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A96
DUALLING
HARDMUIR TO FOCHABERS

A96 Dualling

Hardmuir to Fochabers scheme

DMRB Stage 2
Scheme Assessment Report

Volume 3 – Part 5
Assessment Summary and
Preferred Option Recommendation

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A96 Dualling Hardmuir to Fochabers

DMRB Stage 2 Scheme Assessment Report Volume 3

Part 5 – Assessment Summary and Preferred Option Recommendation

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25. Assessment Summary

25.1 Introduction

25.1.1. Summaries are provided of the engineering assessments (Part 2, Chapters 4-7), the environmental assessments (Part 3, Chapters 8-21) and the traffic and economic assessments (Part 4, Chapters 22-24). Sections 25.2, 25.3 and 25.4 below summarise the main findings of this Design Manual for Roads and Bridges (DMRB) Stage 2 Scheme Assessment Report for the shortlisted options appraised in the Hardmuir to Hillhead, Hillhead to Lhanbryde and Lhanbryde to East of Fochabers sections respectively.

25.2 Hardmuir to Hillhead

Engineering Assessment

25.2.1. From the engineering assessment there are no significant factors affecting either of the options beyond those which would not be expected in a conventional civil engineering operation for a road scheme such as this.

25.2.2. The main features of the engineering assessment for this section are summarised below:

- **Mainline Alignment and Junction Layouts** - both options have been designed to fully meet DMRB standards without relaxations or departures from Standard at this stage.
- **Local Roads and Access** – the strategy will retain connectivity of the network and both options will have similar effects.
- **Topography and Land Use** – both options are similar.
- **Geotechnics and Earthworks** - based on the route lengths potentially affected by significant areas of compressible ground, the South Option is the more favourable. The North Option requires more imported material for earthworks construction. The South Option is more favourable overall.
- **Hydrology and Drainage** - both options have a similar number of bridge crossings. The South Option requires more culverts than the North Option making it less favourable.
- **Structures** - both options have similar overall structures requirements, however, the North Option is slightly less favourable due to the need for two railway crossings.
- **Utilities** - both options affect the high-pressure gas network; the North Option is favoured due to interface at one location whilst the South Option is interfaced at four locations. Both options also interface with the 132kV power line network only once, however the North Option is less favourable due to greater impact at the Forres East Junction.
- **Non-Motorised Users (NMUs)** - there are no significant engineering issues associated with NMUs. NMU provision on the Preferred Option will be designed and developed during DMRB Stage 3.
- **Constructability** - the North Option poses seven particular constructability challenges compared with four for the South Option. Giving consideration to both the number and complexity of these issues, the South Option is considered more favourable.

Environmental Assessment

25.2.3. There are no potential impacts so significant that an option should be discounted on the basis of any individual environmental criteria. Both route options have potential for adverse (and some positive) impacts upon the environment.

