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A96 Dualling

East of Huntly to Aberdeen scheme

Cyan/Red to Pink Pairing Assessments

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A96 Dualling East of Huntly to Aberdeen

Cyan/Red to Pink Pairing Assessments

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Contents

	Page
1	Pairing assessment 1
1.1	Introduction 1
1.2	Identification of route options for pairing 1
2	Pairing assessment basis 4
3	Pairing assessment Cyan to Pink 1 vs Cyan to Pink 2 route options 5
3.1	Cyan to Pink 1 route option description 5
3.2	Cyan to Pink 2 route option description 6
3.3	Cyan to Pink 1 vs Cyan to Pink 2 pairing assessment conclusion 6
4	Pairing assessment Red to Pink 1 vs Red to Pink 2 route options 8
4.1	Red to Pink 1 route option description 8
4.2	Red to Pink 2 route option description 8
4.3	Red to Pink 1 vs Red to Pink 2 pairing assessment conclusion 9
5	Overall pairing assessment conclusions 10

Figures

Figure 1 – Location of route options for pairing assessment

Figure 2 - Route option and Junction Identifier

Appendices

Appendix A

Pairing assessments

Appendix B

Engineering plans

Appendix C

Environmental plans

1 Pairing assessment

1.1 Introduction

This document provides details of the assessments undertaken on the A96 Dualling East of Huntly to Aberdeen scheme where two route options have common start and end points and perform the same function. The assessment is used to deselect poorer performing route options, allowing development of the remaining options to progress through to full DMRB Stage 2 assessment, which will ultimately identify the preferred route option for the scheme.

1.2 Identification of route options for pairing

The location of the route options identified for pairing assessments is shown on Figure 1 covering the area around Colpy. The routes in this area avoid the High Impact Area of Williamston Garden Design Landscape, passing to the north and south. As the Pink route option links to both the Cyan and Red route options, two separate scenarios of pairing assessments were undertaken to identify any potential differences in the assessments:

- Cyan to Pink - from the Cyan C1 route option at the Hill of Skares, there are two ways to link to the Pink route option south east of Colpy at Lawrence Road. These two ways are via sections Pink 1 (C2/P1) or Pink 2 (C1/Br1/P2) (refer to Figure 2).
- Red to Pink - from the Red R1/R2 route option to the north west of Colpy at Jericho, there are two ways to link to the Pink route option south east of Colpy at Lawrence Road. These two ways are via sections Pink 1 (R1/P1) and Pink 2 (R2/Br1/P2) (refer to Figure 2).

