



# ABERDEEN SOUTH HARBOUR LINK ROAD DETAILED DESIGN

## ASHLR: Permanent Traffic Management Proposals

DETAILED DESIGN  
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## Table of contents

1.	Introduction	4
1.2.	Background	4
2.	Baseline Data	5
2.1.	Data Collection	5
2.2.	Survey Findings	6
2.3.	Recommended Approach	17
3.	Potential Interventions	18
3.2.	Width Restrictions	19
3.3.	Weight Restrictions	19
3.4.	Other Considerations	20
4.	Recommendations	21
4.2.	Potential Impact of measures on road network	21
4.3.	Impact on wider Aberdeen South Harbour Link Road Project	22
Appendix A. ANPR Site Locations		23

## Figures

Figure 2-1 :	ANPR traffic survey locations	5
Figure 2-2:	12-hour (07:00-19:00) vehicle flows across southern traffic survey sites	7
Figure 2-3:	12-hour (07:00-19:00) vehicle flows across northern traffic survey sites	8
Figure 2-4:	Movement 1, Coast Road as a through route via Torry	11
Figure 2-5:	Movement 2, Coast Road as through route via Cove	12
Figure 2-6:	Movement 3, accessing / egressing ASH & Scottish Water Treatment Works via Torry	13
Figure 2-7:	Movement 4, accessing / egressing ASH via Cove	14
Figure 2-8:	Movement 5, accessing / egressing ASH via Hareness Road	15
Figure 3-1 :	Location of proposed HGV restriction	18
Figure 3-2 :	Mandatory width restriction Diagram 692A	19
Figure 3-3 :	Mandatory weight restriction, Diagram 622.1A	19
Figure 3-4 :	Example of variation in width restriction TRO for buses	20

# 1. Introduction

1.1.1. This report forms part of Work Package 23: Permanent Traffic Management of the Aberdeen South Harbour Link Road Detailed Design. It presents traffic management proposals relating to upgrades of Hareness Road and upgrades/realignment of Coast Road that have been progressed to support expansion plans at Aberdeen South Harbour (ASH).

## 1.2. Background

1.2.1. Following consultation carried out in November 2023 during DMRB Stage 2 of the project, concerns were raised by members of the public that there are excessive heavy goods vehicle (HGV) movements to/from ASH through residential areas. The residential areas highlighted were Torry to the north of ASH, and Cove / Burnbanks Village to the south.

1.2.2. North of ASH, HGV traffic was highlighted as an issue along Victoria Road (a local distributor road with residential frontages, on-street parking and pedestrian crossing islands), passing through Torry.

1.2.3. South of ASH, HGV traffic was highlighted as an issue on both Coast Road (a rural single carriageway without residential frontages) which passes east of Burnbank Village and on Langdykes Road (a local distributor road with residential frontages, on street parking and pedestrian islands) passing through the village of Cove.

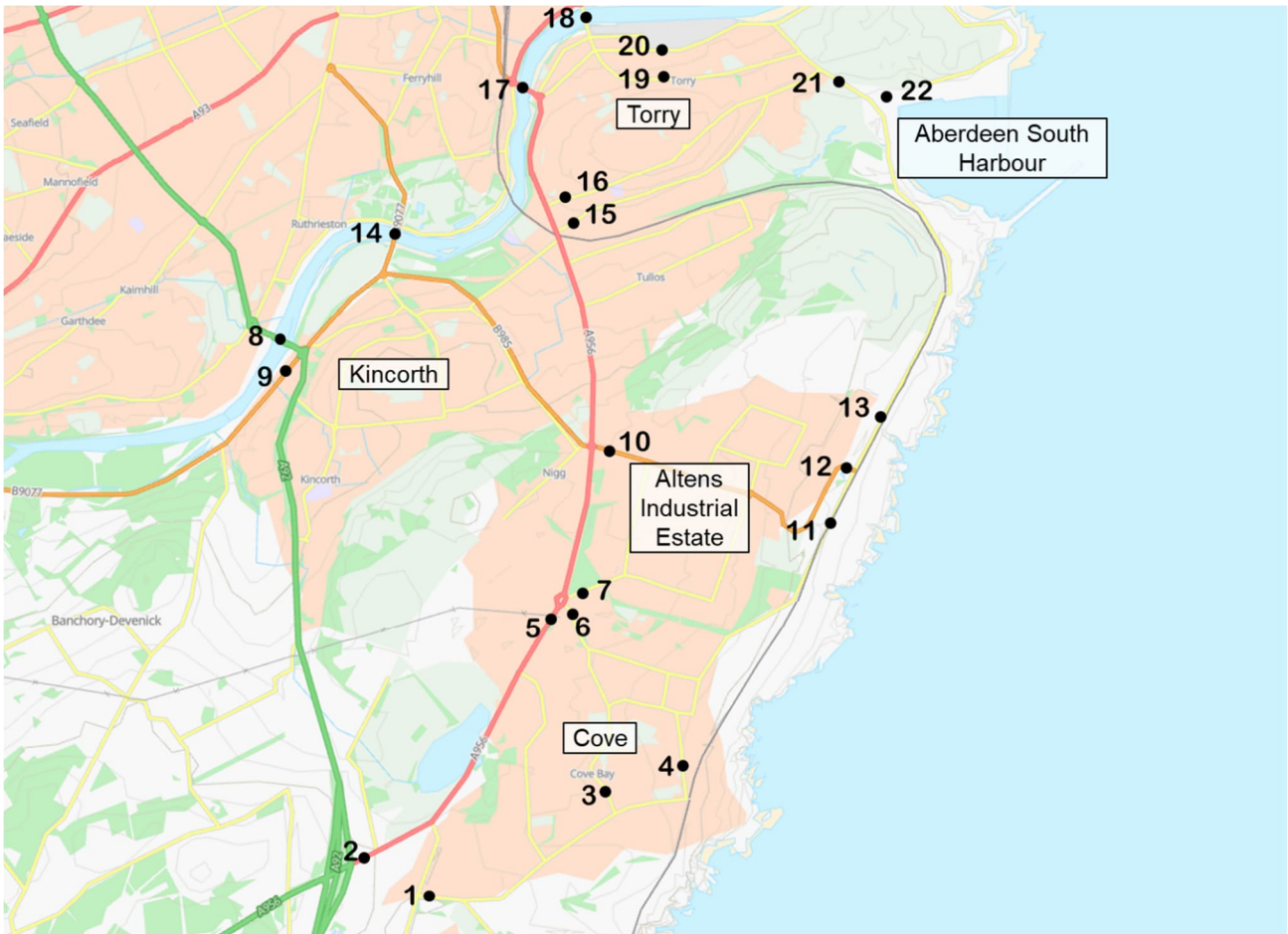
1.2.4. To investigate this perceived issue, Automatic Number Plate Recognition (ANPR) traffic surveys have been undertaken to determine the extent of HGV routing between ASH and the strategic road network via residential areas. The traffic survey data has been used to inform a traffic management optioneering and recommendations exercise necessary to reduce any undesirable traffic routing through the communities of Torry and Cove.

