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A19 NORTH ROAD, BROOKE'S GARAGE

Road Safety Review
Client: Mr Robin Wilson

17/03/2022

Quality Management

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A19 North Road, Brooke's Garage

Road Safety Review

17/03/2022

Highway Authority

North Yorkshire County Council

Client

Mr Robin Wilson

Road Safety Consultant

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Table of Contents

1	Introduction.....	5
1.1	TERMS OF REFERENCE.....	5
1.2	BACKGROUND AND OBJECTIVES.....	5
1.3	SITE DESCRIPTION AND PLANNING APPLICATIONS.....	6
2	Collision and Traffic Data	8
2.1	COLLISION DATA.....	8
2.2	TRAFFIC DATA	9
3	Site Observations and Hazard Identification	10
3.1	SITE OBSERVATIONS	10
3.2	HAZARD IDENTIFICATION.....	12
4	Risk Assessment	15
4.1	METHODOLOGY.....	15
4.2	SAFETY RISK ASSESSMENT	15
5	Conclusion and Recommendation.....	19
	Appendices, Figures and Tables.....	20

APPENDIX A – Location Plan

1 Introduction

1.1 TERMS OF REFERENCE

- 1.1.1 Road Safety Initiatives LLP has been commissioned by Mr Robin Wilson to review the operation of Brooke's Garage, A19 North Road, Shipton-by-Beningbrough, for potential road safety concerns.
- 1.1.2 This Road Safety Study comprises an examination of the information supplied, a site visit, identification of relevant hazards and subsequent recommendations to reduce the likelihood of injury collisions resulting from the hazards being realised.
- 1.1.3 The Road Safety Review was carried out by an experienced Road Safety Engineer. Road user collisions are rare, random, multi-factor events and as such are virtually impossible to predict. Therefore, it should be noted that the outcome of the following road safety study is subjective and relates to the current experience of the Road Safety Reviewer. Other road safety professionals may provide a different assessment.
- 1.1.4 The Road Safety Reviewer was:
- | | |
|--------------------|---|
| Team Leader | Mark Hedley , IEng, MCIHT, MSoRSA, FIHE, RegRSA(IHE) |
| | Certificate of Competency in Road Safety Audit gained in Nov 2013 |
| | Partner, Road Safety Initiatives LLP |

1.2 BACKGROUND AND OBJECTIVES

- 1.2.1 There are road safety concerns in relation to the current operation of Brooke's Garage (also known as North Road Garage) and a planning application by the proprietor may exacerbate the existing hazards and may introduce additional conflicts.
- 1.2.2 Mr Robin Wilson, the proprietor of the adjacent Wilson Building, has subsequently commissioned Road Safety Initiatives LLP to review the current and future operations and consider the risks and potential for injury.
- 1.2.3 This Road Safety Review will attempt to identify any features or operational elements that may be a hazard. These hazards will then be appraised and evaluated to identify the level of intervention that maybe needed. A 'risk scoring' evaluation tool will be used to provide a pragmatic and consistent appraisal methodology.

1.3 SITE DESCRIPTION AND PLANNING APPLICATIONS

- 1.3.1 The A19 North Road is a rural single carriageway road which is subject to the national speed limit. The A19 runs in a North-South direction and there is no road lighting or footways along the A19 vicinity of Brooke's Garage. The site is located approximately 1km north of Shipton.

Figure 1.1 - Location Satellite Image (Source: Google 2022)



