

TPATCHAD/69840

**A APPENDIX A**



## Option Generation, Sifting &amp; Development

Table A.1 : A90/A96 Haudagain Roundabout STAG Part 1 Appraisal Option Sifting Process

Potential Options		Objectives					Implementability				Explanatory Comment on Objectives and Implementability Scoring
No.	Measures	i. Reduce Congestion	ii. Minimise Accidents	iii. Social Inclusion	iv. Minimise Severance	v. Regeneration	Technical Issues	Operational Issues	Financial Issues	Public Issues	
0	Do-Minimum	xx	xx	xxx	xx	xxx	-	-	-	xxx	Increasing delay with negative affect on other objectives.
1	Option 1 – Signalise existing roundabout	xxx	✓	xx	✓	xx	-	-	x	xx	Significantly increased delay, but positive for safety and walk times. Negative for buses and Middlefield.
2	Option 2 – Existing Roundabout with signals on approaches	xxx	✓	xx	✓	xx	-	-	x	xx	Significantly increased delay, but positive for safety and walk times. Negative for buses and Middlefield.
3	Option 3 – Roundabout replaced with signalised junction	xxx	✓	xx	✓	xx	-	-	x	xx	Significantly increased delay, but positive for safety and walk times. Negative for buses and Middlefield.
4	Option 4 – Signal junction with north and south left slip	xx	✓	✓	✓	xx	-	-	xx	✓	Increased delay, but positive for safety and walk times and buses. Negative for Middlefield.
5	Option 5 – Existing layout with new dual carriageway link	✓✓	✓	✓✓	✓	✓✓	-	-	xx	✓✓	Reduced delay, positive for safety, walk times, buses and Middlefield.
5A	Option 5a – Existing layout with single carriageway link road	✓✓	✓	✓✓	✓	✓✓	-	-	xx	✓✓	Reduced delay, positive for safety, walk times, buses and Middlefield.
6	Option 6 – Gyratory (weaving)	xxx	xx	xxx	✓	✓	x	-	xx	xx	Significantly increased delay. Negative for safety and buses. Potentially Positive for walk times and Middlefield.
7	Option 7 – Existing Roundabout with flyover/left slip	✓	✓	-	-	xxx	x	-	xxx	✓✓	Some reduced congestion hence positive for safety. Negative on buses in PM. Negative landtake & visual impact on Middlefield.
8	Option 8 – Signalised Interchange with east-west underpass	xx	✓	xx	✓	x	xxx	-	xxx	✓	Increased delay in PM. Positive for safety and walk times. Negative for buses and Middlefield. Technical difficulties.

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No.	Measures	i. Reduce Congestion	ii. Minimise Accidents	iii. Social Inclusion	iv. Minimise Severance	v. Regeneration	Technical Issues	Operational Issues	Financial Issues	Public Issues	
9	Option 9 – Gyratory (signals and new bridge)	✓✓✓	–	✓	✓	✓	xx	–	xxx	✓	Significantly reduced delay, neutral for safety due to complexity. Walk times, buses and Middlefield benefit.
10	Option 10 – Signalised interchange with Flyover/left slip	✓✓✓	✓	✓	✓	xxx	xx	–	xxx	✓✓	Significantly reduced delay. Neutral for safety due to complexity. Walk times, buses benefit. Negative on Middlefield land take & intrusive. Technical & financially onerous.
11	Option 11 – Signalised interchange with Dual Link Road	✓✓✓	✓	✓✓✓	✓	✓✓✓	x	–	xx	✓✓✓	Significantly reduced delay and improved for safety. Walk times, buses and Middlefield benefit.
12	New flyover bridge for north to south	✓	–	x	–	xx	xxx	–	xxx	xx	May have some congestion reduction benefits. Negative or no impact on other objectives. Level differences would also make this option impossible to implement.
13	Bigger Roundabout	✓	–	xx	xxx	xxx	–	–	xx	x	May have some congestion reduction benefits. Negative impact on other objectives [Note. subsequently accepted for option development with necessary addition of alterations to Mugiemoss Road]
14	Double Roundabout	x	xx	xx	xx	xx	–	–	xx	xxx	Negative impact on all objectives.
15	Ring road around roundabout	✓	xx	x	xx	xxx	–	–	xxx	x	May have some congestion reduction benefits. Major negative impact on other objectives and impossible to implement within land constraints.
16	Clearly mark lanes approaching the roundabout on North Anderson Drive to speed up traffic	–	–	–	–	–	–	–	–	–	Neutral/No impact expected on all counts.

