Appendix B

Air Quality Assessment

The following tables present the results of the Air Quality assessment of online dualling at Inverurie for all end-to-end route combinations, as different route option connections give rise to different levels of traffic. Results are shown for online dualling at Inverurie linking to the portion of the Orange route option from Drimmies to Pitcaple with further connections onto each of the Brown or Pink and Cyan or Red route options, giving four end-to-end combinations in total.

Traffic modelling was used to predict flows on the existing A96 at Inverurie without any dualling online or offline (referred to as DM in the tables below - Do-Minimum) and for online dualling at Inverurie (referred to as DS in the tables below – Do-Something).

The change from no A96 dualling (DM) to each end-to-end dualling combination incorporating online dualling at Inverurie was calculated to determine an assessment of the impact. Given traffic flows change at Blackhall Road as vehicles enter or leave the A96, results are provided for the road sections each side of Blackhall Road – Drimmies to Blackhall Road and Blackhall Road to Port Elphinstone.

Results are provided for the D2APc (GSJ) and D2APb (At-Grade) layouts for predicted traffic flows in 2030 (the assumed year of opening) and 2045 (15 years after opening). There is no significant difference in traffic flows for the D2UAP (GSJ) and D2UAP (At-Grade) carriageway cross-section.

Table B1 – Comparative Air Quality Study of D2APc (GSJ) Layout (2030)

Receptors within	2030					
Receptors at 25m (zero due to demolition)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**
	Drimmies to Blackhall	2030 Cyan Brown OLI	17.3	20.9	3.6	N/A*
		2030 Cyan Pink OLI	17.3	20.9	3.6	N/A*
		2030 Red Brown OLI	17.3	20.9	3.6	N/A*
		2030 Red Pink OLI	17.3	20.9	3.6	N/A*
	Blackhall to Port Elphinstone	2030 Cyan Brown OLI	18.4	22.5	4.1	N/A*
		2030 Cyan Pink OLI	18.4	22.5	4.1	N/A*
		2030 Red Brown OLI	18.4	22.5	4.1	N/A*
		2030 Red Pink OLI	18.4	22.5	4.2	N/A*
Receptors at 50m (110 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**
	Drimmies to Blackhall	2030 Cyan Brown OLI	12.0	14.0	2.0	Minor
		2030 Cyan Pink OLI	12.0	14.0	2.0	Minor
		2030 Red Brown OLI	12.0	14.0	2.0	Minor
		2030 Red Pink OLI	12.0	14.0	2.0	Minor
	Blackhall to Port Elphinstone	2030 Cyan Brown OLI	12.6	14.9	2.3	Moderate
		2030 Cyan Pink OLI	12.6	14.9	2.3	Moderate
		2030 Red Brown OLI	12.6	14.9	2.3	Moderate
		2030 Red Pink OLI	12.6	14.9	2.4	Moderate
Receptors at 75m (174 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**
	Drimmies to Blackhall	2030 Cyan Brown OLI	9.2	10.4	1.1	Minor
		2030 Cyan Pink OLI	9.2	10.4	1.1	Minor
		2030 Red Brown OLI	9.2	10.4	1.1	Minor
		2030 Red Pink OLI	9.2	10.4	1.2	Minor
	Blackhall to Port Elphinstone	2030 Cyan Brown OLI	9.5	10.9	1.3	Minor
		2030 Cyan Pink OLI	9.5	10.9	1.3	Minor
		2030 Red Brown OLI	9.5	10.9	1.3	Minor
		2030 Red Pink OLI	9.5	10.9	1.3	Minor

Notes

N/A*	Impact would be major adverse but no receptors in buffer distance following property demolition
N/A*	Impact would be moderate adverse but no receptors in buffer distance following property demolition

Table B2 – Comparative Air Quality Study of D2APc (GSJ) Layout (2045)

Receptors within	2045					
Receptors at 25m (zero due to demolition)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**
	Drimmies to Blackhall	2045 Cyan Brown OLI	16.6	21.9	5.3	N/A*
		2045 Cyan Pink OLI	16.6	21.9	5.3	N/A*
		2045 Red Brown OLI	16.6	21.9	5.3	N/A*
		2045 Red Pink OLI	16.6	22.0	5.4	N/A*
	Blackhall to Port Elphinstone	2045 Cyan Brown OLI	18.4	23.5	5.1	N/A*
		2045 Cyan Pink OLI	18.4	23.6	5.2	N/A*
		2045 Red Brown OLI	18.4	23.5	5.2	N/A*
		2045 Red Pink OLI	18.4	23.6	5.2	N/A*
Receptors at 50m (110 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**
	Drimmies to Blackhall	2045 Cyan Brown OLI	11.6	14.6	3.0	Moderate
		2045 Cyan Pink OLI	11.6	14.6	3.0	Moderate
		2045 Red Brown OLI	11.6	14.6	3.0	Moderate
		2045 Red Pink OLI	11.6	14.6	3.0	Moderate
	Blackhall to Port Elphinstone	2045 Cyan Brown OLI	12.6	15.5	2.9	Moderate
		2045 Cyan Pink OLI	12.6	15.5	2.9	Moderate
		2045 Red Brown OLI	12.6	15.5	2.9	Moderate
		2045 Red Pink OLI	12.6	15.6	3.0	Moderate
Receptors at 75m (174 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**
	Drimmies to Blackhall	2045 Cyan Brown OLI	9.0	10.7	1.7	Minor
		2045 Cyan Pink OLI	9.0	10.7	1.7	Minor
		2045 Red Brown OLI	9.0	10.7	1.7	Minor
		2045 Red Pink OLI	9.0	10.7	1.7	Minor
	Blackhall to Port Elphinstone	2045 Cyan Brown OLI	9.6	11.2	1.7	Minor
		2045 Cyan Pink OLI	9.6	11.2	1.7	Minor
		2045 Red Brown OLI	9.6	11.2	1.7	Minor
		2045 Red Pink OLI	9.6	11.2	1.7	Minor