25.2.4. The main findings of the environment assessment are summarised below:

- **Policies and Plans** - the North Option is predicted to have a moderate adverse impact on two sites designated in the Local Development Plan (LDP) for business and industrial development and the South Option would have a moderate adverse impact on a small LDP amenity site. The North Option is predicted to adversely affect one planning application site. Overall the South Option is predicted to have slightly less impact on policies and plans.
- **Air Quality** - no significant impacts on local air quality are predicted for either option since pollutant concentrations with and without the Scheme would be well below relevant air quality objectives, for the protection of human health and vegetation. Emissions of air pollutants from traffic at a regional level are predicted to be similar for both options.
- **Noise and Vibration** - overall the North Option is predicted to adversely affect more properties than the South Option and the South Option is predicted to have a greater number of noise benefits. Overall the South Option is predicted to have less adverse effect due to traffic noise and vibration.
- **People and Communities** - the North Option is predicted to result in fewer significant adverse effects on non-motorised user (NMU) routes. The South Option would have more adverse impact on community amenities and outdoor area-based facilities. Overall the North Option is predicted to have less adverse effect on People and Communities.
- **Agriculture, Forestry & Sporting** - the South Option would result in the loss of slightly more agricultural land than the North Option (although less prime land). The North Option is predicted to adversely affect slightly more land holdings than the South Option. Overall the South Option is considered to result in slightly less effect on agriculture, forestry and sporting interests.
- **Materials** - the North Option would require less bulk earthworks although substantially more import than the South Option. The South Option would require slightly more materials for pavement and structures. Overall the South Option is predicted to have slightly less impact on materials.
- **Visual Effects** - the South Option would be visually contained by woodland, limiting its visual effects. However, it would give rise to significant visual effects on receptors within open spaces to the south, south-east and east of Forres and overall would be predicted to have a greater number of significant visual effects than the North Option. The North Option is located closer to the existing A96, which limits its predicted visual change in some areas. Overall the North Option is predicted to have less effect on visual amenity.
- **Cultural Heritage** - the North Option has a greater effect on Listed Buildings and regionally significant archaeological sites. The South Option has a direct effect on a Garden and Designed Landscape (GDL). Overall the South Option is predicted to have less effect on cultural heritage.
- **Landscape** - the South Option would be prominent within the landscape and intrusive upon an intricate landscape pattern whereas the North Option would relate more

closely to an existing infrastructure corridor and to the edge of Forres. Overall the North Option is predicted to have less effect on the landscape.

- **Nature Conservation** - the North Option would result in significantly less ancient and native woodland loss, than the South Option. Potential habitat loss and disturbance effects to important areas of nature conservation is predicted for the South Option. Overall the North Option is predicted to have less effect on nature conservation.
- **Geology, Soils, Contaminated Land & Groundwater** - the South Option is predicted to have potentially significant effects associated with land contamination at the former RAF base in Forres. Overall the North Option is predicted to have slightly less effect on geology, soils, contaminated land and groundwater.
- **Road Drainage and the Water Environment** - neither option is predicted to have significant effects on the River Findhorn or Burn of Mosset in terms of hydrology and flood risk, fluvial geomorphology and water quality, or on the functionality of the Forres Flood Alleviation Schemes (FAS).

Traffic and Economic Assessment

25.2.5. Both the North and South Options are expected to create a significant transfer of traffic from the existing A96. In the AM peak both options are predicted to save between approximately two and five minutes in each direction for vehicle trips between Hardmuir and Hillhead when compared to the Do Minimum scenario. The North Option is approximately one minute quicker than the South Option, owing to the shorter, more direct route taken around Forres.

25.2.6. The estimated accident savings indicate that the North Option would have more casualty savings than the South Option.

25.2.7. The North Option provides best value with the Net Present Value (NPV) exceeding that for the South Option by £22m.

25.3 Hillhead to Lhanbryde

Engineering Assessment

25.3.1. From the engineering assessment there are no significant factors affecting either of the options beyond those which would not be expected in a conventional civil engineering operation for a road scheme such as this.

25.3.2. The main features of the engineering assessment for this section are summarised below:

- **Mainline Alignment and Junction Layouts** - both options have been designed to fully meet DMRB standards without departures or relaxations from Standard at this stage.
- **Local Roads and Accesses** – the strategy will retain connectivity of the network and both options will have similar effects.
- **Topography and Land Use** – both options are similar.
- **Geotechnics and Earthworks** - based on the route lengths potentially affected by significant areas of compressible ground, the North Option is more favourable. The North Option requires more imported material for earthworks construction, therefore in terms of the earthworks balance, the South Option is more favourable. Overall the South Option is more favourable.

- **Hydrology and Drainage** - Both options have a similar number of culverts, but the South Option is less favourable because it requires more bridge crossings than the North Option.
- **Structures** - both options have similar overall structures requirements, however, the South Option is less favourable due to the added complexity associated with the major river crossings.
- **Utilities** - while the North Option is favoured in relation to the number of interfaces with the high-pressure gas network, the South Option is favoured due to fewer interfaces with the 132kV power line.
- **NMUs** - there are no significant engineering issues associated with NMUs. NMU provision on the Preferred Option will be designed and developed during DMRB Stage 3.
- **Constructability** - both options have similar constructability challenges, however the North Option is slightly less favourable due to the interface with the existing A96 road users at Elgin East Junction.