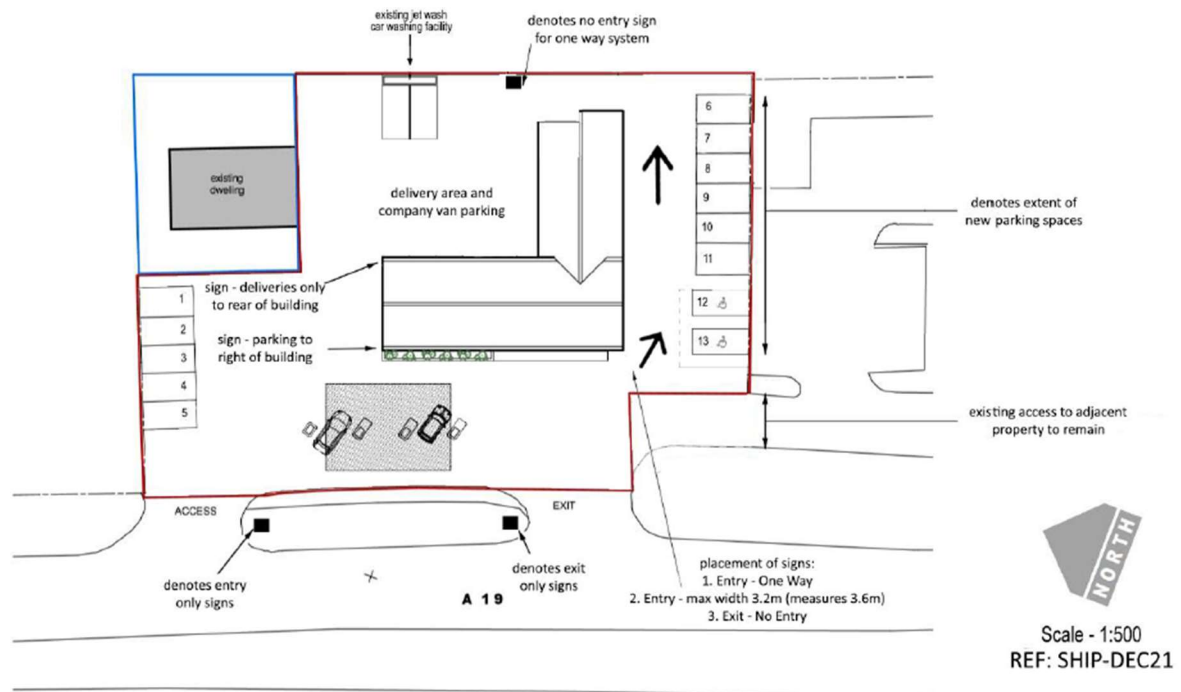
- 1.3.2 The current access arrangement for Brooke's Garage, which is located on the east-side of the A19, consists of two accesses which also serve the adjacent Wilson Building and car parking, located at the southern end of North Road Garage. Brooke's Garage has four fuel pumps (arranged in echelon rather than in parallel to the A19 carriageway), a shop, associated parking and servicing. Additionally, there is a residential property on the northeast 'corner' of the site.
- 1.3.3 The Wilson Building was constructed as a 'Little Chef' (understood to be operational from 1987 to 2002). In more recent times the Wilson Building has been a furniture showroom and a restaurant.

Current Planning Application

- 1.3.4 There is currently a planning application which has been submitted to Hambleton District Council, the local planning authority. The application description is shown in the extract below, along with the application layout plan in **Figure 1.2**.

"Demolition of existing extension, change of use of existing showroom, MOT car servicing garage to Class A1 (Retail) along with external alterations, single storey extension, formation of car parking and construction of boundary fence and gate as amended by plan received by Hambleton District Council on 21 August 2013"