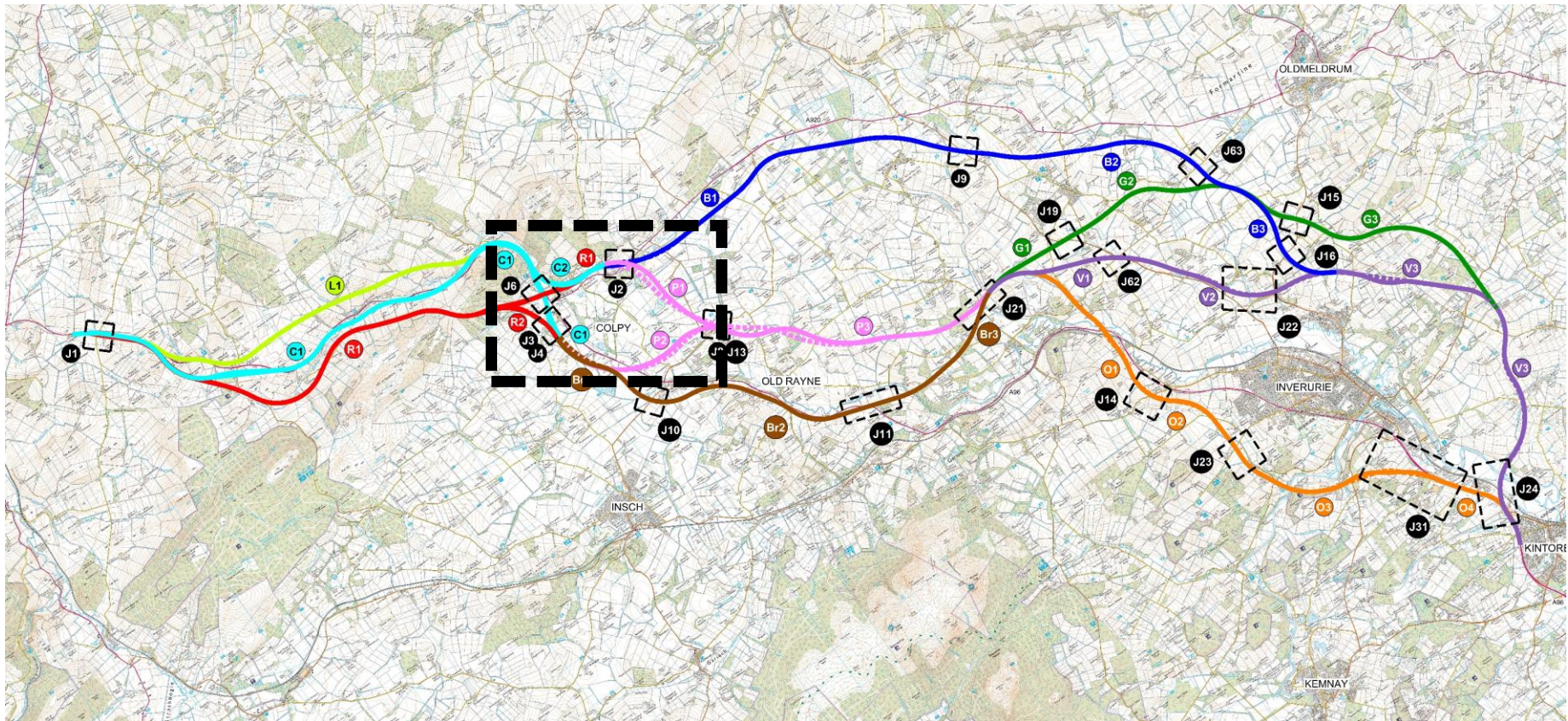


Figure 1 – Location of route options for pairing assessment

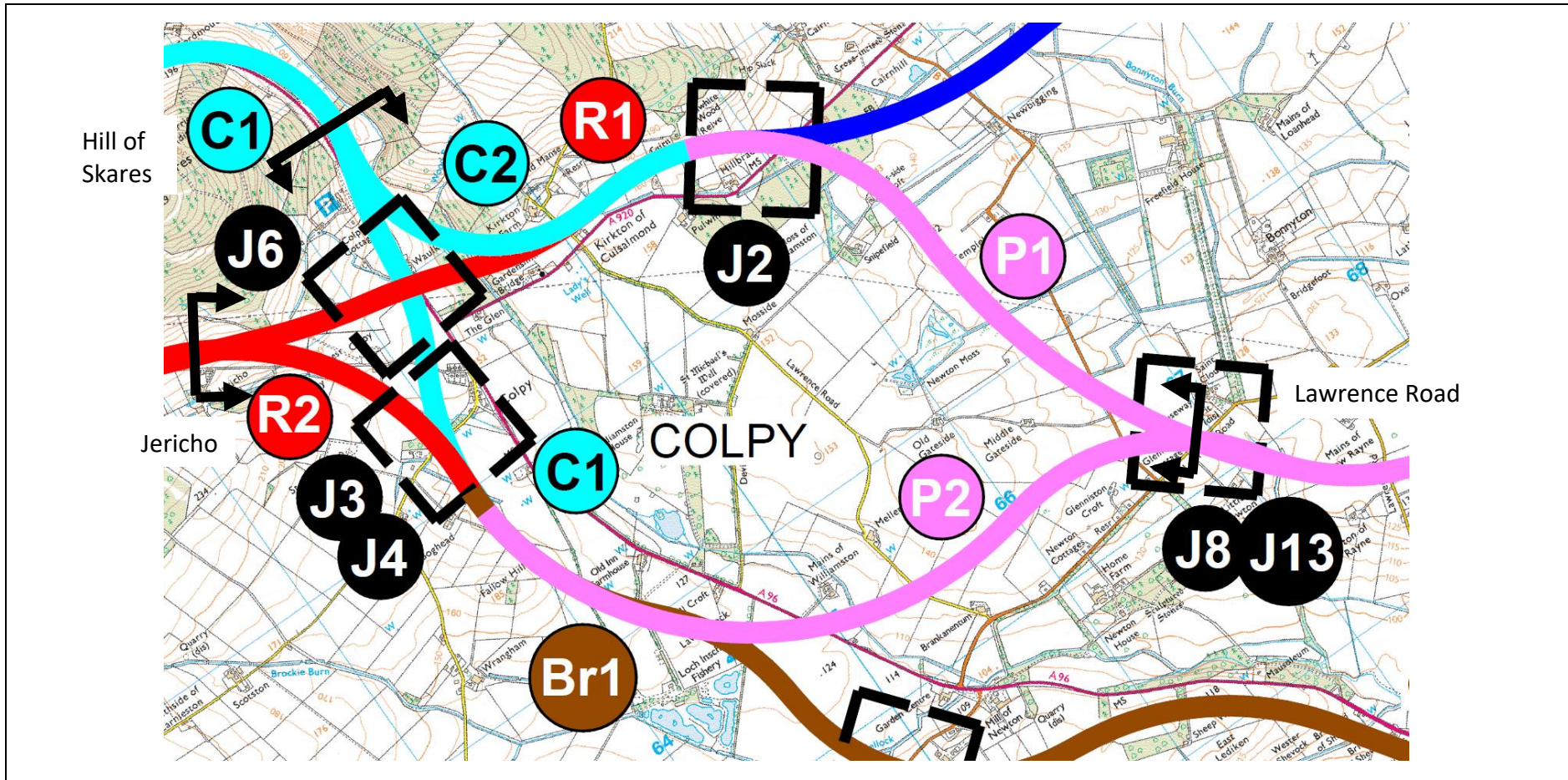


Figure 2 - Route option and Junction Identifier

2 Pairing assessment basis

The Engineering, Environmental and Traffic/Economic appraisals and key differences have been drawn together into a multi-disciplinary assessment, to determine the better performing route option to be taken forward from each pairing assessment. These appraisals can be found in Appendix A. The engineering and environmental plans associated with the pairings are included in Appendix B and C respectively.

The appraisals are based on the developed third fix alignments, which incorporates the following development:

- Indicative junction layouts in accordance with the Junction Strategy where applicable.
- Application of central reserve and verge widening for visibility.
- Statutory authority consultation.
- Addressing where possible impacts identified during the Second Fix assessment.

The appraisals adopted the 7-point assessment scale consistent with that utilised in the second fix alignments appraisal. The purpose of the pairing assessment was to establish the key comparative differences between the respective route options, and as such the pairing assessments included in Appendix A concentrated on the differences in the Major and Moderate Adverse Impacts to establish the better performing route option

The following colour coding has been used to indicate preferences for each paired element:

	Better Performing
	No preference

3 Pairing assessment Cyan to Pink 1 vs Cyan to Pink 2 route options

This assessment considers the following route options:

- Cyan to Pink 1 route option – sections C2 and P1