Environmental Assessment

25.3.3. There are no potential impacts so significant that an option should be discounted on the basis of any individual environmental criteria. Both options have potential for adverse (and some positive) impacts upon the environment.

25.3.4. The main findings of the environment assessment are summarised below:

- **Policies and Plans** - the South Option is predicted to adversely impact on two designated LDP sites and the North Option is predicted to significantly impact on one LDP site. The North Option is predicted to adversely impact on four planning application sites near Elgin, and the South Option is predicted to significantly impact one planning application site. Overall there is not predicted to be any material difference in impacts on policies and plans.
- **Air Quality** - no significant impacts on local air quality are predicted for either option since pollutant concentrations with and without the Scheme would be well below relevant air quality objectives for the protection of human health and vegetation. Emissions of air pollutants from traffic at a regional level are predicted to be similar for both options.
- **Noise and Vibration** - overall the North Option is predicted to adversely affect more properties than the South Option and a larger number of properties would benefit from noise reductions for the South Option. Overall the South Option is predicted to have slightly less effect due to traffic noise and vibration.
- **People and Communities** - both options are predicted to adversely affect users of a similar number of NMU routes. The South Option would adversely impact on several community amenities. Overall the North Option is predicted to have slightly less effect on people and communities.
- **Agriculture, Forestry & Sporting** - the North Option would result in the loss of more agricultural land including prime agricultural land than the South Option. The North Option is predicted to have major adverse effects on slightly more land holdings than the South Option. Overall the South Option is predicted to have less effect on agriculture, forestry and sporting interests.

- **Materials** - the North Option requires more bulk earthworks and import than the South Option. The South Option has a higher material requirement for structures, but it has a shorter route length requiring less material for road pavement. Overall both options are predicted to have similar effects on materials.
- **Visual Effects** - for both options the majority of effects would be on isolated residential receptors (they are mainly screened from the main settlements by the landform, including Elgin). The South Option is predicted to give rise to fewer visual effects overall, particularly at its western extent, which is well screened by the surrounding landform and woodland cover. Overall the South Option is predicted to have slightly less effect on visual amenity.
- **Cultural Heritage** - the South Option has a greater effect on the setting of the Category A Listed Coxtan Tower. The South Option has a slightly greater effect on Listed Buildings and regionally significant archaeological sites. Overall the North Option is predicted to have slightly less effect on cultural heritage.
- **Landscape** - the South Option would relate more closely to the existing infrastructure corridor in the west and the distinct landform and landscape pattern in the east, despite it having significant effects near Lochinver, where the Link Road to Elgin (West) would be prominent. Overall the South Option is predicted to have slightly less effect on the landscape.
- **Nature Conservation** - the North Option would result in significantly less ancient and native woodland loss than the South Option. The South Option would result in adverse effects on a pond network and severance of woodland habitat. Overall the North Option is predicted to have less effect on nature conservation.
- **Geology, Soils, Contaminated Land & Groundwater** - there are no predicted significant effects on designated geological resources or carbon rich soils associated with the South Option; however, there are potentially significant effects associated with contamination where it crosses the site of the former RAF base in Elgin. Overall the North Option is predicted to have slightly less effect on geology, soils, contaminated land and groundwater.
- **Road Drainage and the Water Environment** - neither option is predicted to have significant effects on the River Lossie (and tributaries) in terms of hydrology and flood risk, fluvial geomorphology and water quality, or on the functionality of the Elgin Flood Alleviation Scheme (FAS). However, overall the North Option is predicted to have slightly less adverse effect on the water environment.