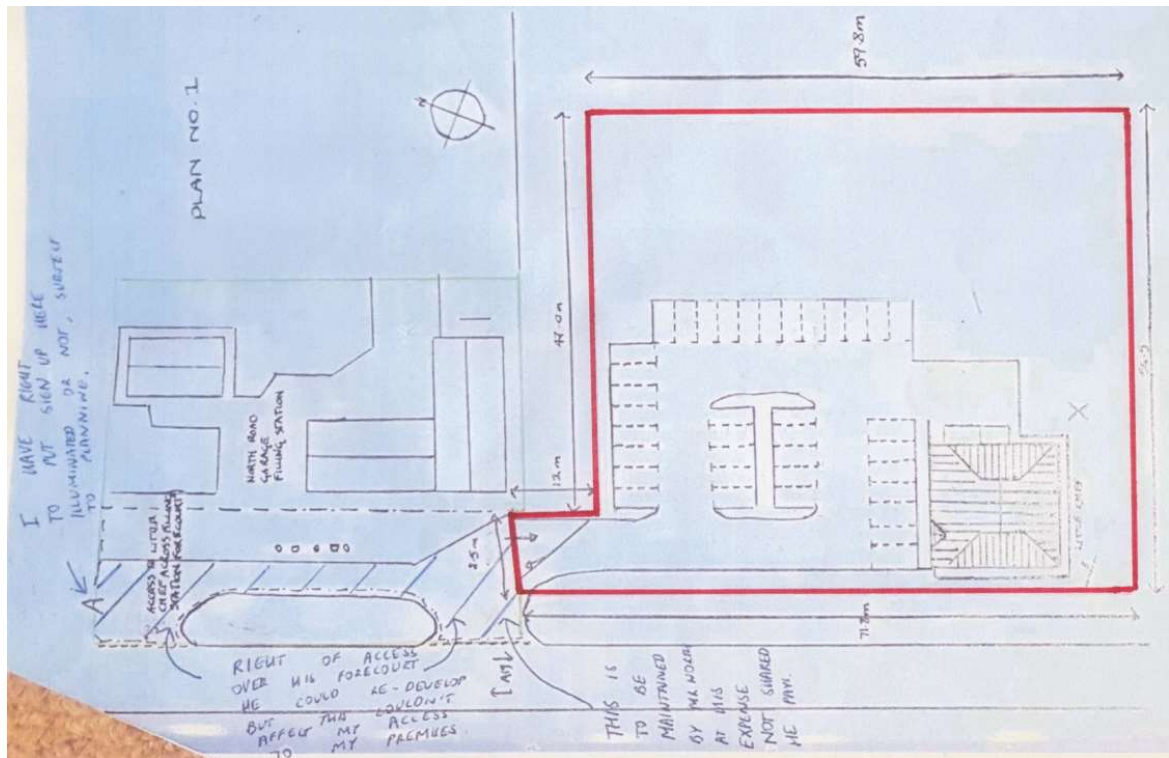
Figure 1.2 – Planning Application (2022) Plan



Wilson Building – Land Ownership

- 1.3.5 The plan shown in **Figure 1.3.** details the land ownership and access arrangements for the Wilson Building and its associated car parking.

Figure 1.3 – Land Ownership Plan and Access arrangements through Brooke's Garage (Conveyance)



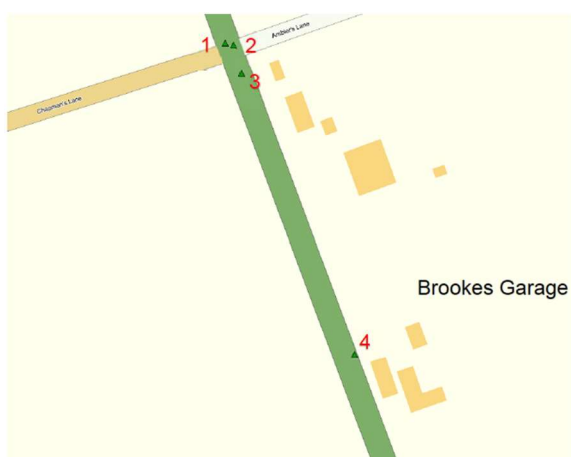
2 Collision and Traffic Data

2.1 COLLISION DATA

Collision Data

- 2.1.1 This section will examine the reported injury road traffic collision data for the 5-year period extending from 01 February 2017 to 31 January 2022. The locations of the collisions within the search area are shown on the plan in **Figure 2.1** below.

