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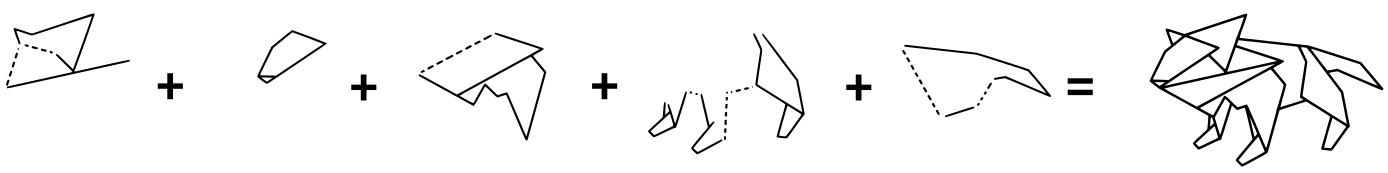
Transport Assessment Report

240044

PROJECT:
Transport Assessment Report- Greymouth Library
2 Richmond Quay, Greymouth



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Author Signature		Approver Signature	
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Title	Civil Engineer	Title	Principle Civil Engineer

Contents

1. INTRODUCTION

1.1. REQUEST FOR INFORMATION

Nemean Consulting Ltd has been engaged by Rm Design Ltd to undertake a traffic assessment for a proposed new 2 floor building at 2 Richmond Quay, Greymouth.

The assessment is based on the proposed development plans provided by CLIENT (refer Appendix A) and option 2 layout. The client has requested this report to assess whether the transport assessment align with the district plan for the proposed new development (two story building- retail to ground floor & public library on 1st floor) at 2 Richmond Quay, Greymouth.

This report is intended to provide supportive documentation for the Resource Consent application.

1.2. SITE AND SURROUNDS

The application site is legally described as Lot 2 and 3 DP 490868 and Lot 1 DP 1286. The proposed new 2 storey building is located at 2 Richmond Quay, Greymouth and comprised an area of 2458.1 m^2 .

The application site is within the Commercial Zone (*under the operative Grey District Plan)*

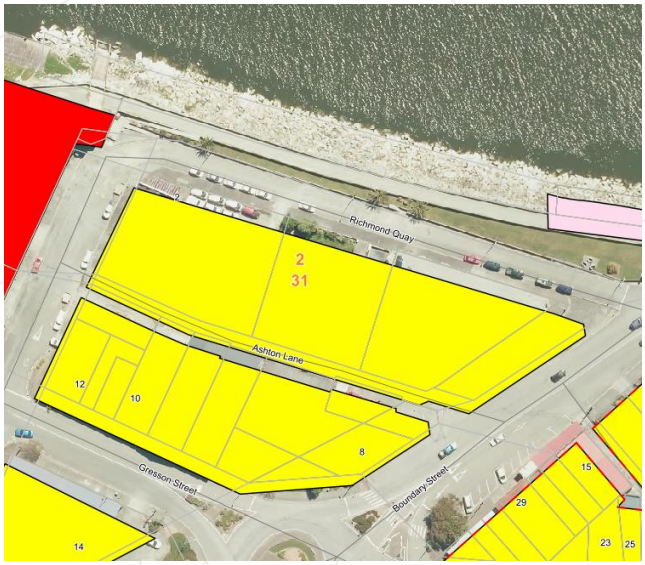


Figure 1: Operative Planning Map Source: Grey District Council GIS.

2. TRAFFIC IMPACT ASSESSMENT

2.1. APPROACH

This traffic assessment is based on the information provided by client (RM design) and option 2 design. Also, this design option 2 has been discussed and communicated with council transport manager and general manager.

2.2. SUITABILITY OF THE EXISTING ROW ACCESS

As per Resource Application lodge to the council, the vehicle movements will be a rate of 3 heavy vehicle movements per week, and 300 regular vehicle movements per week.

As per 12.4 GDC plan access, off-street parking and loading, and the intensity of activities should not adversely affect vehicle and pedestrian safety and efficiency. Given that, the proposed 2 story building- Library is located within the low volume ONRC road (Johnston Street, Richmond Quay and Ashton Lane) as shown in figure 2 below. The off-street parking and loading will not affect vehicle and pedestrian safety and efficiency. Furthermore, the proposal of making Aston Lane single lane will increase pedestrian and vehicle safety.