Traffic and Economic Assessment

- 25.3.5. A large transfer of traffic occurs from the existing A96 in both the North and South Options. Within Elgin, the reduction in traffic is consistent between the two options as some trips continue to use local roads for origins and destinations in Elgin. In the AM peak vehicle trips for both options are predicted to save between approximately 11 and 14 minutes in each direction (between Hillhead and Lhanbryde) when compared to the Do Minimum scenario. The South Option is approximately one and a half minutes quicker than the North Option, owing to the shorter, more direct route taken around Elgin.
- 25.3.6. The estimated accident savings indicate that the South Option would have more casualty savings than the North Option.

25.3.7. The South Option provides best value with the NPV exceeding that for the North Option by £46m.

25.4 Lhanbryde to East of Fochabers

Engineering Assessment

25.4.1. From the engineering assessment there are no significant factors affecting either of the options beyond those which would not be expected in a conventional civil engineering operation for a road scheme such as this.

25.4.2. The main features of the engineering assessment for this section are summarised below:

- **Mainline Alignment and Junction Layouts** - both options have been designed to fully meet DMRB standards without departures or relaxations from Standard at this stage.
- **Local Roads and Accesses** – the strategy will retain connectivity of the network and both options will have similar effects.
- **Topography and Land Use** – both options are similar.
- **Geotechnics and Earthworks** - Based on the route lengths potentially affected by significant areas of compressible ground, the North Option is more favourable. The North Option also generates more material for earthworks construction. In terms of the earthworks balance, the North Option is more favourable. The North Option is more favourable overall.
- **Hydrology and Drainage** - both options have a similar number of bridge crossings. The South Option requires more culverts than the North Option making it less favourable.
- **Structures** - although the South Option has a fewer number of structures, the size of those required add significant complexity, particularly around the Fochabers Junction. The relative simplicity of the North Option makes this the more favourable option.
- **Utilities** - The South Option is more favourable due to the lower overall number of interfaces with utilities.
- **NMUs** - there are no significant engineering issues associated with NMUs. NMU provision on the Preferred Option will be designed and developed during DMRB Stage 3.
- **Constructability** - the North Option poses seven particular constructability issues compared with five for the South Option. Giving consideration to both the number and complexity of these issues, the South Option is therefore considered more favourable.

Environmental Assessment

25.4.3. There are no potential impacts so significant that an option should be discounted on the basis of any individual environmental criteria. Both options have potential for adverse (and some positive) impacts upon the environment.

25.4.4. The main findings of the environment assessment are summarised below:

- **Policies and Plans** - the North and South Options are predicted to conflict with a similar number of LDP policies. The North Option is predicted to have a moderate adverse impact on two designated LDP sites and the South Option is not predicted to

significantly affect any LDP sites. Both options are predicted to have a major adverse effect on a planning application site. Overall the South Option is predicted to have slightly less impact on policy and plans.