Figure 2.1 - Collision locations



- 2.1.2 It can be seen above in **Figure 2.1** that the collision search area extended beyond the study extents. Therefore, the collision data has been reviewed and collisions outside the study area have not been included in this analysis. It should also be noted that only collisions occurring on the A19 (public highway) can be registered and incidents within Brooke's Garage will not have been recorded.
- 2.1.3 During the study period, a total of one slight injury traffic collision has been recorded.
- 2.1.4 The collision occurred on 13 November 2017, at 08:40 in dry conditions. A van driven by a 68-year-old male, turned right from the garage to travel north. A northbound car, driven by a 42-year-old male, tries to overtake the van whilst it is turning and collides. The collision resulted in slight injuries to both drivers and a female passenger in the car.
- 2.1.5 In addition, the Road Safety Reviewer was provided with photographs of the aftermath of an incident that occurred on Wednesday 5 January 2022. It can be assumed that the incident either did not result in any personal injuries or the details have not reached the North Yorkshire County Council database. The images are shown in **Figure 2.2** overleaf.

Figure 2.2 – Images from an incident on Wednesday 5 January 2022



2.2 TRAFFIC DATA

Traffic Flows

- 2.2.1 The two-way Annual Average Daily Traffic (AADT) provided by the Department for Transport Manual Traffic Counter located on the A19 to the south in Skelton are shown in **Table 2.1**.

Table 2.1 - Annual Average Daily Traffic (AADT)

Site Number	2016	2017	2018	2019	2020
74053	11,562	11,685	9,944	9,964	7,559

Traffic speeds

- 2.2.2 The Road Safety Reviewer was not provided with any traffic speed survey data for the A19.

3 Site Observations and Hazard Identification

3.1 SITE OBSERVATIONS

3.1.1 A site visit, to help identify any potential hazards, was undertaken by the Road Safety Reviewer. This consisted of observations from the vehicle and 'drive-throughs' (with 'dashcam' recordings) taken on Tuesday 1 February 2022 between 10:50 and 11:25 hours. The weather was sunny with clouds and the road surface dry at the time of the site visit. At the time of the site visit Brook's Garage was closed, with building frontage works taking place, but no closed signs were in place.

3.1.2 The following observations were made:

- It would appear that the current layout of Brook's Garage differs from the previously approved layout and more closely represents the proposed layout, which is waiting for a planning approval. For example:
 - Fuel pumps layout: Parallel pumps are now an echelon layout;
 - Parking appears to represent the proposed layout; and
 - Removal/relocation of the previously approved air/water pumps.
- The residential property had 4 vehicles parked in the immediate vicinity.



- Wilson Building – The perimeter of land under separate ownership at the access has been denoted by bollards and water-filled barriers.



- Brooke's Garage currently promotes a range of retail and food offering, including deli, coffee shop and hot foods (previously a small kiosk).

3.1.3 In addition, the Road Safety Reviewer was provided images of other conflict issues and these are shown in **Figure 3.1** below.

Figure 3.1 - Image evidence

Unloading on A19



HGV reversing onto A19 (northern access)



Fuel delivery

(Resulting in vehicles backing up onto A19)



Vehicle congestion resulting in accesses being blocked

(Resulting in accesses blocked, and pedestrians moving around forecourt and queuing on A19)



Access route blocked



Queues backing onto A19 (resulting in vehicles also using adjacent access)



Queuing traffic on A19

Queues forming behind right turning vehicle
(Driver frustration and hazardous manoeuvres)

- 3.1.4 Overall, it appears that, at various times during a typical day, Brooke's Garage requires more operational area and more parking / loading space than is currently available. In other words, vehicles fuelling at the pumps, parking and loading demand sometimes exceeds supply of the available space. Additionally, some of the informal hazard mitigation measures appear to be unsatisfactory.

3.2 HAZARD IDENTIFICATION

- 3.2.1 The potential hazards identified from the site visit and desktop review of the information supplied are recorded in **Table 3.1** below. These hazards will be taken forward to Section 4 to be 'risk assessed'.
- 3.2.2 All hazards identified are referenced to the planning drawing in **Appendix A**.