## 2. Baseline Data

### 2.1. Data Collection

2.1.1. Traffic surveys were undertaken by Nationwide Data Collection (NDC) between the 2<sup>nd</sup> – 4<sup>th</sup> July 2024 over 12-hour periods (07:00-19:00) by means of ANPR cameras. The surveys were conducted on neutral weekdays in accordance with Transport Appraisal Guidance (TAG) Unit M1.2. There were 22 survey site locations as shown in **Figure 2-1**. Further survey site location details can be found in **Appendix A**.

Figure 2-1 : ANPR traffic survey locations



2.1.2. ANPR Origin–Destination data (OD) was supplied by NDC in two formats. One in a ‘First Seen Last Seen’ format based on the first and last site a vehicle was recorded at as it travelled through the survey area, and secondly, as a path analysis to understand the routing a vehicle had taken. For example, Site 2 > Site 5 > Site 10. Additionally, classified link counts and journey time information was supplied.

2.1.3. OD data was provided in four vehicles classes:

- All vehicles
- Light vehicles (LV)
- Heavy goods vehicles (HGV)
- Public service vehicles (PSV)

2.1.4. The traffic surveys were completed with no errors except for Site 9 which was subject to vandalism prior to the beginning of the survey on 4<sup>th</sup> July however this was rectified at 13:18.

### Data Validation

2.1.5. A further traffic survey was undertaken by NDC for a 36-hour period from 19:00 on 3<sup>rd</sup> September to 07:00 on the 5<sup>th</sup> September 2024, as such running for two full nights and one full day. The same survey method was employed across the 22 survey site locations as previously undertaken by NDC.

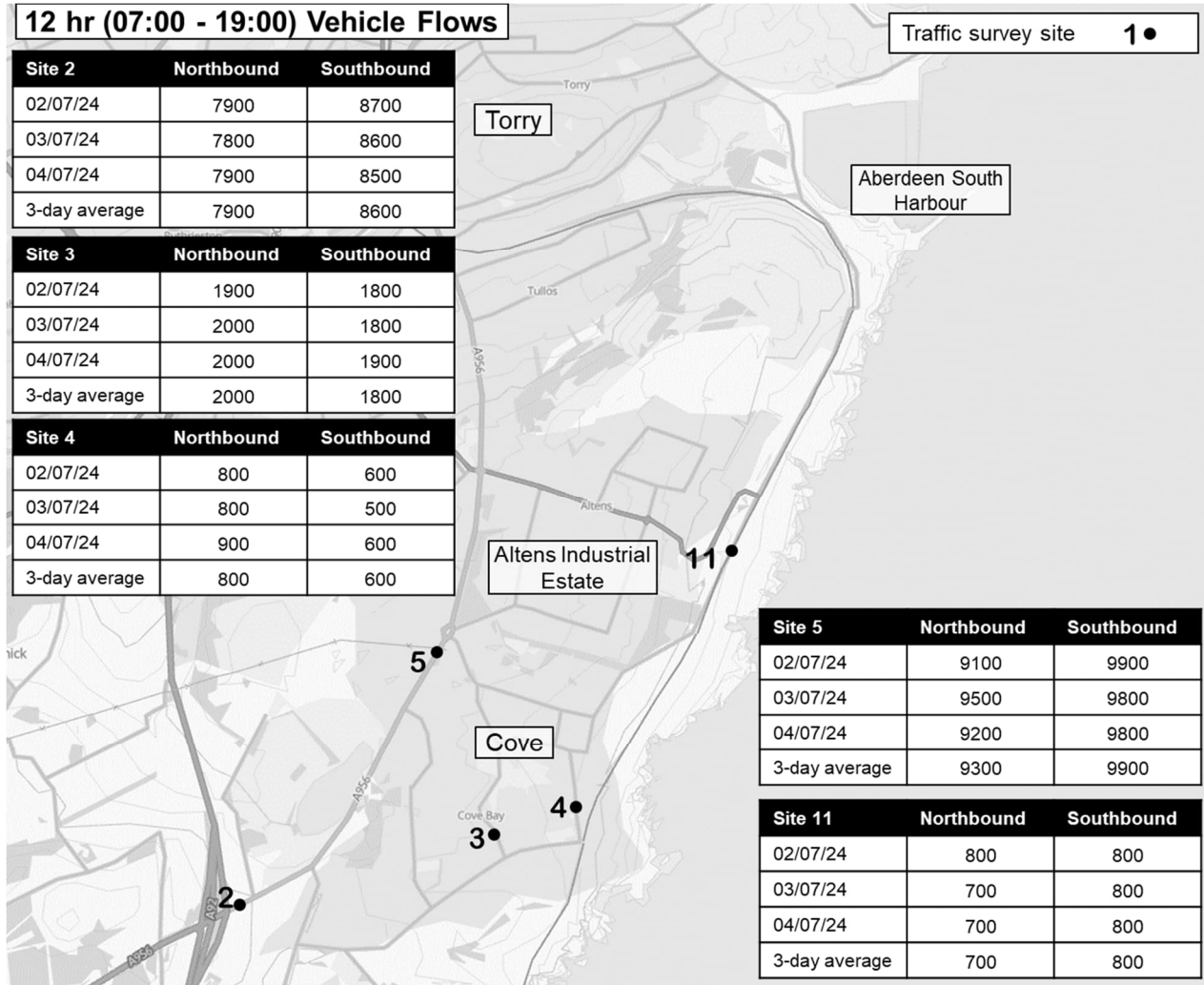
2.1.6. The results from the September surveys corroborated initial findings from the July survey with no significant deviations or unexpected outcomes observed. The results of the overnight surveys (19:00-07:00) showed no significant HGV movements, therefore they have not been analysed in the following sections.

## 2.2. Survey Findings

### Traffic Flows

2.2.1. **Figure 2-2** and **Figure 2-3** show traffic flows for all vehicle classes between 07:00-19:00 across some key locations across the study area.