- **Air Quality** - no significant impacts on local air quality are predicted for either option since pollutant concentrations with and without the Scheme would be well below relevant air quality objectives for the protection of human health and vegetation. Emissions of air pollutants from traffic at a regional level are predicted to be similar for both options.
- **Noise and Vibration** - overall the North Option is predicted to adversely affect more properties than the South Option and a larger number of properties would benefit from noise reductions for the South Option. Overall the South Option is predicted to have less effect due to traffic noise and vibration.
- **People and Communities** - both options are predicted to adversely affect users of a similar number of NMU routes. The North Option would have greater adverse impact on community amenities. Overall the South Option is predicted to have slightly less effect on people and communities.
- **Agriculture, Forestry & Sporting** - both options would result in a similar loss of agricultural land (including prime agricultural land). The North Option is predicted to adversely affect slightly more land holdings than the South Option. Overall no material difference has been identified in the predicted effects of each option.
- **Materials** - the North Option requires more bulk earthworks and generates substantially more surplus than the South Option. The South Option has a substantially higher material requirement for structures. Overall the North Option is predicted to have slightly less impact on materials.
- **Visual Effects** - both options would give rise to the same predicted visual effects at their western extents. Where the routes diverge and follow alignments to the north and south of Fochabers, the North Option would most notably give rise to significant visual effects on Inchberry Road properties and receptors within the Gordon Castle Estate, whilst the South Option would give rise to significant visual effects on receptors within the Spey strath, particularly in the vicinity of Dipple and Ordiequish. Overall both options are predicted to have a similar level of effect on visual amenity.
- **Cultural Heritage** - the North Option has a greater effect on Listed Buildings and on a Garden and Designed Landscape (GDL). Overall the South Option is predicted to have less effect on cultural heritage.
- **Landscape** - both options would relate to existing infrastructure in the west and affect the distinct landscape experience of some woodland areas. The North Option would intrude upon the Gordon Castle GDL, and the cut through Hill of Fochabers. Both options would cross the River Spey and strath, although the South Option would not compromise the distinct eastern backcloth of the strath to the same degree as the North Option. Overall the South Option is predicted to have slightly less effect on the landscape.
- **Nature Conservation** - both options have the potential to adversely impact the River Spey Special Area of Conservation (SAC) and Loch Oire SSSI where the options sever habitats between the loch and the nearby Loch na Bo. Both options are predicted to result in potential habitat loss, disturbance and severance in key woodlands and have a moderate adverse effect from loss of ancient woodland. Similar effects on protected species are predicted for both options, particularly from disturbance to capercaillie and osprey. Both options are predicted to have similar effects on nature conservation.

- **Geology, Soils, Contaminated Land & Groundwater** - no significant effects are predicted for either option on geological resources or carbon rich soils, or effects associated with potentially significant contamination. The South Option crosses the central part of the Spey Abstraction Scheme with potentially greater impacts, compared with the North Option which crosses the northern part of the Spey Abstraction Scheme. Overall the North Option is predicted to have slightly less effect on geology, soils, contaminated land and groundwater.
- **Road Drainage and the Water Environment** - neither option is predicted to have significant effects on the River Spey (and tributaries) in terms of hydrology, flood risk and water quality. The South Option is slightly less favoured in respect of fluvial geomorphology as it crosses the River Spey on an actively-eroding meander bend. Overall the North Option is predicted to have slightly less effect on the road drainage and water environment.

Traffic and Economic Assessment

- 25.4.5. The two options attract high traffic volumes. In the AM peak both options are predicted to save between approximately four and five minutes for vehicle trips in each direction (between Lhanbryde and east of Fochabers) when compared to the Do Minimum scenario. There is no difference in journey time savings between the North and South Options.
- 25.4.6. The estimated accident savings indicate that the casualty savings are similar for both options with a slight preference for the South Option.
- 25.4.7. The North and South Options provide NPVs of the same magnitude.

26. Preferred Option Recommendation

26.1 Introduction

26.1.1. This chapter describes the evaluation of the shortlisted options and recommends the Preferred Option to be taken forward for Design Manual for Roads and Bridges (DMRB) Stage 3 assessment. The Preferred Option recommendation has been identified through the DMRB Stage 2 assessment which incorporates the scheme objectives and the Scottish Government's appraisal criteria. Feedback following public consultation exercises held in June 2017, February / March 2018 and August 2018 has also been considered during the route option assessment process.

26.2 Stage 2 Value for Money Workshop

26.2.1. A Stage 2 Scheme Options Assessment Value for Money (VfM) Workshop was held on 20 September 2018, facilitated by Capital Value and Risk Limited. At this workshop, the project team reported the assessment outcomes from the DMRB Stage 2 work using the Government's appraisal criteria for the assessment of trunk road schemes:

- Economy – supporting sustainable economic activity in appropriate locations and getting good value for money;
- Safety – to improve safety for all road users;
- Environment – protecting the built and natural environment;
- Integration – ensuring that all decisions are taken in the context of the integrated transport policy; and
- Accessibility & Social Inclusion – improving access to everyday facilities for those without a car and reducing community severance.