Table 3.1 - Summary of potential hazards at Brooke's Garage

Ref	Potential Hazard	Additional commentary
1	Conflicts resulting from vehicles entering/egressing parking bays 1 – 5 at the northern end of the site	It may be a challenge for drivers to enter/egress the parking bays. The orientation, closeness to northern access (inter-visibility between turning traffic and parking bays), reversing movements may individually or collectively lead to conflicts.
2	Conflict between vehicles entering parking bays 6 – 13 (south side of the shop) and vehicles egressing the fuel pumps.	Vehicles have to travel through the forecourt to access parking bays 6 – 13.
3	Pedestrians at risk of being struck.	The overall access/egress arrangements throughout Brooke's Garage may increase conflict likelihood. In addition, vehicle occupants in the queuing traffic or those on A19 verge walking through the forecourt to access the shop or refreshment facilities. Inappropriate driver behaviour, and vehicle manoeuvres including reversing due to other hazards identified.

Ref	Potential Hazard	Additional commentary
4	Conflicts between drivers entering/egressing Brooke's Garage from parking bays 6 – 13 and other vehicle movements.	There is a strategy to access parking bays 6 – 13 (through the forecourt) however, there is ambiguity regarding the direction by which drivers egress Brooke's Garage from these bays. (For example, do drivers exit using the same route by which entered, or do they travel around the rear of the building, in a 'one-way' arrangement?). In addition, it would appear that a vehicle may be a conflict with an opposing traffic flow and / or may even use the northern access to re-join the A19.
5	Fuel deliveries/servicing – Vehicles may cause disruption to the operation of the site and increase conflict risks.	There is an apparent lack of clarity of where and how deliveries/servicing is achieved. This confusion can additionally lead to a blocked point of access.
6	Drivers entering/egressing Brooke's Garage accesses from/to the A19 (present layout /future layout).	Currently there is no clear instruction to drivers to inform them of the correct use of the northern and southern accesses. This results in conflicts between opposing traffic, as well as conflicts between vehicles within the internal layout.
7	Forecourt arrangement results in vehicles backing onto or close to the A19 carriageway.	The layout of the forecourt and fuel pumps, the lack of 'stacking capacity' (and likely increased waiting times for those making use of the on-site facilities) currently results in vehicles queuing back onto the A19 carriageway. In addition, this results in the blocking of the through route to the Wilson Building and associated car parking.
8	Vehicles unable to manoeuvre through the proposed route due to barriers/bollards (particularly delivery vehicles).	If the barriers/bollards remain insitu it will impact on the movement around the site and access/egress may not be achievable. This could result in vehicles needing to reverse, increased queues and/or block through routes. Vehicles may even use the northern access to re-join the A19.
9	Tracking of large vehicles through the site may not be achievable. (Particularly delivery vehicles).	It is unclear whether large vehicles are able to manoeuvre through the site in forward gear only. If several movements are required in forward and reverse gear it may lead to conflicts.
10	Additional facilities may increase visitors – This may result in hazards on the A19. Frustrated drivers may reverse onto the A19 carriageway leading to conflicts.	Additional turning movements to/from the A19 and stationary/slow moving vehicles entering the site may increase the potential for conflicts. Drivers may reverse onto the A19 carriageway if they struggle to gain access or are frustrated by perceived or actual delays.
11	Inadequate parking may lead to inappropriate parking behaviour.	Parking spaces may be occupied by the residential property owner/visitors and/or staff. Brooke's Garage appears a popular site and the designated parking bays may not be adequate in any case.

Ref	Potential Hazard	Additional commentary
12	Buildings may impede inter-visibility between driver/driver and/or pedestrian/driver.	Sight lines may be impeded by the building and could exacerbate potential hazards identified in Ref 4, 5, 8 & 9. The restricted sight lines are a hazard to pedestrians walking around the site.
13	Deliveries taking place from the A19 carriageway leading to conflict.	Deliveries may take place from the A19 due to issues identified in this section.