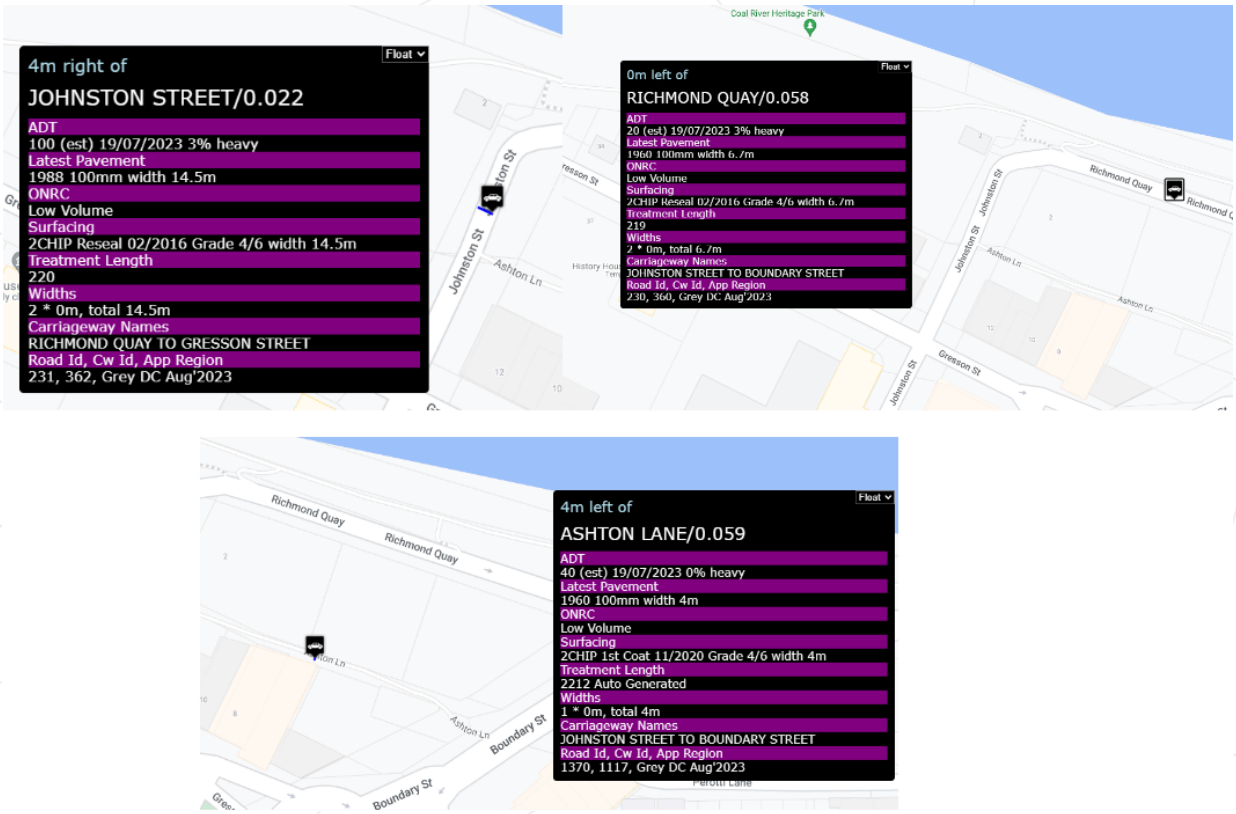


Figure 2. Grey District Council Mobile Road information

Figure below (Table 3.2 of NZS4404, (Figure Number E19 (in the table)) identifies this need where the access is single lane. It would be desirable to ensure that there is sufficient width to pass another vehicle say every 50 metres given the very low volumes of vehicles using ROW.

Specific design shall be undertaken and agreed with the district council transport team while making Ashton Lane into a single lane or one way road.