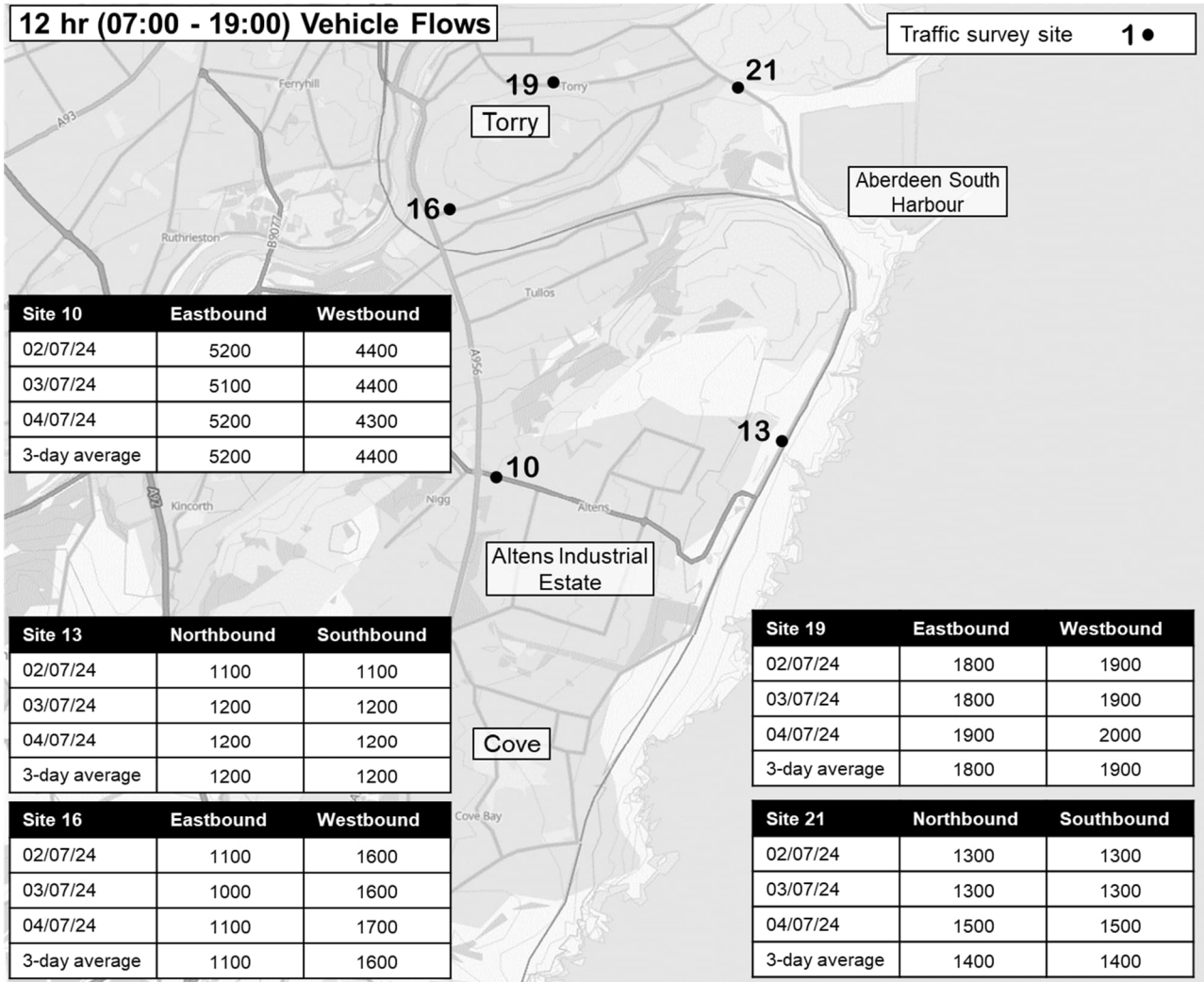
Figure 2-2: 12-hour (07:00-19:00) vehicle flows across southern traffic survey sites



Any discrepancies in 3-day average flows are due to rounding

2.2.2. **Figure 2-2** shows the greatest flows at Site 5 on Wellington Road just prior to Souterhead Roundabout. An average of 9,300 vehicles were recorded travelling northbound over the 3-day period and 9,900 travelling southbound. Lower flows are observed in Cove at Site 3 (Earn's Heigh Road) and Site 4 (Loirston Road). Over the 3-day period there were an average of 700 vehicles travelling northbound and 800 southbound on Coast Road just south of the Hareness Road junction (Site 11).

Figure 2-3: 12-hour (07:00-19:00) vehicle flows across northern traffic survey sites



Any discrepancies in 3-day average flows are due to rounding

2.2.3. **Figure 2-3** shows the greatest flows on Hareness Road (Site 10); an average of 5,200 vehicles were recorded travelling eastbound and 4,400 westbound over the 3-day period. On Coast Road just north of Hareness Road (Site 13), an average of 1,200 vehicles were observed travelling northbound and southbound. Site 19 on Victoria Road recorded average vehicle flows of 1,800 eastbound and 1,900 westbound over the 3-day period.



## HGV Movements

2.2.4. Five key HGV movements have been analysed from the survey data as follows:

- **Movement 1:** Coast Road as a through route via Torry
- **Movement 2:** Coast Road as a through route via Cove
- **Movement 3:** Accessing / egressing ASH & Scottish Water Treatment Works via Torry
- **Movement 4:** Accessing / egressing ASH & Scottish Water Treatment Works via Cove
- **Movement 5:** Accessing / egressing ASH & Scottish Water Treatment Works via Hareness Road

2.2.5. The key HGV movements are shown the following pages on

2.2.6. **Figure 2-4 to Figure 2-8. Table 2-1 to Table 2-5** show the average three-day HGV demand (07:00-19:00) for the five key movements surrounding ASH. Note that origin and destination references relate to the traffic survey site location.