4 Risk Assessment

4.1 METHODOLOGY

- 4.1.1 The object of the report is to identify and quantify the likely risk; that is the concern of conflicts and injuries resulting from the identified hazards. This will be achieved by adapting and utilising the safety risk assessment table within DMRB GG104 'Requirements for safety risk assessment'.
- 4.1.2 The level of detail for any safety risk review should be proportionate to the specific safety risks being assessed. In addition, the risks should include an assessment of the likelihood or the risk being realised and the severity of the consequences.
- 4.1.3 If this Road Safety Review was to be entirely 'data led', simply based upon looking at the 5-year road safety record, it can be shown that there has been only one reported injury collision in relation to Brooke's Garage accesses. However, it is known that road user collisions are rare, random, multi-factor events and as such are virtually impossible to predict, therefore, doing nothing is not appropriate, there is an 'unacceptable' risk.

4.2 SAFETY RISK ASSESSMENT

- 4.2.1 The relevant hazards and risks have been identified and considered within the safety risk assessment. **Table 4.1** below has been extracted from GG104 (Table D.1) provides values for likelihood and severity of outcomes. This table will be used to assess acceptability of risk levels based on likelihood and severity of outcome.

Table 4.1 - Risk value, likelihood and severity of outcomes that may be assigned to qualitative data for the purposes of assessment.

Likelihood (L) x Severity (S) = Risk value		Severity (S)				
		Minor harm; Minor damage or loss no injury	Moderate harm; Slight injury or illness, moderate damage or loss	Serious harm; Serious injury or illness, substantial damage or loss	Major Harm; Fatal injury, major damage or loss	Extreme harm; Multiple fatalities, extreme loss or damage
Likelihood (L)	Very unlikely; Highly improbable not known to occur	1	2	3	4	5
	Unlikely: Less than 1 per 10 years	2	4	6	8	10
	May happen; Once every 5 – 10 years	3	6	9	12	15
	Likely; Once every 1 – 5 years	4	8	12	16	20
	Almost certain; once a year or more	5	10	15	20	25

Risk Value (R)	Required Action
Low (1 – 9)	Ensure assumed control measures are maintained and reviewed as necessary
Medium (10 – 19)	Additional control measures needed to reduce risk rating to a level which is equivalent to a test of ‘reasonably required’ for the population concerned
High (20 -25)	Activity not permitted. Hazard to be avoided or risk to be reduced to tolerable

- 4.2.2 Each of the hazards and risks will be assessed using **Table 4.1**. The recorded hazard identification and analysis of safety risk, risk values and safety risk mitigations are shown in **Table 4.2**.
- 4.2.3 The selection of a scale for the collision outcome is relatively arbitrary. It becomes more straight forward when considering that collision severity is influenced by three main factors:
- Relative speed of impacting vehicle or vehicles;
 - Relative vulnerability of road users involved; and
 - Type of collisions (impact).
- 4.2.4 Risk Assessment is not a “pure science” however; based on the relevant experience and knowledge of collision investigation, the reviewer is able to make an informed judgement.

Table 4.2 - Recorded hazard identification and analysis of safety risk, risk values and safety risk mitigations.

Hazard Ref	Risk	Severity	Likelihood	Risk Value	Mitigation to address risk
1	Potential for vehicle-to-vehicle conflicts between those entering/egressing parking bays and those entering the garage.	2	3	6	<ul style="list-style-type: none"> • Relocate/re-orientate parking bay layouts. • Ensure inter-visibility is provided.
2	Potential for vehicle-to-vehicle conflict (side impact). Drivers surprised and ‘fail to look properly’ by vehicles travelling through forecourt (possibly at inappropriate speeds), when egressing fuel pumps.	2	3	6	<ul style="list-style-type: none"> • Provide measures to improve driver awareness of traffic movement. For example, road markings, surface colouring etc. • Mark out fuel pump areas and ensure inter-visibility between drivers and adequate route widths. • Review and change fuel pump layout. • Re-route vehicles. • Reduce vehicle speeds, i.e. speed limit signs, speed bumps.
3	Potential for pedestrians to be struck by vehicles.	3	3	9	<ul style="list-style-type: none"> • Address queuing traffic. Refer to other mitigation measures identified to