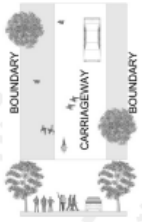
PLACE CONTEXT			DESIGN ENVIRONMENT				LINK CONTEXT					TYPICAL PLAN AND CROSS SECTION	FIGURE NUMBER
Area	Land use	Local attributes	Locality served	Target operating speed (km/h)	Min. road width (m)	Max. grade	Pedestrians	Passing, parking, loading, and shoulder	Cyclists	Movement lane (excluding shoulder)	Classification	SEE APPENDIX E FOR LARGER VERSION OF FIGURES	
Notes	See 3.2.4, table 3.1 & 3.3.1.6	See table 3.1	See table 3.1	See 3.3.5	See 1.2.2, 3.3.1.9, & 3.4.16		See 3.3.11	See 3.3.6 & 3.3.1.4	See 3.3.1.5, 3.3.7, & 3.3.11.2	See 1.2.2, 3.3.1.1, 3.3.1.2, 3.3.1.3, 3.3.1.10, 3.3.11.3	See 3.2.4.2 & 3.3.16 (Typical max. volumes)		
Urban	Live and play	Access to lifestyle or clustered housing	1 to 3 du or 1 to 6 du	10	3.6 m for up to 3 du or 4.5 m for up to 6 du	20%	Shared (in movement lane)	Allow for passing up to every 50 m	Shared (in movement lane)	2.75 - 3.0	Lane (this would normally be a private road or private way)		E19
	Live and play	Side or rear service access	1 to 20 du	10	6	16%	Shared (in movement lane)	Parking is required and shall be separate and recessed	Shared (in movement lane)	2.75 - 3.00	Lane (~ 200 vpd)		E20
	Live and play	Access to houses / townhouses	1 to 20 du	20	9	16%	Shared (in movement lane)	Shared (in movement lane)	Shared (in movement lane)	5.5 - 5.7	Lane (~ 200 vpd)		E21

Figure 3. Width Standard from NZS 4404- table 3.2

TABLE 25.2 PRIVATE WAY, VEHICULAR ACCESS AND MISCELLANEOUS PROVISIONS (NOT INCLUDING LEGAL ROADS)

Environmental Area	Potential No of Units	Length	Legal Width	Carriage-way Width	Turning Area	Passing Bay	Footpaths
Residential Township	0-4	All Lengths	4	3.0	Required if over 50m in length	Optional	Optional
Residential Township	5-10	0-50	4	3.5	Required	Required	Optional
Residential Township	5-10	Over 50	4.5	4.0	Required	Required	Required
All Other Environmental Areas	0-10	All Lengths	6.0	4.0	Required	Optional	Optional
All Environmental Areas	Service Lanes	All Lengths	6.0	4.0	Required if blind end.	Optional	Optional
All Environmental Areas	Pedestrian Access	All Lengths	2.1	2.1	N/A	N/A	N/A
All Environmental Areas	Access Ways and Cycle Ways	All Lengths	2.1	2.1	N/A	N/A	N/A
Minimum Height Clearances Vehicular Access and Service Lanes							3.5m

Figure 4. Grey District Council District Plan Table 25.2 (Source- GDC plan).

2.3. SIGHT DISTANCE

Approach sight distance (ASD) ensures that approaching drivers are aware of the presence of a crossing. The line of sight must not be obstructed as it ensures that the driver is aware of the crossing by seeing the pavement markings and other cues even if there is no pedestrian on the crossing, and is therefore alerted to take the appropriate action if a pedestrian steps onto the crossing. ASD should be provided at all formal, marked pedestrian crossings.

Table below provides an indication for minimum approach sight distances as per NZTA for approach sight distance.

Table: Minimum approach sight distances

Approach vehicle speed (km/h)	ASD (m)
10	5
20	13
30	22
40	34
50	48
60	64
70	83
80	103

The access sight lines should be as per Diagram A and table 24.4 of GDC district operative plan.

TABLE 24.4 MINIMUM ACCESS SIGHT DISTANCES

		MINIMUM SIGHT DISTANCE (metres)	
		FRONTAGE ROAD CLASSIFICATION	
		COLLECTOR	ARTERIAL
DRIVEWAY CLASSIFICATION	*Operating Speed (km/h)		
LOW VOLUME	50	45	90
Up to 200 vehicle	70	85	140
manoeuvres per day	80	105	175
	100	160	250
HIGH VOLUME	50	90	90
More than 200 vehicle	70	140	140
manoeuvres per day	80	175	175
	100	250	250

Figure 5. Minimum access sight distance source: Grey District Council Plan

Based on District plan Rule 24.3.1 Diagram C: low use access standard should be followed to ensure that required Radii is met for the proposed new road layout.

All above mentioned sight line will be met on site during construction phase and council staff will verify as per District plan and any other relevant standards.

2.4. PARKING REQUIREMENTS

According to Table 24.1 of the GDP, the minimum parking space requirement for commercial purposes is 5 spaces per 100 square meters of gross floor area. However, due to constraints on the site, it is not feasible to meet this requirement fully. The client has provided a total of 13 on-site parking spaces.