- Cyan to Pink 2 route option – sections C1, Br1 and P2.

3.1 Cyan to Pink 1 route option description

A96 Dual Carriageway

The route option shown in Figure 2 above, runs in a southerly direction from the Hill of Skares crossing the River Urie on a new structure before running east towards Kirkton of Culsalmond via C2. It continues parallel to the A920 and then turns south crossing over the existing A920 onto P1 at Snipefield. The route option continues south to the tie-in point of P1 with P3 at Lawrence Road. The route option length is 5.6km.

The mainline alignment crosses the side road connecting Cadgers Road to the A920 at Kirkton of Culsalmond. Because of the topography and sidelong ground, excessive earthworks would result if the mainline is not maintained close to existing ground levels where it crosses the side road. It is not feasible to lower or raise the existing side road without major impact on adjoining properties. The side road is therefore severed by the proposed alignment and a significant realignment of the side road (over 1km) running parallel to the mainline from Kirkton of Culsalmond to Hillbrae is required to maintain access to existing properties to the north of the dual carriageway.

Colpy Junction (J2)

A grade separated junction in compliance with the Design Manual for Roads and Bridges (DMRB) has been developed on the A920 approximately 1.8km east of Colpy at Snipefield that seeks to minimise impacts on existing properties and land. The junction option is a skewed dumbbell arrangement with all movements allowed. It incorporates the existing A920 through an underbridge and provides connections for new side road links. Access to the existing A96 would be achieved via the A920.