Figure 2-4: Movement 1, Coast Road as a through route via Torry

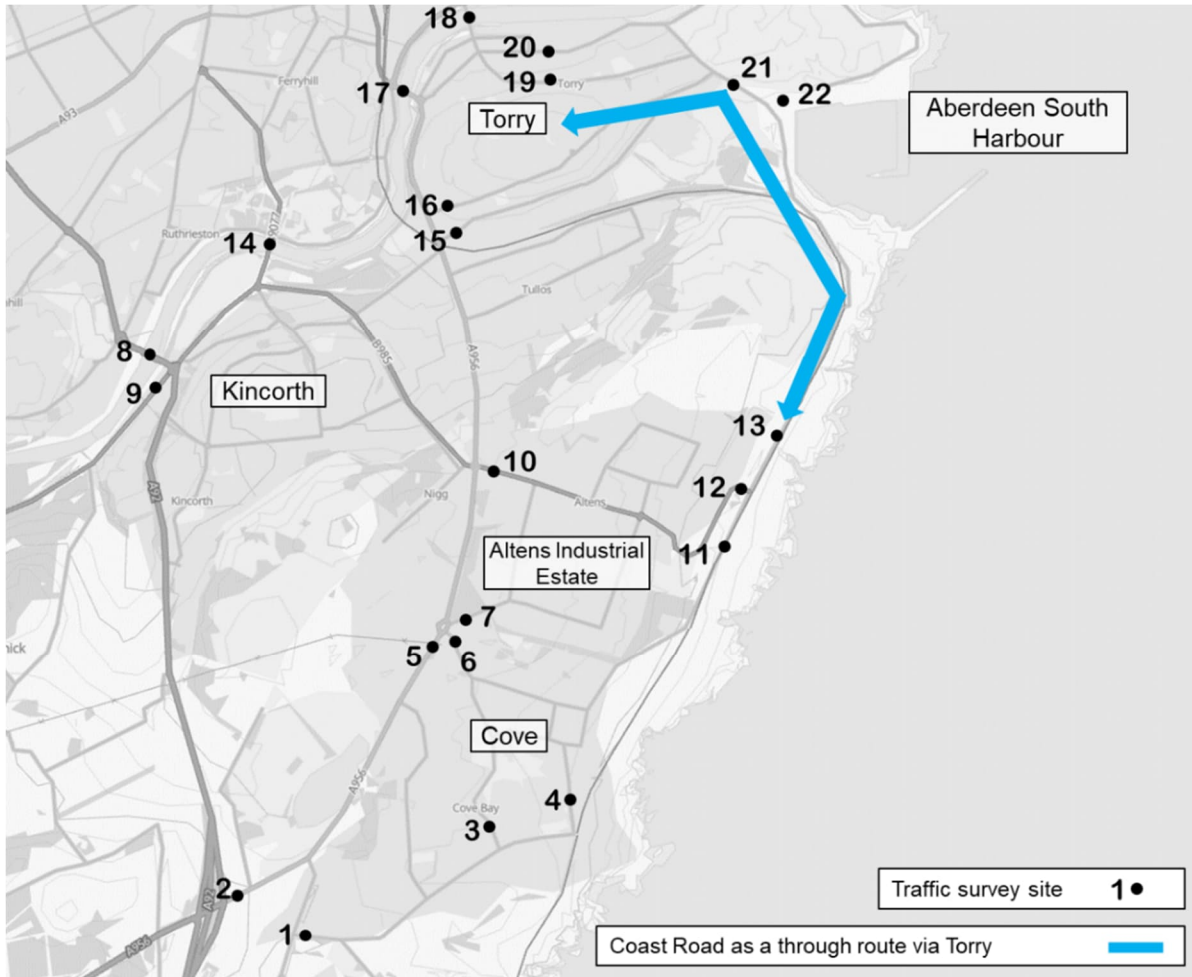


Table 2-1 : Movement 1, Coast Road as a through route via Torry (3-day average HGV demand (07:00 – 19:00))

Movement 1, Coast Road as a through route via Torry (3-day average HGV demand (07:00 – 19:00))					
Direction	Origin	Destination	via	HGV Demand	Route %
Northbound	13	20	21	1	3%
	13	19	21	19	97%
	13	16	21	0	0%
	13	15	21	0	0%
Southbound	20	13	21	1	4%
	19	13	21	22	96%
	16	13	21	0	0%
	15	13	21	0	0%

2.2.7. As can be viewed in Table 2-1, there was an average of 43 HGV trips per day along Coast Road via Torry. 96-97% of these movements are routed via Victoria Road (Site 19).

Figure 2-5: Movement 2, Coast Road as through route via Cove

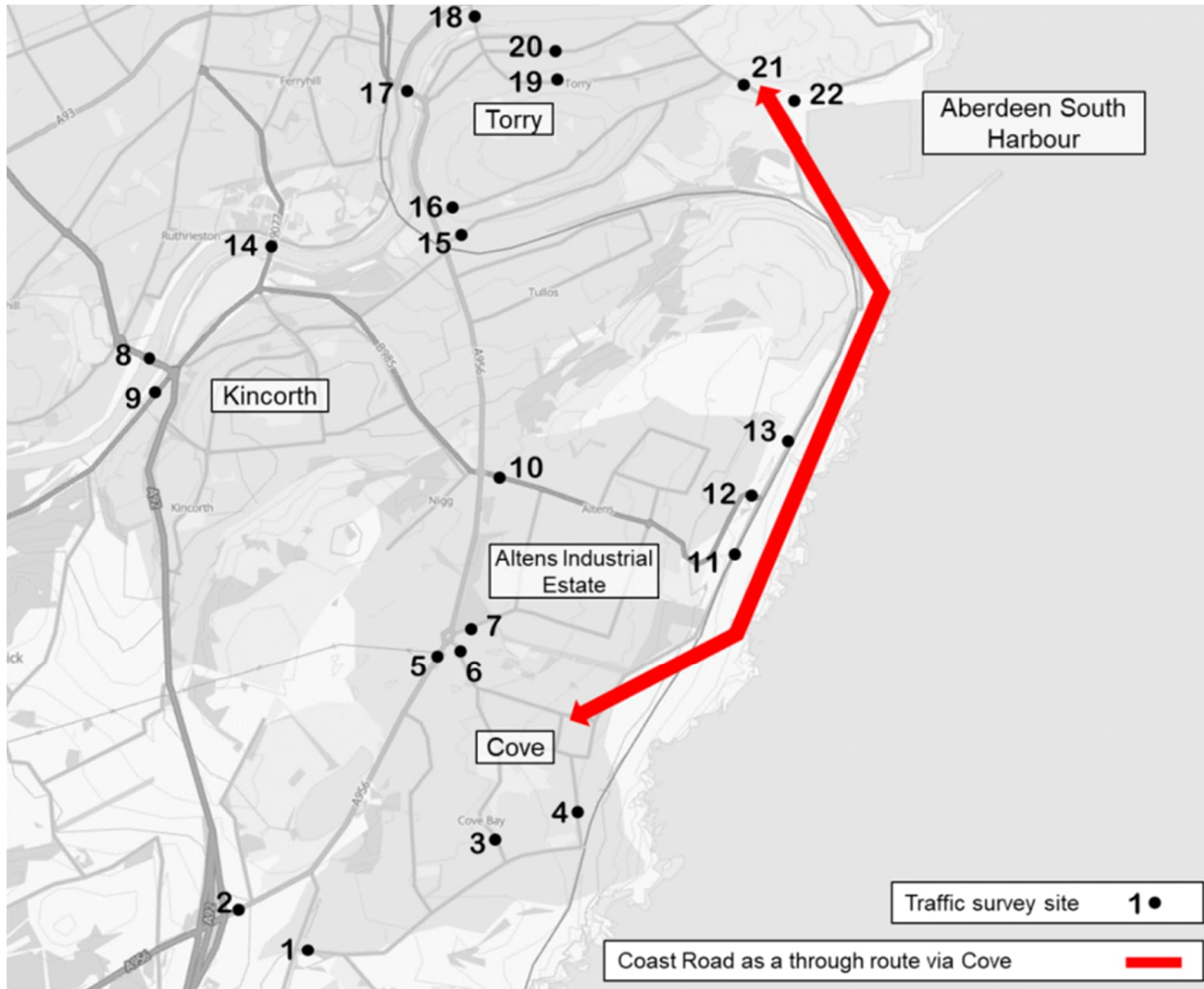


Table 2-2 : Movement 2, Coast Road as a through route via Cove (3-day average HGV demand (07:00 – 19:00))

Movement 2, Coast Road as a through route via Cove (3-day average HGV demand (07:00 – 19:00))					
Direction	Origin	Destination	via	HGV Demand	Route %
Northbound	3	21	11 & 13	0	0%
	4	21	11 & 13	3	75%
	6	21	11 & 13	1	25%
Southbound	21	3	13 & 11	0	10%*
	21	4	13 & 11	1	30%
	21	6	13 & 11	2	60%

\*1 over 3 days so average is 0.33

2.2.8. **Table 2-2** shows there was an average of seven HGV movements along Coast Road routed via Cove. Northbound trips are mainly routed via Loirston Road (Site 4) (75%) and southbound trips mainly via Langdykes Road (Site 6) (60%).