Additionally, there are two adjacent public car parks and extra street parking available at Boundary Street/Richmond Quay. The Transport Department of GDC is also considering these options. Therefore, the parking requirements will be fulfilled without causing any adverse cumulative effects on the surrounding areas. The proposed parking space layout is in accordance as per section 24.6 Schedule 1 figure 2 & 3.

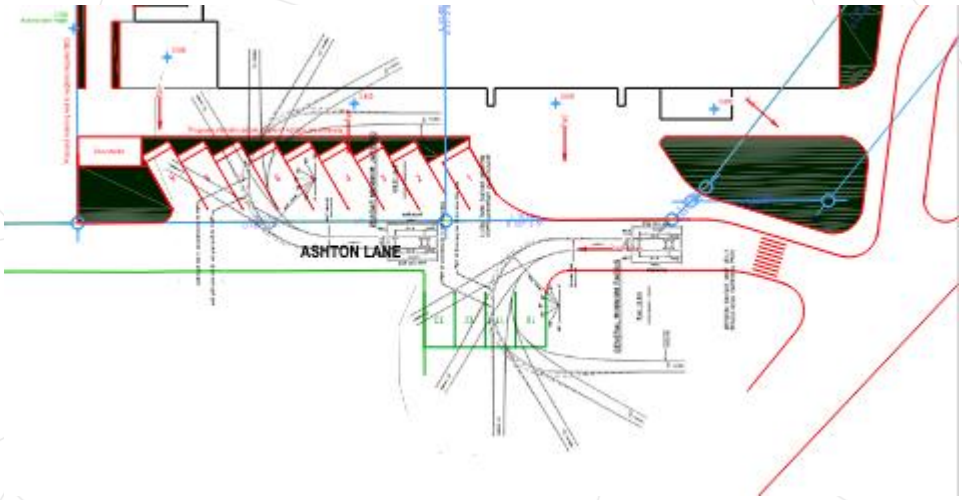


Figure 6. Car parking space layout as per GDP section 24.6

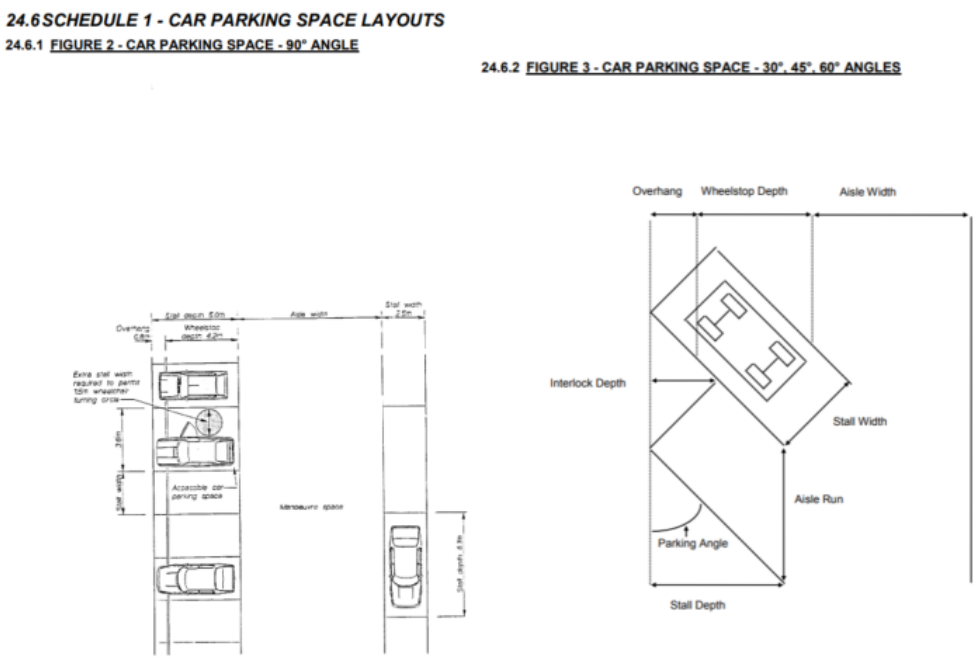


Figure 7. Car parking space layout source: Grey District Council Plan

However, as per GDP section 15.6.10 Off-street parking requirements of the plan cannot be met: The cost of allocating 25 square meters for a parking spot is determined by the current market value of the land subject for development, along with construction expenses as per the requirements of NZS 4404:1981. This cost is capped at a maximum of $1,500.00 plus GST per parking space.