Hazard Ref	Risk	Severity	Likelihood	Risk Value	Mitigation to address risk
					address these concerns. <ul style="list-style-type: none"> Provide clear delineated pedestrian walkways.
4	Vehicle-to-vehicle collisions may occur, possible head-on related collisions and rear-end shunts around the garage. If driver egress using the northern access this could lead to vehicle-to-vehicle conflicts on the A19 which would have the potential to significantly increase injury severity.	3	3	9	<ul style="list-style-type: none"> Review the routeing and provide clear unambiguous signing to inform drivers.
5	If disruption occurs, drivers may become frustrated and injudiciously travel through the garage leading to conflicts.	3	4	12	<ul style="list-style-type: none"> Provide a delivery/servicing operating protocol which mitigates the risk. For example, provide planned time slots (off-peak), use temporary measures to manage movement. Introduce an incident reporting system, if not already in place. Review and change fuel pump layout. Review and alter routeing strategy.
6	Potential for head-on type collisions with opposing traffic. There is also the potential for side impact and rear end shunts on the A19 if resulting conflicts effect the A19.	3	4	12	<ul style="list-style-type: none"> Provide clear and unambiguous signing strategy. Provide a right-turning bay for stationary/right turning vehicles.
7	Potential for rear shunts if vehicles queue back onto/towards the A19.	3	4	12	<ul style="list-style-type: none"> Review and change fuel pump layout and vehicle routeing.
8	Potential for vehicle-to-vehicle conflicts if access is blocked leading to injudicious driver behaviour.	3	5	15	<ul style="list-style-type: none"> Discuss and agree movement of barriers/bollards. If the above is not achievable, layout and routeing strategy will need to be reviewed and amended.
9	If large vehicles can't manoeuvre through the site in forward gear and require several movements, it could	2	3	6	<ul style="list-style-type: none"> Carryout a swept path analysis of the garage layout. If necessary, layout and routeing