Figure 2-6: Movement 3, accessing / egressing ASH & Scottish Water Treatment Works via Torry

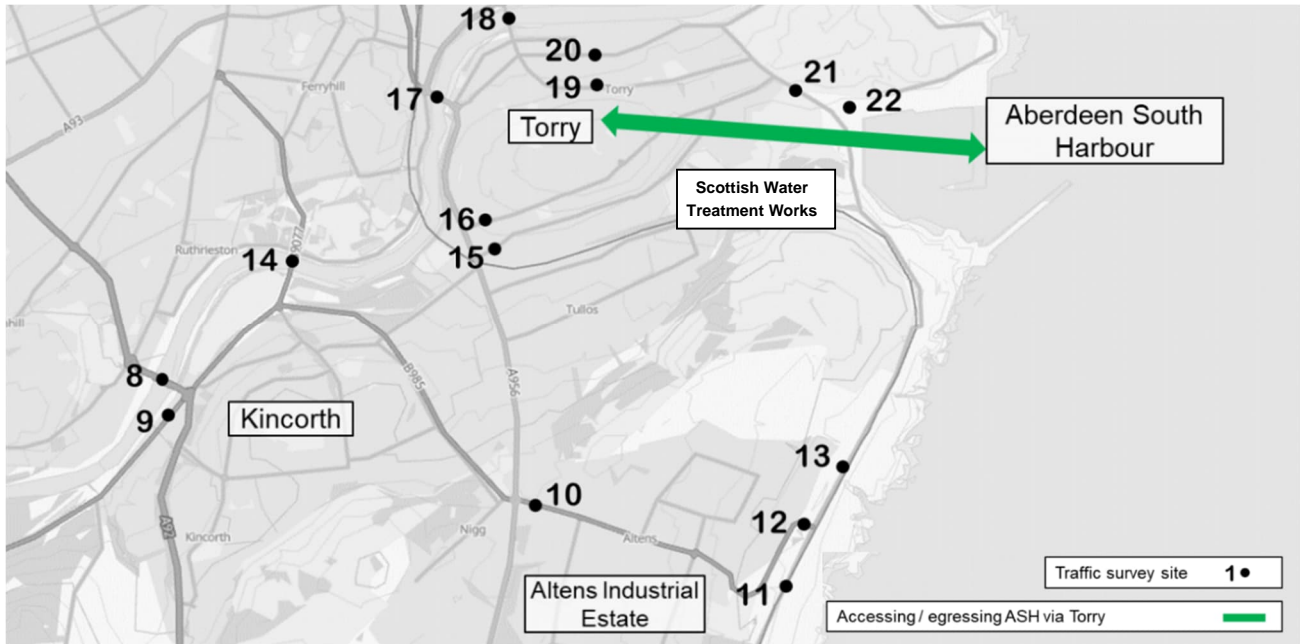


Table 2-3 :Movement 3, accessing / egressing ASH & Scottish Water Treatment Works via Torry (3-day average HGVD demand (07:00 – 19:00))

Movement 3, accessing / egressing ASH via Torry (3-day average HGVD demand (07:00 – 19:00))					
Direction	Origin	Destination	via	HGV Demand	Route %
Eastbound	18	21	20	1	2%
	18	21	19	25	88%
	17	21	20	0	0%
	17	21	19	2	8%
	16	21		0	0%
	15	21		0	0%
Westbound	21	18	20	0	1%*
	21	18	19	21	89%
	21	17	20	1	3%
	21	17	19	2	7%
	21	16		0	0%
	21	15		0	0%

\*1 over 3 days so average is 0.33

**2.2.9.** There was an average of 52 HGVD trips per day accessing / egressing ASH and the Scottish Water Treatment Works via Torry as shown in