The cost requirement discussed on subsequent paragraphs is not being met and is to be agreed between the relevant parties involved in later stage.

There should be provision for mobility car park as per NZS 4121:2001 *Design for access and mobility.*

2.5. LINE MARKING AND SIGNS

As per writing this assessment the detail drawings for line marking and signs are not available. So, the client will install required/relevant traffic signs and line marking as per MOTSAM part 1 and 2. Designs shall satisfy the Land Transport Rule, NZTA and Grey District Council requirements. All road markings and traffic signs shall be approved by the TA.

GDC staff to review this when detailed design becomes available.

2.6. TRAFFIC SAFETY

Where safety barriers for pedestrian, cyclists and vehicles in urban areas are necessary, they shall comply with the design requirements of the New Zealand Building Code, NZS/AS 1657 and NZTA RTS 11: Urban roadside barriers and alternative treatments.

The establishment of road safety measures (while is not the requirement at this stage), such as one-lane speed hump systems, relies on the submission of proposals by the applicant, and interest/approval by the council.

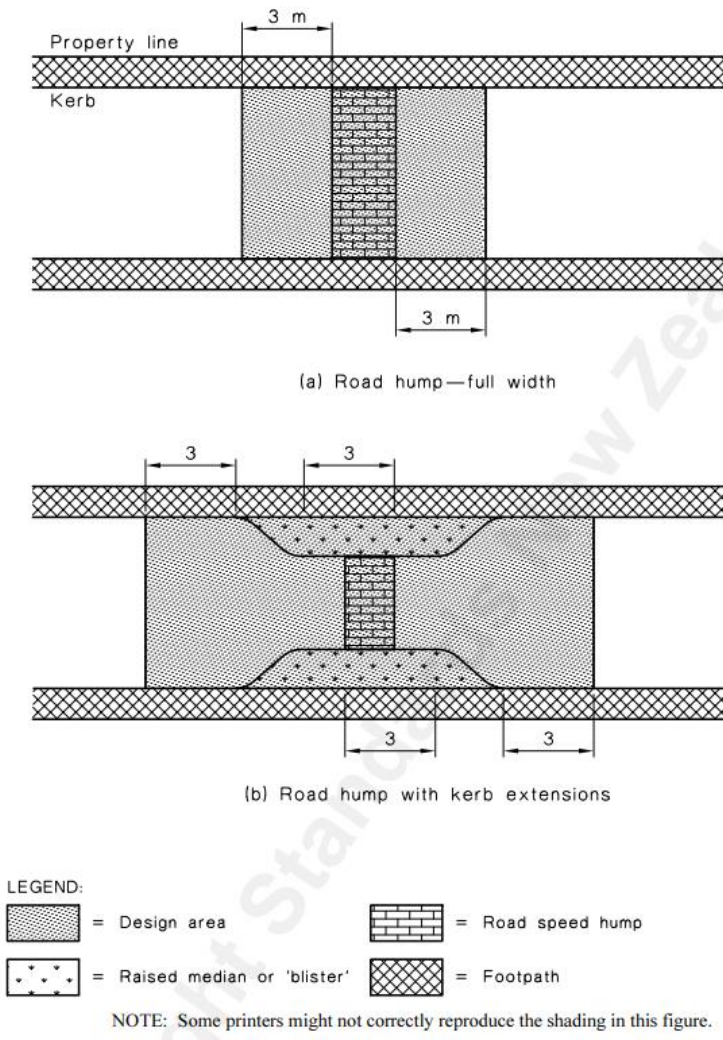


Figure 7. Typical Speed Hump Design layout (Source: NZTA 1158.3.1:2005). *FOR GUIDANCE PURPOSE ONLY*

2.7. STREETLIGHT AND ASSOCIATED SAFETY

The lighting selected for roads and outdoor public spaces should prioritize the visual needs of pedestrians. Specifically, the P category is recommended for any streetlights to be installed in accordance with the requirements of the proposed new two-story building.

According to AS/NZS 1158.3.1:2005, the appropriate lighting subcategory for a road or public space is determined by the table provided below for category P areas.