26.2.2. In addition, three other criteria were also considered as part of the assessment relating to being promotable / deliverable through the statutory processes, minimising disruption during construction and facilitating operational resilience.

26.2.3. A copy of the Stage 2 Scheme Options Assessment VfM Workshop Report is included in Appendix A26.1.

26.2.4. At the VfM workshop each option was scored against the assessment criteria as identified in the VfM Workshop Report. The Utility Score is the overall total assessment score for each option. The Utility Score for each option divided by the estimated cost for each option provides a Value Index measure. Options with a higher Value Index score are considered to be preferred since it represents better value (ratio of utility to cost).

26.2.5. A preference was selected for each of the three sections as summarised in Tables 26.1, 26.2 and 26.3 below.

Table 26.1 Hardmuir to Hillhead Option Assessment Summary

	North Option	South Option
Utility Score	1157	984
Cost £M including Risk (Q1 2018) excluding VAT	279.6	263.8
Value Index (utility score/cost)	4.1	3.7
	Preference	

Table 26.2 Hillhead to Lhanbryde Option Assessment Summary

	North Option	South Option
Utility Score	1056	1110
Cost £M including Risk (Q1 2018) excluding VAT	354.3	329.6
Value Index (utility score/cost)	3.0	3.4
		Preference

Table 26.3 Lhanbryde to East of Fochabers Option Assessment Summary

	North Option	South Option
Utility Score	1132	1143
Cost £M including Risk (Q1 2018) excluding VAT	212.3	250.5
Value Index (utility score/cost)	5.3	4.6
	Preference	

26.2.6. The combination of the three preferences for the Hardmuir to Hillhead, Hillhead to Lhanbryde and Lhanbryde to East of Fochabers sections was also considered as a sensitivity test at the workshop with other potential combinations of options for the three sections.

26.2.7. This confirmed that the “North – South – North” (N-S-N) combination presents the best value (combined Value Index); the highest Net Present Value (NPV) and highest Benefit Cost Ratio (BCR) of all the option combinations, as shown in Table 26.4 below.

Table 26.4 End to End Options Assessment Summary

	N-N-N	N-N-S	N-S-N	N-S-S	S-N-N	S-N-S	S-S-N	S-S-S
Combined Utility Score	3345	3356	3399	3410	3172	3183	3226	3237
Combined Cost £M including Risk (Q1 2018) excluding VAT	846	884	822	860	830	869	806	844
Best Value (Combined Value Index)	12.4	11.7	12.8	12.1	12.0	11.3	12.4	11.7
Present Value Costs (PVC) £M	475	496	461	482	466	487	452	473
Present Value Benefits (PVB) £M	540	561	580	564	519	498	551	533
NPV £M	65	65	119	82	53	11	99	60
BCR	1.1	1.1	1.3	1.2	1.1	1.0	1.2	1.1
			Preferred Option					

26.3 Preferred Option Assessment

Hardmuir to Hillhead

26.3.1. Following the DMRB Stage 2 Scheme Assessment and the VfM Workshop the North Option is preferred for the following key reasons:

- Being significantly shorter in length than the South Option, it provides better journey time savings for all trunk road traffic, including freight;
- Accident potential, as modelled over a 60-year period, is significantly less than the South Option;

- It is located close to existing infrastructure and has less adverse landscape and visual effects than the South Option;
- It has less impact on ancient woodland and less risk of disturbance to important areas of nature conservation associated with the South Option which is close to a Special Protection Area (SPA);
- It does not affect woodland used by the community that would be impacted by the South Option; and
- It provides an opportunity to facilitate active travel through the creation of a possible NMU route linking Forres to villages further west. No equivalent opportunity has been identified for the South Option.

26.3.2. The North Option is also favoured for the following reasons:

- There is less requirement for the crossing of, and alterations to, minor watercourses; and
- It avoids potentially contaminated land at the former RAF Base on the south west edge of Forres.
- It has less interfaces with the high-pressure gas network.