Lawrence Road Junction (J8)

A DMRB compliant, grade-separated junction with east facing slip roads only has been developed on Lawrence Road/B992 that seeks to minimise impacts on existing properties and land. The mainline is on embankment in this location and allows for a perpendicular underbridge to accommodate the re-aligned Lawrence Road. A roundabout is provided on the north side of the mainline to cater for the realigned B992, eastbound on-slip and Lawrence Road north tie in. The westbound off-slip meets the realigned Lawrence Road at a priority junction. Existing accesses are maintained and realigned where required.

3.2 Cyan to Pink 2 route option description

A96 Dual Carriageway

The route option shown in Figure 2 above, runs in a southerly direction from the Hill of Skares to the west of Colpy adjacent to the existing junction with A96 and A920. The route option continues as Br1, running south to Loch Insch Fishery before heading east as P2 to the north of Newton House and the tie-in point with P3 at Lawrence Road. The route option length is 6.4km.

Colpy Junction (J3)

A DMRB compliant, grade-separated loop arrangement has been developed located southwest of Colpy. It is connected to the existing A96 via a link road, approximately 420m long, running west to east passing under the new dual carriageway. The existing junction at the A96/A920 is then maintained for local access to Kirkton of Culsalmond. The new junction caters for all movements on/off the new dual carriageway.

As part of the strategy to maintain local connectivity this solution features approximately 1.2km realignment of the existing A96 parallel and west of the dual carriageway between Morgan McVeighs and the proposed Colpy Junction.

Lawrence Road Junction (J13)

A DMRB compliant, grade-separated junction with east facing slip roads only has been developed on Lawrence Road/B992 that seeks to minimise impacts on existing properties and land. The mainline is on embankment in this location and allows for a perpendicular underbridge to accommodate the re-aligned Lawrence Road. A roundabout is provided on the north side of the mainline to cater for the realigned B992, eastbound on-slip and Lawrence Road north tie in. The westbound off-slip meets the realigned Lawrence Road at a priority junction. Existing accesses are maintained and realigned where required.

3.3 Cyan to Pink 1 vs Cyan to Pink 2 pairing assessment conclusion

The full pairing assessment for Cyan to Pink 1 (C2/P1) against Cyan to Pink 2 (C1/Br1/P2) route options is included in Appendix A1.

The engineering appraisal found that the Cyan to Pink 2 route option performed better across all engineering sub-disciplines than the Cyan to Pink 1 route option, principally due to the major viaduct crossing of the River Urie/floodplain and the greater potential for overhead transmission line diversions on the Pink 1 route option.

The environmental appraisal found that the Cyan to Pink 2 route option performed better than the Cyan to Pink 1 route option as it had fewer overall Major and Moderate Adverse Impacts. The Pink 1 route option has Major Adverse Impacts on the community around Culsalmond and Snipefield, the loss of part of Snipefield Wood, the setting of the Category A Listed Building of Culsalmond Old Parish Church and Mummer's Reive Cairn Scheduled Monument which cannot be mitigated. The Pink 1 route option also has more interactions with watercourses, particularly the River Urie and floodplain and greater impact on ecological receptors.

The traffic and economics appraisal found that the Cyan to Pink 2 route option performed better than the Cyan to Pink 1 route option. The Pink 2 route option is considered to offer greater potential to better connect the settlements of Culsalmond and Colpy through provision of new footpaths and crossing facilities, reduce conflict between motorised and non-motorised users and encourage active travel.

The pairing assessment for the Cyan to Pink 1 against Cyan to Pink 2 route options concluded that the Cyan to Pink 2 route option (C1/Br1/P2) is the better performing route option combination.

4 Pairing assessment Red to Pink 1 vs Red to Pink 2 route options

This assessment considers the following route options:

- Red to Pink 1 route option – sections R1 and P1
- Red to Pink 2 route option – sections R2, Br1 and P2

4.1 Red to Pink 1 route option description

A96 Dual Carriageway

The route option shown in Figure 2 starts from a common point with R1/R2 to the west of Colpy at Jericho and heads east as section R1, crossing the existing A96 to the north of the existing A96/A920 junction. The route option continues towards Kirkton of Culsalmond and runs parallel to the A920 before turning south onto P1 at Snipefield Woods. The route option continues south to the tie-in point of P1 with P3 at Lawrence Road. The route option length is 7.1km.

As with the Cyan C2 to Pink P1 route, a side road diversion of over 1km is required to retain connection between the A920 and Cadgers Road to maintain access for properties to the north of the A920 at Kirkton of Culsalmond.