TABLE 2.1

LIGHTING CATEGORIES FOR ROAD RESERVES IN LOCAL AREAS

1	2	3	4	5	6
Type of road or pathway		**Selection criteria[a,b)]**			**Applicable lighting subcategory[c,d)]**
General description	**Basic operating characteristics**	**Pedestrian/ cycle activity**	**Risk[f)] of crime**	**Need to enhance prestige**	
Collector roads or non-arterial roads which collect and distribute traffic in an area, as well as serving abutting properties	Mixed vehicle and pedestrian traffic	N/A	High	N/A	P1
		High	Medium	High	P2
		Medium	Low	Medium	P3
		Low	Low	N/A	P4
Local roads or streets used primarily for access to abutting properties, including residential properties	Mixed vehicle and pedestrian traffic	N/A	High	N/A	P1
		High	Medium	High	P2
		Medium	Medium	Medium	P3
		Low	Low	N/A	P4
		Low	Low	N/A	P5[e)]
Common area, forecourts of cluster housing	Mixed vehicle and pedestrian traffic	N/A	High	N/A	P1
		High	Medium	High	P2
		Medium	Low	Medium	P3
		Low	Low	N/A	P4

TABLE 2.3

LIGHTING CATEGORIES FOR PUBLIC ACTIVITY AREAS (EXCLUDING CAR PARKS)

1	2	3	4	5	6
Type of area or activity		**Selection criteria[a,b)]**			**Applicable lighting subcategory**
General description	**Basic operating characteristics**	**Night time vehicle movements**	**Risk of crime[c)]**	**Need to enhance prestige**	
Areas primarily for pedestrian use, e.g. city, town, suburban centres, including outdoor shopping precincts, malls, open arcades, town squares, civic centres	Generally pedestrian movement only	N/A	High	High	P6
		Medium	Medium	Medium	P7
		Low	Low	N/A	P8
Transport terminals and interchanges, service areas	Mixed pedestrian and vehicle movement	High	High	High	P6
		Medium	Medium	Medium	P7
		Low	Low	N/A	P8

TABLE 2.5

LIGHTING CATEGORIES FOR OUTDOOR CAR PARKS (INCLUDING ROOF-TOP CAR PARKS)

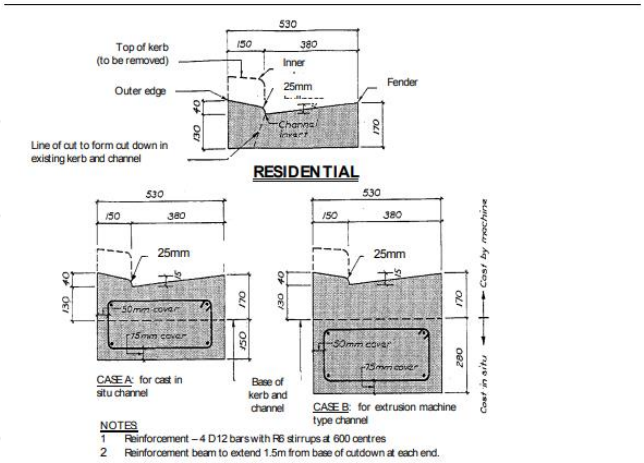
1	2	3	4	5
	Selection criteria[a]			
Type of area	Night time vehicle or pedestrian movements	Night time occupancy rates (NTOR)	Risk of crime[b]	Applicable lighting subcategory[c]
Parking spaces, aisles and circulation roadways	High	>75%	High	P11a
	Medium	≥25%, ≤75%	Medium	P11b
	Low	<25%	Low	P11c
Designated parking spaces specifically intended for people with disabilities	N/A	N/A	N/A	P12

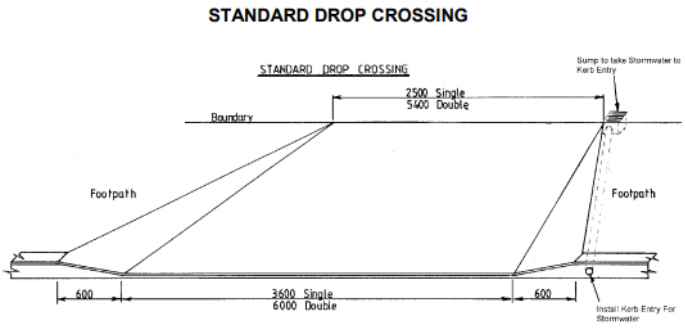
2.8. OTHER RELEVANT TRANSPORT CONSIDERATION

2.8.1. Vehicle Crossing

Commercial crossing to be installed and Road Work Consent to be applied prior to construction as per GDP section 24.8 schedule 3.