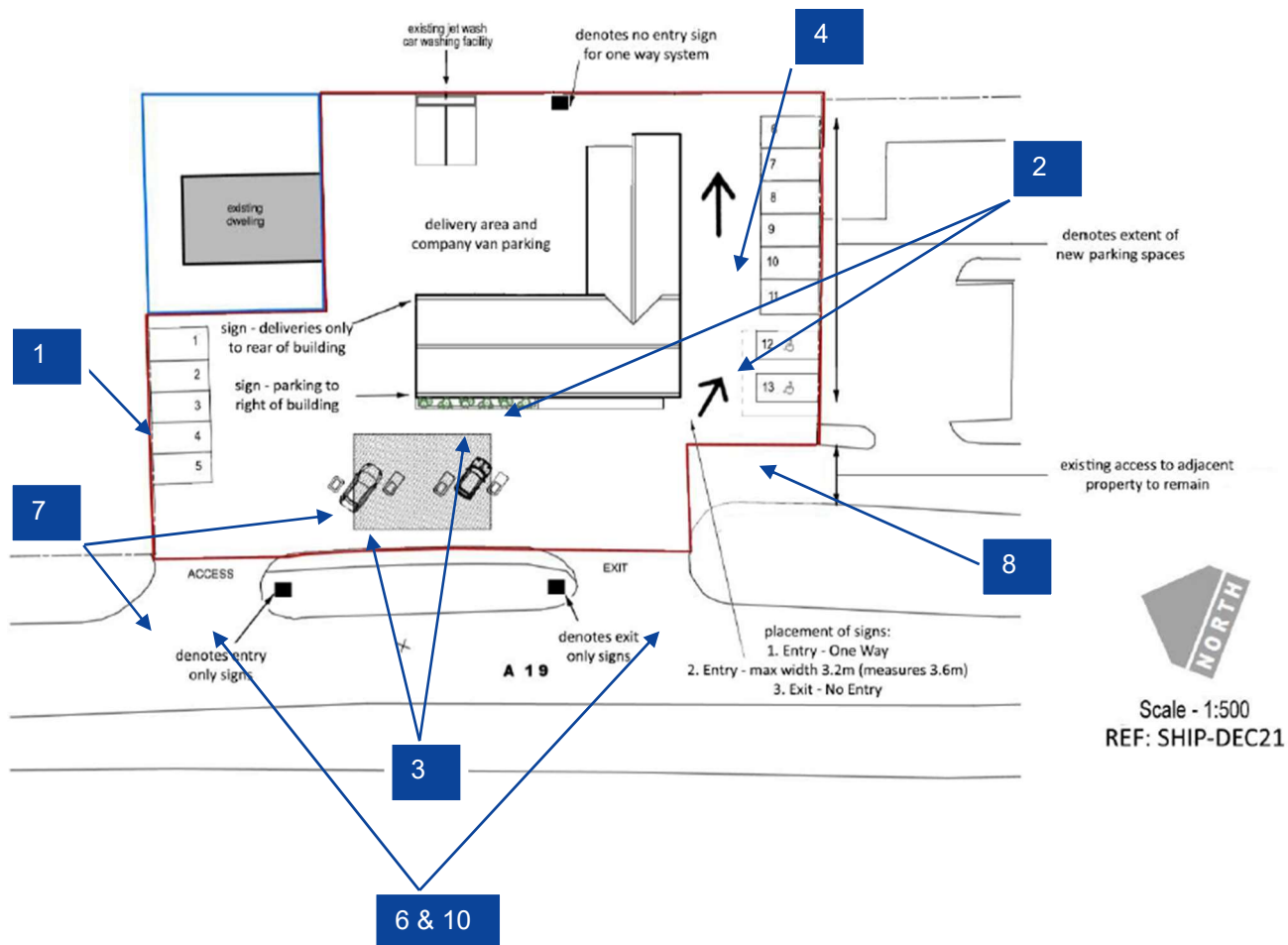
Hazard Ref	Risk	Severity	Likelihood	Risk Value	Mitigation to address risk
	lead to vehicle-to-vehicle conflicts.				strategy will need to be amended.
10	Potential for rear shunts involving A19 traffic.	3	4	12	<ul style="list-style-type: none"> Refer to mitigation measures to address queuing traffic. Additional mitigation to be considered could be measures on the A19 to reduce traffic speeds, create awareness of stationary/slow moving vehicles ahead and the presence of the garage and subsequent movements. Provide a right-turning bay for stationary/right turning vehicles.
11	Inappropriate parking may lead to conflicts and exacerbate other identified issues.	2	4	8	<ul style="list-style-type: none"> Review the parking strategy to ensure that adequate number of parking bays are provided.
12	If visibility impeded and other identified issues are not addressed, it could lead to vehicle-to-vehicle conflicts.	2	3	6	<ul style="list-style-type: none"> Review and provide appropriate sight lines.
13	Collisions may occur if deliveries take place from A19. Incidents may include head-on and rear end collisions on the A19, and pedestrian collisions with garage layout.	3	4	12	<ul style="list-style-type: none"> Provide a delivery protocol which ensures no deliveries from the A19. Internal layout and queuing will also need to be addressed.

5 Conclusion and Recommendation

- 5.1.1 This Risk Assessment is not a “pure science” however; based on the relevant experience and knowledge of collision investigation, the Road Safety Reviewer is able to make an informed assessment.
- 5.1.2 The findings show that there are many ‘low – medium risk’ in terms of the likelihood of a collision occurring. If an injury collision did occur in most instances the severity is likely to result in slight injury or moderate damage, this is due to the likely low speeds within the internal layout. However, when the collisions involve vehicles on the A19 there is a risk of increased severity with traffic speeds being a lot greater.
- 5.1.3 It is acknowledged that all road users should bear responsibility for their own safety. However, there is a responsibility and duty of care for land and business owners and an obligation to ensure that the operation of the site is as safe as reasonably practicable.
- 5.1.4 It is recommended that the identified hazards should be considered and rectified as part of the planning process. It is appreciated that decisions are usually balanced and take account of all relevant factors and constraints and be proportionate.

Appendices, Figures and Tables

Appendix A: Location Plan



GENERAL

- 5. Fuel deliveries/servicing
- 9. Tracking of large vehicles
- 11. Parking throughout
- 12. Buildings impeding visibility
- 13. Deliveries from A19

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