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17	Clover Leaf junction	✓✓✓	–	xx	xxx	xxx	xxx	–	xxx	xxx	May have congestion reduction benefits. Major negative impact on other objectives and impossible to implement within land constraints or massively expensive with additional bridges to overcome land constraints.
18	Left turn filter, North Anderson Drive to Auchmill Road	✓	–	–	–	–	–	–	x	x	May have some congestion reduction benefits. No impact on other objectives.
19	Re mark the lanes on Auchmill Road. To only allow a single lane to access the great north road east bound	✓	–	–	–	–	–	–	–	–	May be some minor benefit. Neutral/No impact on all other counts.
20	New railway station and suburban network – Crossrail	✓	–	✓✓	–	✓	xxx	xxx	xxx	✓✓	May have some congestion reduction benefits by encouraging modal shift. No impact on other objectives. Operationally and financially difficult to implement.
21	A grade seperated junction with dualling on the Parkway/Persley Bridge/Mugiemoss Road/railway bridge is key.	✓✓✓	xx	x	xxx	xxx	xx	–	xxx	xxx	May have congestion reduction benefits. Major negative impact on other objectives and impossible to implement within land constraints or massively expensive with additional bridges to overcome physical barriers to the north.
22	Widen North Anderson Drive northbound to 3 lanes earlier	–	x	–	x	x	–	–	x	x	No impact on congestion and some negative impact.
23	Purchase former garage and derelict house to give space to improve junction. Upgrade A90 Persley to dual carriageway.	✓	x	–	x	–	xx	–	xxx	xx	May have some congestion reduction benefits. Negative impact on other objectives and financially onerous.
24	Combine 7 & 8 and new Don Bridge	✓	x	x	x	x	x	–	xxx	x	May have some congestion reduction benefits. Negative impact on other objectives and financially onerous.

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No.	Measures	i. Reduce Congestion	ii. Minimise Accidents	iii. Social Inclusion	iv. Minimise Severance	v. Regeneration	Technical Issues	Operational Issues	Financial Issues	Public Issues	
25	South to West & North to East slip roads plus east-west/west-east flyovers	✓	x	✓	x	xxx	xx	–	xxx	x	May have some congestion reduction benefits. Negative impact on other objectives and financially onerous.
26	West to East underpass. North to south flyover.	✓✓	–	✓	xx	xx	xxx	–	xxx	x	May have some congestion reduction benefits. Negative or no impact on other objectives. Level differences would also make this option difficult to implement.
27	Underpass north to south. Option 4 (N/s slips) without traffic lights.	✓	x	–	x	x	xxx	–	xxx	x	May have some congestion reduction benefits. Negative or no impact on other objectives. Physical barriers to north would also make this option impossible to implement.
28	Traffic reduction demand management measures such as road tolling.	✓	✓	✓	✓	✓	xx	xx	✓	xxx	May have some congestion reduction benefits by encouraging mode change and travel at off peak times and so meets all other objectives. Operational difficulties and lack of public support.
29	Skyway/flyover on the A90 starting at Stewart Park/provost Drive and north over the Grove Cemetry and connect to the Parkway beyond the Tesco Roundabout. Howes Road follows Bucks Burn and could be upgraded to dual carriageway.	✓✓✓	x	–	xx	xxx	xxx	–	xxx	xxx	Would have some congestion reduction benefits but limited buses travel north to south. Negative impact on other objectives and financially onerous.
30	Underpasses on the 5 radial routes into Aberdeen at Anderson Drive would solve the problem at Haudagain.	✓✓	–	✓	x	–	xxx	–	xxx	xxx	May have some congestion reduction benefits and so buses but Negative/no impact on other objectives, technically difficult and financially onerous.
31	Option 11 with additional underpasses east-west.	✓✓✓	✓	✓✓✓	✓	✓✓✓	xxx	–	xxx	x	Significantly reduced delay and improved for safety. Walk times, buses and Middlefield benefit. But technically difficult and financially onerous to implement.