**2.2.10.**

**2.2.11.** Table 2-3. 88-89% of the trips were routed via Victoria Road (Site 19).

Figure 2-7: Movement 4, accessing / egressing ASH via Cove

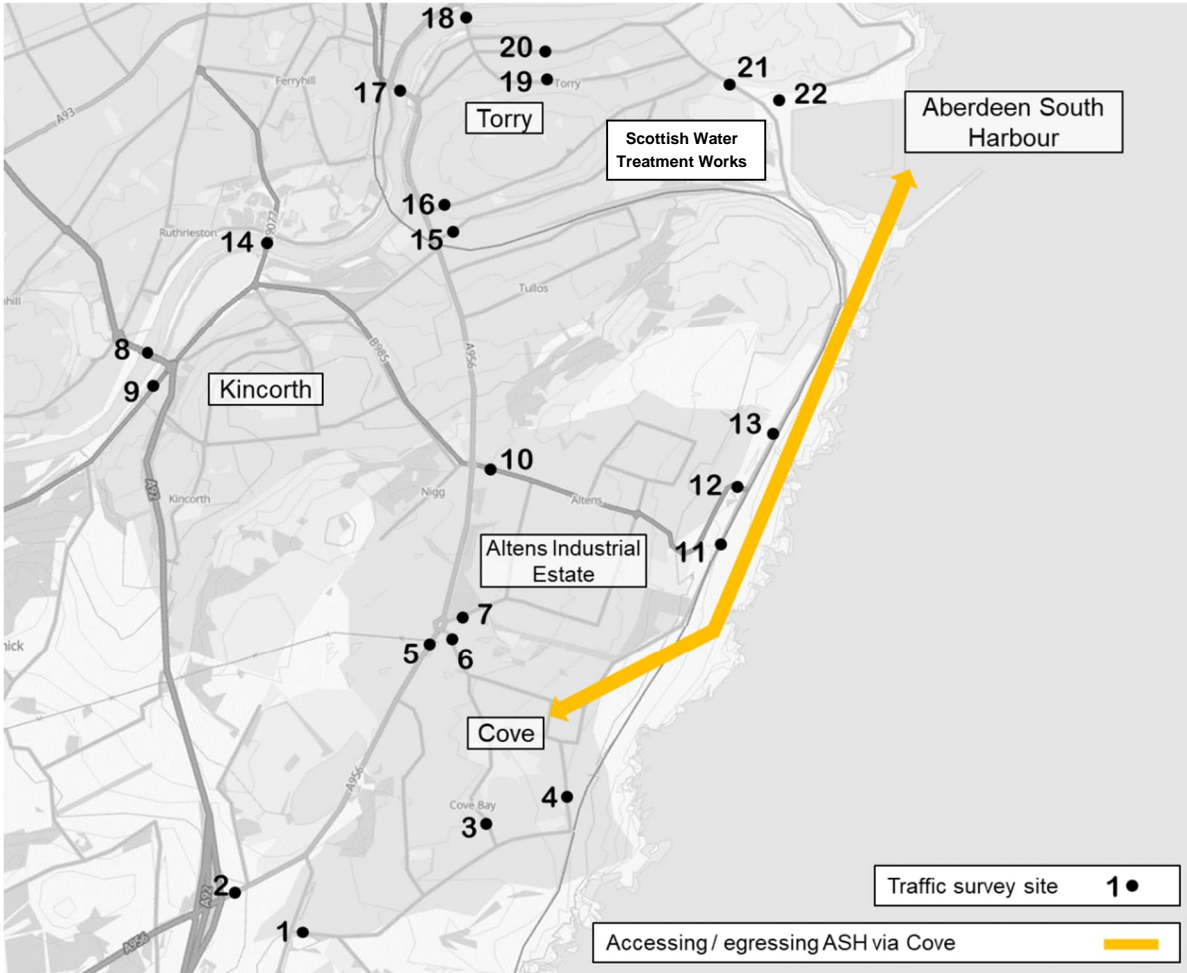


Table 2-4 : Movement 4, accessing / egressing ASH via Cove (3-day average HGV demand (07:00 – 19:00))

Movement 4, accessing / egressing ASH via Cove (3-day average HGV demand (07:00 – 19:00))					
Direction	Origin	Destination	via	HGV Demand	Route %
Northbound	3	13	11	0*	8%
	4	13	11	3	69%
	6	13	11	1	23%
Southbound	13	3	11	2	28%
	13	4	11	1	17%
	13	6	11	3	56%

\*1 over 3 days so average is 0.33

2.2.12. There was an average of 10 HGV trips per day accessing / egressing ASH via Cove as shown in **Table 2-4**. Northbound trips were mainly routed via Loirston Road (Site 4) (69%) and southbound trips via Langdykes Road (Site 6) (56%).

Figure 2-8: Movement 5, accessing / egressing ASH via Hareness Road

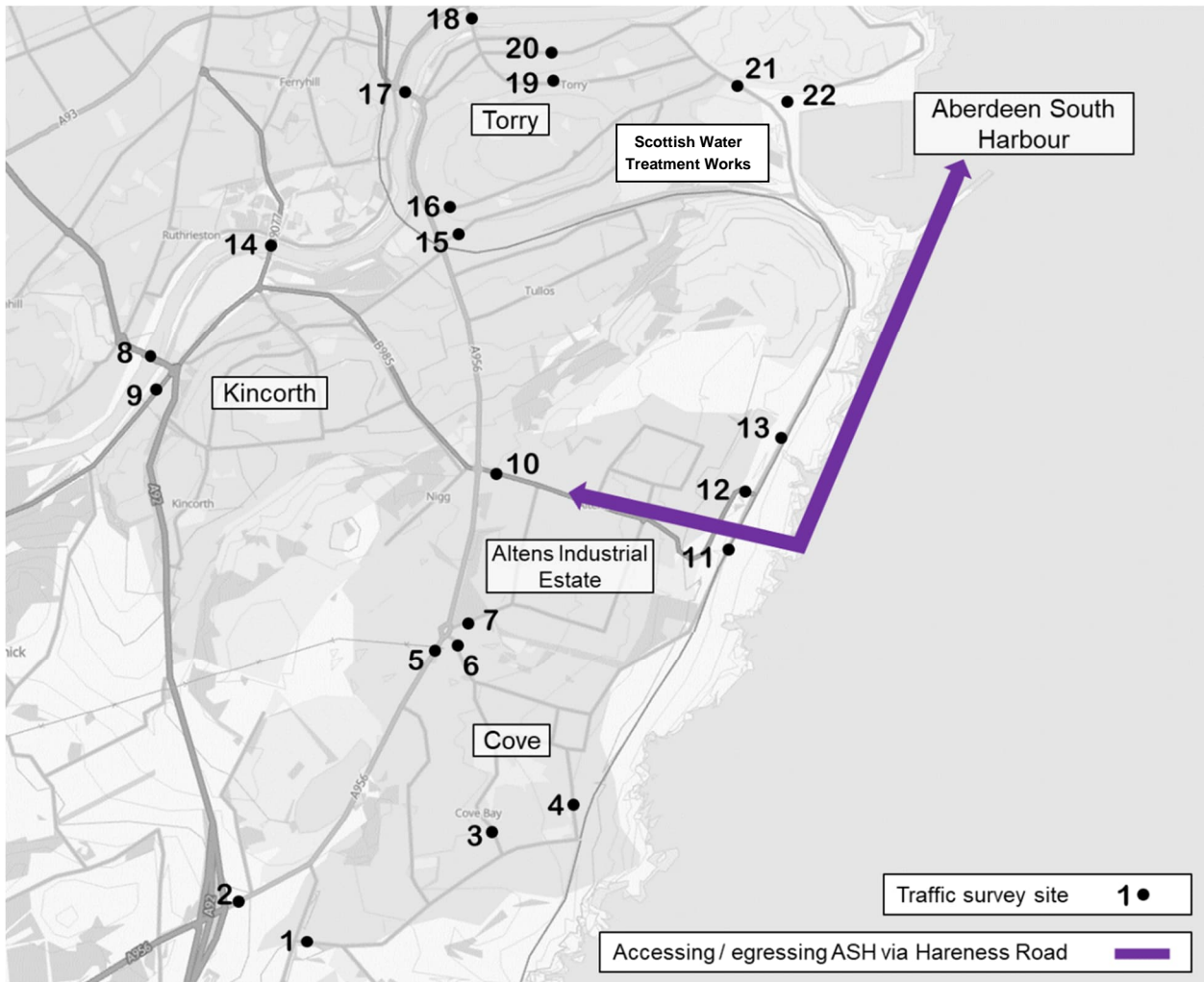
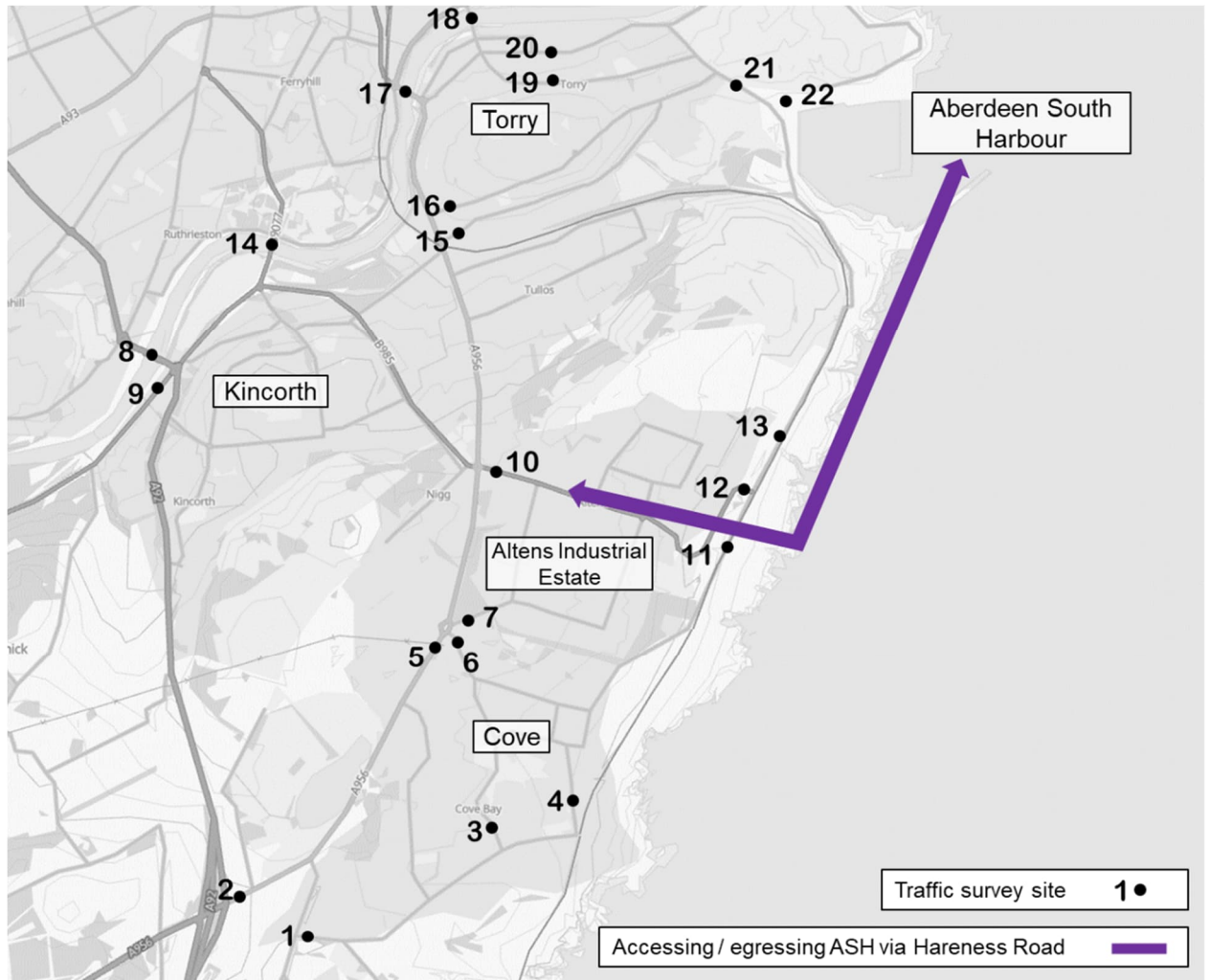


