpath provision

Consideration will also be required to ensure that pedestrians and cyclists are able to safely access the footpath on the opposite side of SH88. This will require crossing the State Highway network. It is noted that there are pram crossings with tactile pavers approximately 35m north of the Noyna Road intersection. These can be utilised by residents of the new development to access the shared path on SH88 and the bus stop on the south-eastern side of the road. While this may not represent the likely desire line if travelling toward the city, the existing pram crossings are not considered to create a substantive diversion in the context of a trip to the city centre as shown in Figure 4.8, below. It is considered beneficial for a footpath to be provided on Noyna Road, linking the development site with the existing footpath on SH88. Since this will require redesign works at the intersection, consultation with Waka Kotahi and DCC Transport will be required during detailed design.

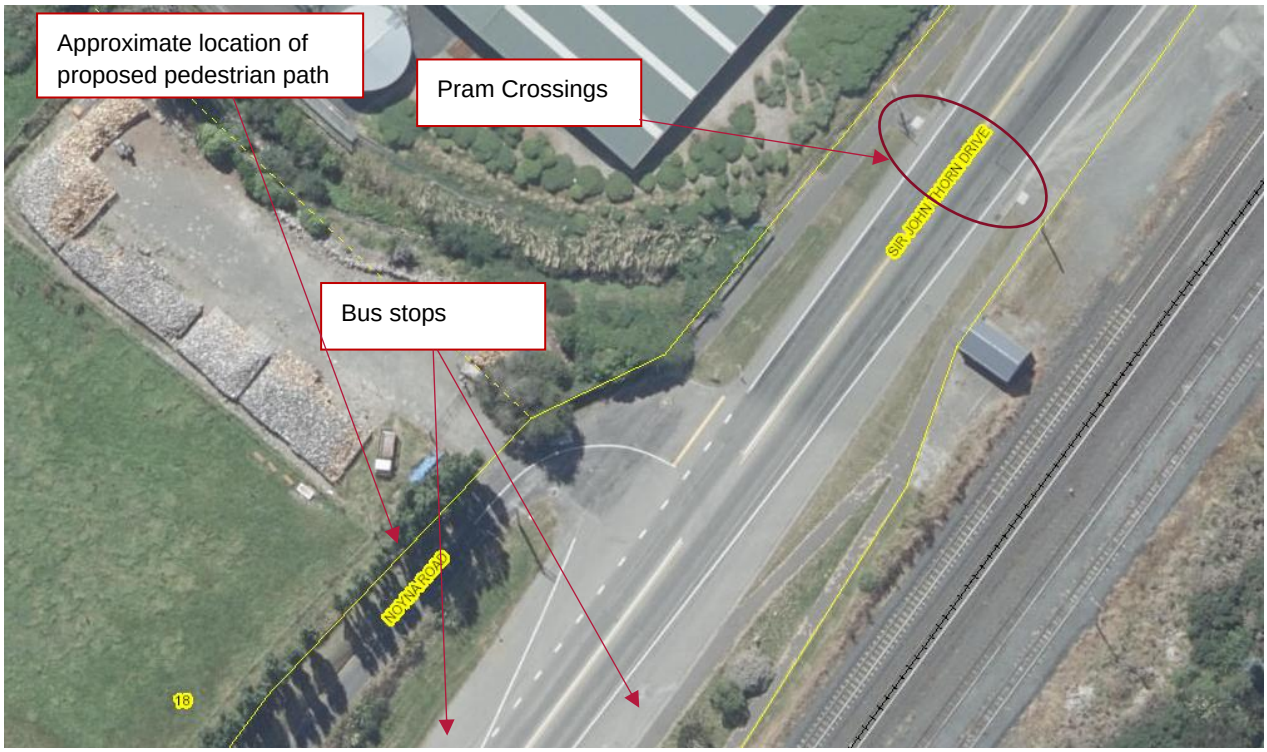

Figure 4.8 Pram Crossings, Bus Stops & Location of Pedestrian Path.

Connectivity

It is considered that the current proposed layout is acceptable from a connectivity perspective. In particular, it is noted that the development will enable pedestrian and cycle access through the site, and it is therefore considered that the design will ensure reliance is not placed on private motor car through appropriate linkages to existing pedestrian, cycle and public transport infrastructure.

We note that 5 Brick Hill Road is zoned Rural Residential 1 in the 2GP and has a current land area of 2.68ha. Hence, under the current provisions (minimum site size of 2ha) no further subdivision of this property is anticipated. However, it may be that in the future this site is similarly subject to rezoning and if this were to occur, it would be beneficial from a transport perspective to link the two properties together or to at least ensure that a future link is not precluded at subdivision stage. It is recommended that this is considered further.

5. Summary and Recommendations

This technical note has reviewed the transport implications of rezoning 3 Brick Hill Road and 18 Noyna Road, Sawyers Bay, from Rural to Township & Settlement. The review has concluded that the site is appropriate for Township & Settlement zoning from a transportation perspective due to its proximity to Sawyers Bay (including Sawyers Bay School), public transportation services, walking and cycling infrastructure on SH88, and alternative transport routes being available for new residents to the site.

However, this review has identified that improvement works to the existing transport network are likely to be required to support residential development of the site. These include:

- Footpath construction on Brick Hill Road and Stevenson Avenue to connect the development with existing pedestrian infrastructure. This will make walking to school, for example, a viable and safe mode of transport for the new residents.

- Construction of a new footpath on Noyna Road that links the pedestrian access within the development to the existing footpath on Sir John Thorn Drive. This will likely require minor adjustments to the Noyna Road intersection to enable sufficient width for a footpath between the carriageway and property boundary.
- Careful intersection design for the new intersection onto Brick Hill Road to ensure that sight distances are maximised (as discussed in Section 4.2), and to ensure that the downslope gradient of the new road where it meets Brick Hill Road is minimised to no greater than 1 in 8 for the first 5.0m. This will provide a near level platform for drivers as they enter and exit the new road.
- Consideration could be given for future transport connectivity to 5 Brick Hill Road, whether that be for a future road, driveway or public pedestrian/cycle access. However, given the current zoning of that land this is not considered essential.

Overall, while improvement works are required to the transport network to enable development of the site, it is considered that the RTZ overlay as is currently proposed will provide an appropriate mechanism to ensure that an agreement is reached between the developer and the Council for delivery of the required infrastructure. This could include a private development agreement whereby the developer agrees to construct the infrastructure and any development contribution costs relating to transport infrastructure are appropriately off-set. This acknowledges that other members of the general public will also benefit from the upgrade works completed by the developer.

Subject to the above, it is considered that the proposed rezoning can be supported from a traffic and transportation perspective, and that any remaining technical matters can be addressed through the subdivision consent process as appropriate.