Colpy Junction (J6)

A DMRB compliant, grade separated loop arrangement has been developed to the north of Colpy that caters for all movements. Westbound on/off slips are linked to a new roundabout located at the existing A96/A920 junction. The eastbound on/off slips are linked to the existing A96 north of Waukmill via a priority junction. The existing A96 maintains the north/south connectivity through the junction and utilises the new structure carrying the mainline over the existing A96. No additional side road links or access realignments are required near the junction.

Lawrence Road Junction (J8)

A DMRB compliant, grade-separated junction with east facing slip roads only has been developed on Lawrence Road/B992 that seeks to minimise impacts on existing properties and land. The mainline is on embankment in this location and allows for a perpendicular underbridge to accommodate the re-aligned Lawrence Road. A roundabout is provided on the north side of the mainline to cater for the realigned B992, eastbound on-slip and Lawrence Road north tie in. The westbound off-slip meets the realigned Lawrence Road at a priority junction. Existing accesses are maintained and realigned where required.

4.2 Red to Pink 2 route option description

A96 Dual Carriageway

From a common point with route option R1 to the west of Colpy at Jericho, route option R2 turns in a southerly direction and passes to the west of Colpy. The route option then continues as Br1, running south to Loch Inch Fishery before heading east as P2 to the north of Newton House and the tie-in point with P3 at Lawrence Road. The route option length is 6.7km.

Colpy Junction (J4)

A DMRB compliant, grade separated loop arrangement has been developed located southwest of Colpy. It is connected to the existing A96 via a link road, approximately 420m long, running west to east passing under the new dual carriageway. The existing junction at the A96/A920 is then maintained for local access to Kirkton of Culsalmond. The new junction caters for all movements on and off the new dual carriageway.

Lawrence Road Junction (J13)

A DMRB compliant, grade-separated junction with east facing slip roads only has been developed on Lawrence Road/B992 that seeks to minimise impacts on existing properties and land. The mainline is on embankment in this location and allows for a perpendicular underbridge to accommodate the re-aligned Lawrence Road. A roundabout is provided on the north side of the mainline to cater for the realigned B992, eastbound on-slip and Lawrence Road north tie in. The westbound off-slip meets the realigned Lawrence Road at a priority junction. Existing accesses are maintained and realigned where required.

4.3 Red to Pink 1 vs Red to Pink 2 pairing assessment conclusion

The full pairing assessment for Red to Pink 1 (R1/P1) vs Pink 2 (R2/Br1/P2) is included in Appendix A2.

The engineering appraisal found that the Red to Pink 2 route option performed better than the Red to Pink 1 route option with regards to Earthworks/Geotechnics, Structures, Utilities and Residual Hazards, principally due to the major viaduct crossing of the River Urie/floodplain and the greater potential for overhead transmission line diversions on the Pink 1 route option.

The environmental appraisal found that the Red to Pink 2 route option performed better than the Red to Pink 1 route option. The Pink 1 route option has Major Adverse Impacts on the community around Culsalmond and Snipefield, the loss of part of Snipefield Wood, impacts on the setting of the hut circles at Woodside Scheduled Monument, Category A listed building of Culsalmond Old Parish Church and Mummer's Reive Cairn Scheduled Monument which cannot be mitigated. The Pink 1 route option also has more interactions with watercourses and identifies greater impact on ecological receptors.

The traffic and economics appraisal found that the Red to Pink 2 route option performed better than the Red to Pink 1 route option. The Pink 2 route option is considered to offer greater potential to better connect the settlements of Culsalmond and Colpy through provision of new footpaths and crossing facilities, reduce conflict between motorised and non-motorised users and encourage active travel.

The pairing assessment for the Red to Pink 1 against Red to Pink 2 route options concluded that the Red to Pink 2 route option (R2/Br1/P2) is the better performing route option combination.

5 Overall pairing assessment conclusions

Pairing assessments undertaken on the Cyan to Pink and Red to Pink route options concluded as follows:

- All disciplines (engineering, environmental and traffic and economics) identified that the Cyan to Pink 2 route option as better performing than the Cyan to Pink 1 route option.
- All disciplines (engineering, environmental and traffic and economics) identified that the Red to Pink 2 route option as better performing than the Red to Pink 1 route option.

It is concluded that the Pink 2 route option is the better performing route option combination and should be progressed for further development.

The Pink 1 route option should be removed from further consideration.

Appendix A

Pairing assessments

Appendix B

Engineering plans

Appendix C

Environmental plans



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