Table 2-5 : Movement 5, accessing / egressing ASH via Hareness Road (3-day average HGV demand (07:00 – 19:00))

Movement 5, accessing / egressing ASH via Hareness Road (3-day average HGV demand (07:00 – 19:00))					
Direction	Origin	Destination	via	HGV Demand	Route %
Eastbound	10	13	12	39	100%
Westbound	13	10	12	44	100%

2.2.13. As shown in

2.2.14. **Figure 2-8: Movement 5, accessing / egressing ASH via Hareness Road**



2.2.15.

2.2.16. **Table 2-5** there were an average of 83 HGV trips accessing / egressing ASH via Hareness Road.



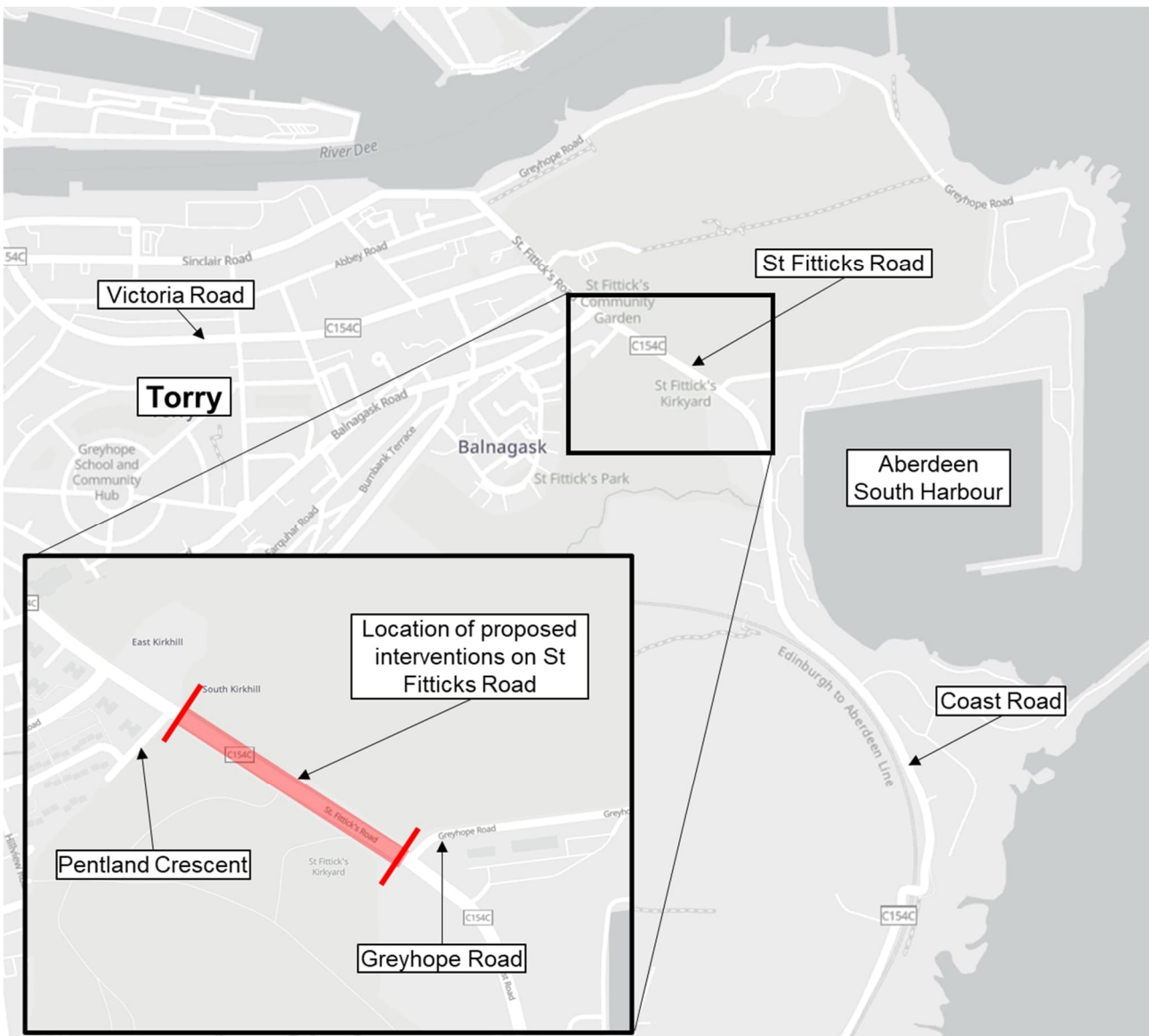
## 2.3. Recommended Approach

- 2.3.1. The survey results show a greater number of HGV movements north of ASH routed via Torry; an average of 52 trips per day accessing / egressing ASH and the Scottish Water Treatment Works, with an average of 43 using Coast Road as a through route via Torry being recorded.
- 2.3.2. The majority of HGVs accessing / egressing ASH route via Hareness Road (average of 83 trips per day).
- 2.3.3. There are fewer HGV movements routed via Cove; an average of 10 HGVs were recorded per day accessing / egressing ASH and the Scottish Water Treatment Works and an average of seven were recorded using Coast Road as a through route via Cove.
- 2.3.4. On this basis, it is suggested the proposed permanent traffic management interventions focus on the control of HGV movements to the north of ASH via Torry.