Notes

N/A* Impact would be major adverse but no receptors in buffer distance following property demolition

Table B3 – Comparative Air Quality Study of D2APb (At-Grade) Layout (2030)

Receptors within	2030					
Receptors at 25m (6 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**
	Drimmies to Blackhall	2030 Cyan Brown OLI	17.3	19.8	2.5	Moderate
		2030 Cyan Pink OLI	17.3	19.9	2.6	Moderate
		2030 Red Brown OLI	17.3	19.9	2.6	Moderate
		2030 Red Pink OLI	17.3	19.9	2.6	Moderate
	Blackhall to Port Elphinstone	2030 Cyan Brown OLI	18.4	19.6	1.3	Minor
		2030 Cyan Pink OLI	18.4	19.7	1.3	Minor
		2030 Red Brown OLI	18.4	19.6	1.3	Minor
		2030 Red Pink OLI	18.4	19.7	1.3	Minor
Receptors at 50m (135 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**
	Drimmies to Blackhall	2030 Cyan Brown OLI	12.0	13.4	1.4	Minor
		2030 Cyan Pink OLI	12.0	13.4	1.4	Minor
		2030 Red Brown OLI	12.0	13.4	1.4	Minor
		2030 Red Pink OLI	12.0	13.4	1.5	Minor
	Blackhall to Port Elphinstone	2030 Cyan Brown OLI	12.6	13.3	0.7	Minor
		2030 Cyan Pink OLI	12.6	13.3	0.7	Minor
		2030 Red Brown OLI	12.6	13.3	0.7	Minor
		2030 Red Pink OLI	12.6	13.3	0.7	Minor
Receptors at 50m (174 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**
	Drimmies to Blackhall	2030 Cyan Brown OLI	9.2	10.0	0.8	Minor
		2030 Cyan Pink OLI	9.2	10.0	0.8	Minor
		2030 Red Brown OLI	9.2	10.0	0.8	Minor
		2030 Red Pink OLI	9.2	10.0	0.8	Minor
	Blackhall to Port Elphinstone	2030 Cyan Brown OLI	9.5	9.9	0.4	Minor
		2030 Cyan Pink OLI	9.5	10.0	0.4	Minor
		2030 Red Brown OLI	9.5	9.9	0.4	Minor
		2030 Red Pink OLI	9.5	10.0	0.4	Minor

Table B4 – Comparative Air Quality Study of D2APb (At-Grade) Layout (2045)

Receptors within	2045						
Receptors at 25m (6 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**	
	Drimmies to Blackhall	2030 Cyan Brown OLI	17.3	20.7	3.5	Moderate	
		2030 Cyan Pink OLI	17.3	20.8	3.5	Moderate	
		2030 Red Brown OLI	17.3	20.7	3.4	Moderate	
		2030 Red Pink OLI	17.3	22.5	5.2	Major	
	Blackhall to Port Elphinstone	2045 Cyan Brown OLI	18.9	21.4	2.5	Moderate	
		2045 Cyan Pink OLI	18.9	22.3	3.4	Moderate	
		2045 Red Brown OLI	18.9	21.3	2.4	Moderate	
		2045 Red Pink OLI	18.9	22.3	3.5	Moderate	
Receptors at 50m (135 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**	
	Drimmies to Blackhall	2030 Cyan Brown OLI	12.0	13.9	2.0	Minor	
		2030 Cyan Pink OLI	12.0	13.9	2.0	Minor	
		2030 Red Brown OLI	12.0	13.9	1.9	Minor	
		2030 Red Pink OLI	12.0	14.9	2.9	Minor	
	Blackhall to Port Elphinstone	2045 Cyan Brown OLI	12.9	14.3	1.4	Minor	
		2045 Cyan Pink OLI	12.9	14.8	1.9	Minor	
		2045 Red Brown OLI	12.9	14.2	1.4	Minor	
		2045 Red Pink OLI	12.9	14.8	2.0	Minor	
Receptors at 50m (174 receptors)	**Road Assessed**	**Scenario Assessed**	**DM**	**DS**	**Change DS-DM**	**DMRB Magnitude of Effect**	
	Drimmies to Blackhall	2030 Cyan Brown OLI	9.2	10.3	1.1	Minor	
		2030 Cyan Pink OLI	9.2	10.3	1.1	Minor	
		2030 Red Brown OLI	9.2	10.3	1.1	Minor	
		2030 Red Pink OLI	9.2	10.9	1.7	Minor	
	Blackhall to Port Elphinstone	2045 Cyan Brown OLI	9.7	10.5	0.8	Minor	
		2045 Cyan Pink OLI	9.7	10.8	1.1	Minor	
		2045 Red Brown OLI	9.7	10.5	0.8	Minor	
		2045 Red Pink OLI	9.7	10.8	1.1	Minor	