24.8.3 FIGURE 6 DRAWING 1 -STANDARD KERB AND CHANNEL AND DROP CROSSING





2.8.2. Surface of Parking Loading Areas and Landscaping

All parking, loading, and trade vehicle storage areas must have surfaces that are formed, sealed, or maintained to prevent dust or noise disturbances. The first 5.5 meters of these areas, measured from the road boundary, must be surfaced to prevent the transfer of materials like mud, stone chips, or gravel onto nearby footpaths, roads, or service lanes.

Furthermore, stormwater runoff from parking areas must be collected on-site and directed to an approved stormwater disposal system via piping or channels.

Regarding landscaping, it must not impede the visibility of motorists exiting the site or create unsafe conditions for those using the car park or adjacent footpaths. When parking areas for five or more vehicles are provided within or adjacent to residential areas, effective screening on all sides must be implemented.

2.9. RECOMMENDATION AND CONCLUSION

- Overall layout and transport assessment criteria have met the Grey District Plan, Austroads, NZTA standard and other relevant transport standards.
- The provided layout for development option 2 has not considered or allocated car park for the mobility car park. NZS 4121:2001 Design for access and mobility should be referred for mobility parking design. However, mitigation and relevant next steps on this have been discussed in parking section 2.4 above and applicant will consider the mobility car park during detailed design as per NZS 4121:2001.
- While a detailed tracking diagram has not been provided with this report, but careful checks has been on vehicle tracks with respect to the proposed development design, RTS 18, Grey District Plan 24.6 schedule 1 and all layout seems to meet the requirements.
- Aspects like line marking and sign, sight distance, traffic safety should be checked by council transport staff.
- Traffic generation will be in accordance with the permitted baseline and any effects associated with noise, vibration and general nuisance would be imperceptible from that of a permitted activity.
- The introduction of crossings, improved parking facilities, enhanced signage, and updated line marking contribute to enhancing the vibrancy of the area.
- Ramps, crossings and other accessway falls appear to comply with the building code and drainage requirement for road infrastructure.
- Council relevant departments and council elected members have to be involved as per the relevant transport and local government act to convert the existing Asthon Lane to one way lane. This might mean formal notice and reporting to the council meeting formally or informally. Council Transport Staff and Applicant to work on this.

The proposed activity is consistent with the purpose of the relevant district plan, transport act and local government act. Overall, it is considered that the proposed transport aspects of this site is an efficient and appropriate in accordance with the Objectives, Policies and Rules of the Grey District Plan and Policies of the proposed Te Tai o Poutini Plan. Actual and potential adverse effects on the network are not considered to be more than minor and can be adequately mitigated as described throughout this assessment.

3. LIMITATIONS

3.1. GENERAL LIMITATIONS

This report was completed for the client based on the supplied brief and proposed development of the site at the time that this assessment was completed. Recommendations within this report are site specific in relation to the brief and should not be used for any other development or by any other client without further review and approval from Nemean Consulting Limited.

Our findings and recommendations are based on the desktop review and information provided by the client. The inferences are limited to the scope for which this work was carried out.

This is not the detailed transport assessment as the provided transport design option 2 was discussed and agreed with the council general manager and transport manager. Thus, the report is to facilitate and assist council transport team with the proposed development.

4. REFERENCES

4.1 INFORMATION REFERENCED

The following documents and information have been referred to:

- AS/NZS 1158.3.1:2005 Lighting for roads and public spaces.
- Austroad : *Guide to Road Design*
- Google Maps (2024 Imaginary)
- Grey District Council District Plan
- Grey District Council Online Maps
- Land Transport Safety Authority: *Guidelines for visibility at driveways RTS 6*
- Land Transport Safety Authority: *Urban roadside barriers and alternative treatments RTS 11*
- Manual of traffic signs and markings (MOTSAM)- Part 1: Signs
- Manual of traffic signs and markings (MOTSAM)- Part 2: markings
- Mobile Roads providing information on the Grey District Council Road.
- NZS 4404: 2010 Land Development and Subdivision Infrastructure – New Zealand Standard.
- Scheme Plans/layout-option 2 prepared by RM design.
- Waka Kotahi NZTA – *Standard safety intervention toolkit*