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No.	Measures	i. Reduce Congestion	ii. Minimise Accidents	iii. Social Inclusion	iv. Minimise Severance	v. Regeneration	Technical Issues	Operational Issues	Financial Issues	Public Issues	
32	Two lanes each way of unimpeded traffic flow on the principle routes (West/South, North/South, East/West). Widen A90 (north) & on westbound GNR reopen two lanes by an additional bus lane or by converting the existing bus lane to an HOV or 2+ lane . Segregate pedestrians and cyclists.	✓✓✓	x	✓	xxx	xxx	xx	x	xxx	xx	Significantly reduced delay for all traffic. Negative impact on community severance walk times and Middlefield. Technically difficult and financially onerous to implement.
33	A continuous bus lane up to junction	✓	–	✓	–	–	–	–	–	✓	Reduced delay for buses making them more attractive.
34	Bus lane metering with lights	✓	–	✓	✓	–	x	–	x	✓	Reduced delay for buses making them more attractive.
35	Reduction of traffic by measures such as better walking and cycling provision.	✓	✓	✓✓✓	✓	✓	–	–	x	✓	May have some congestion reduction benefits by encouraging mode change and so meets all other objectives.
36	A combination of option 7 & 10. (Dual Mugiemoss & Left slip at existing roundabout)	✓	✓	✓	✓	xxx	xx	–	xxx	✓	May reduced delay. Safety, Walk times, buses not improved. Negative on Middlefield land take & intrusive. Technically difficult and financially onerous to implement.
37	Option 8 with inclusion of uncontrolled r/bout and dualling of Mugiemoss Road.	x	x	x	xx	xx	xxx	–	xxx	xx	Increased delay in PM. Negative for safety, walk times, buses and Middlefield. Technical difficulties for construction.
38	Restrict the volume of traffic using Mugiemoss Road by remarking Anderson Drive entry to allow only one lane forward into Mugiemoss Road and possibly may also be helped by yellow boxes at the roundabout.	✓	–	–	–	–	–	–	–	–	May be some minor benefit. Neutral/No impact on all other counts.

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39	A shared use off road facility for cyclists. A cycle/pedestrian bridge across the north side of the roundabout (over Mugiemoos Road) could give a continuous facility and improve safety.	–	✓✓	✓✓	✓	–	x	–	x	✓	Positive for cycle safety and encouragement but may be technical construction difficulties and cost implications.

**Key to table:**

- i. To reduce congestion and unreliability by improving and sustaining base year 2004 journey times for commercial and public transport traffic until 2021.
- ii. Measures must minimise the risk of transport related accidents especially for vulnerable users in the vicinity of the junction to improve on 2001–2004 casualty levels.
- iii. To make socially–inclusive and healthy transport modes more attractive to use, including cycling, walking and public transport measures to be promoted in all measures.
- iv. To minimise traffic induced severance on communities by ensuring measures do not have a significant detrimental impact on 2004 walk time accessibility.
- v. To contribute to the City Council's regeneration aims by complimenting the development of Logie/Manor area of Middlefield.

**Shading** Denotes Option accepted for STAG Part1 appraisal option development

- ✓✓✓ Major benefit
- ✓✓ Moderate benefit
- ✓ Minor benefit
- No benefit or impact
- x Small minor cost or negative impact
- xx Moderate cost or negative impact
- xxx Major cost or negative impacts