### 3. Potential Interventions

3.1.1. Two main interventions are suggested to restrict/prohibit the movement of HGVs north of ASH: width restrictions or weight restrictions. Both options propose to restrict movement on St Fitticks Road north of ASH therefore stopping movement of HGVs to / from ASH via Torry. **Figure 3-1** shows the location of the proposed interventions between Greyhope Road and Pentland Crescent.

Figure 3-1 : Location of proposed HGV restriction



3.1.2. Providing prohibition over this extent will still afford access to residential properties in Balnagask should they require any delivery by HGV, but would prevent HGV through-running to ASH and onwards using Coast Road as a through route.

## 3.2. Width Restrictions

3.2.1. Width restrictions could be enforced using a combination of physical measures and regulatory signage. Physical barriers, such as traffic islands, could be installed to prevent movement of wider vehicles, however this would remove flexibility on the network in case of roadworks or incidents, and physically limit the passage of some wider vehicles which may be considered desirable at times, such as winter maintenance vehicles, and larger emergency response vehicles.

3.2.2. Width restrictions would require installation of mandatory width restriction road signage (Diagram 692A as shown on **Figure 3-2**).

Figure 3-2 : Mandatory width restriction Diagram 692A



## 3.3. Weight Restrictions

3.3.1. Weight restrictions would be enforced by mandatory weight restriction signage (Diagram 622.1A as shown on **Figure 3-3**).

Figure 3-3 : Mandatory weight restriction, Diagram 622.1A



3.3.2. Weight restrictions can be more problematic to enforce as the weight of a vehicle suspected of being prohibited would need to be determined or confirmed. This would require the appropriate apparatus to weigh vehicles, for example, a weigh bridge.

### 3.4. Other Considerations

3.4.1. ASH is subject to increased use by cruise ships which are likely to generate significant traffic in terms of shuttle / coach services for cruise ship passengers and staff. Should shuttle buses be prohibited from travelling through Torry, journeys to / from the city centre of Aberdeen for onward travel would increase from 2.3 miles to 4.9 miles, more than doubling the length of the journey.

3.4.2. Consideration may be needed to determine how an exemption for shuttle buses may be incorporated into a Traffic Regulation Order (TRO) for any restrictions placed on a route. This could be provided by a variation in a width restriction TRO and associated supplementary signage.

Figure 3-4 : Example of variation in width restriction TRO for buses



## 4. Recommendations

4.1.1. A width restriction is proposed to restrict the movement of HGVs north of ASH. A variation in the width restriction TRO is suggested to permit passage of shuttle buses serving cruise ships docked at ASH.

4.1.2. Restrictions are suggested to be placed on St Fitticks Road between Greyhope Road and Pentland Crescent.

4.1.3. It must be noted that any enforcement associated with width restrictions must be undertaken by Police Scotland. Enforcement and would involve regular compliance checks by police officers to verify compliance.

### 4.2. Potential Impact of measures on road network

4.2.1. An exercise has been undertaken to determine the potential rerouting seen on the road network following the implementation of the proposed intervention on St Fitticks Road.

4.2.2. Table 4-1 indicates that for HGVs travelling northbound, traffic will likely reroute from the Coast Road to the signposted route via A956 Wellington Road and Hareness Road. Trips originating from Hareness Road travelling to ASH, would not be subject to rerouting.

4.2.3. Likewise, southbound trips would likely utilise the signposted route via A956 Wellington Road and Hareness Road.

Table 4-1 : Potential Rerouting on Road Network

Direction	Origin	Reroute via	Number	% <sup>1</sup>
Northbound	Hareness Road	No rerouting	51	86%
	Cove	Wellington Road / Hareness Road	6	10%
	A92	Wellington Road / Hareness Road	2	3%
Southbound	Victoria Bridge / Road	Wellington Road / Hareness Road	63	93%
	A956 Dee Crossing	Wellington Road / Hareness Road	4	6%
	Sinclair Road	Wellington Road / Hareness Road	1	1%

<sup>1</sup> Any discrepancy in total percentage due to rounding

### 4.3. Impact on wider Aberdeen South Harbour Link Road Project

4.3.1. The ASH Link Road Project has six Transport Planning Objectives (TPOs). Two of these TPOs can be directly related to the traffic management proposals. These TPOs are:

- **TPO1b:** Reduce HGV traffic and associated environmental and nuisance impacts on the residential streets of Victoria Road (Torry) and Langdykes Road (Cove) by reducing HGV traffic routing through Torry via St Fitticks Road and Cove via Coast Road by 10% across all time periods (AM, IP, PM) in the first year post opening.
- **TPO3:** Reduce the number of notifiable abnormal load movements routing through Torry via St Fitticks Road and Cove via Coast Road to zero across all time periods (AM, IP, PM) in the first year post opening.

4.3.2. The expected rerouting of HGV traffic as a result of the recommended traffic management interventions, as outlined in Table 4-1, indicate that the proposals will help contribute to the achievement of the two TPOs.

## Appendix A. ANPR Site Locations

Table A : Location of ANPR survey sites

Site ID	Location	X (Eastings)	Y (Northings)
1	Cove Road	393728	800306
2	Wellington Road	393376	800524
3	Earn's Heugh Road	394826	800829
4	Loirston Road	395253	801007
5	Wellington Road	394483	801932
6	Langdykes Road	394593	801963
7	Souter Head Road	394626	802062
8	Bridge of Dee, A92	392906	803553
9	Leggart Terrace	392949	803417
10	Hareness Road	394797	802923
11	Coast Road	396106	802507
12	Hareness Road	396216	802815
13	Coast Road	396473	803190
14	King George VI Bridge, Great Southern Road	393565	804176
15	Girdleness Road	394557	804222
16	Balnagask Road	394496	804371
17	Queen Elizabeth II Bridge, Wellington Road	394328	805037
18	Victoria Bridge, Victoria Road	394676	805455
19	Victoria Road	395114	805085
20	Sinclair Road	395127	805269
21	St. Fittick's Road	396225	805049
22	Greyhope Road	396411	804999