26.3.3. It should be noted that the North Option performs less favourably compared to the South Option for some assessment criteria as it is predicted to have:

- Slightly more impact on policies and plans;
- More adverse effect due to predicted traffic noise impacts;
- Slightly more impact on materials;
- More adverse effects on cultural heritage;
- Slightly more constructability challenges; and
- Greater impact on the extra high voltage overhead power lines.

26.3.4. The points noted in 26.3.3. above will be considered further during the DMRB Stage 3 assessment, to seek to reduce the potential impact of the scheme, through further design development including development of appropriate mitigation measures. This will include consultation with statutory consultees, stakeholder, the public and landowners.

26.3.5. The outcome of the assessment framework identifies that although the North Option is slightly more expensive, the Value Index for the North Option is significantly higher than the South Option indicating it provides significantly better value.

Hillhead to Lhanbryde

26.3.6. Following the DMRB Stage 2 Scheme Assessment and the VfM Workshop the South Option is preferred for the following key reasons:

- Being significantly shorter in length than the North Option it provides better journey time savings for all trunk road traffic, including freight;
- Accident potential, as modelled over a 60-year period, is significantly less than the North Option; and

- Agricultural landtake is less, with less prime land affected than the North Option.

26.3.7. The South Option is also favoured for the following reasons:

- It would require less imported material and achieve a better earthworks balance;
- It has fewer interfaces with extra high voltage overhead power lines;
- It can be constructed with less disruption to existing A96 road users;
- It would have slightly less effect due to traffic noise and vibration; and
- It has slightly less landscape and visual effects particularly at the western and eastern extents of the section.

26.3.8. It should be noted that the South Option performs less favourably compared to the North Option for some assessment criteria as it is predicted to have:

- Lower accessibility to employment areas;
- Slightly more Non-Motorised User (NMU) conflicts;
- Slightly more effect on cultural heritage;
- More effect on nature conservation;
- Slightly more effect on geology, soils and contaminated land; and
- Slightly more effect on road drainage and the water environment.
- More interfaces with the high-pressure gas network.

26.3.9. The points noted in 26.3.8. above will be considered further during the DMRB Stage 3 assessment, to seek to reduce the potential impact of the scheme, through further design development including development of appropriate mitigation measures. This will include consultation with statutory consultees, stakeholder, the public and landowners.

26.3.10. The outcome of the assessment framework identifies that the South Option is slightly less expensive and the Value Index for the South Option is significantly higher than the North Option indicating it provides significantly better value.

Lhanbryde to East of Fochabers

26.3.11. Following the DMRB Stage 2 Scheme Assessment and the VfM Workshop the North Option is preferred for the following key reasons:

- Significantly less mitigation costs and potential risk to the operation of the Spey Water Abstraction scheme than for the South Option.

26.3.12. The North Option is also favoured for the following reasons:

- It generates more material and has greater opportunity for earthworks balance;
- It has less requirement for the crossing of, and alterations to, minor watercourses;
- A shorter crossing of the River Spey and its flood plain is needed;
- There is a lower requirement for concrete and steel;
- There would be less risk to contamination of the groundwater within the Spey valley;

- It has less effect in relation to road drainage and water environment; and
- It provides better opportunities to facilitate active travel through the creation of a possible NMU route linking Lhanbryde to the existing NMU network at Mosstodloch.

26.3.13. It should be noted that the North Option performs less favorably compared to the South Option for some assessment criteria as it is predicted to have:

- More adverse effect on traffic noise and vibration;
- Slightly more impact on people and communities;
- More effect on cultural heritage;
- Slightly more effect on landscape; and
- Slightly more constructability challenges.

26.3.14. The points noted in 26.3.13. above will be considered further during the DMRB Stage 3 assessment, to seek to reduce the potential impact of the scheme, through further design development including development of appropriate mitigation measures. This will include consultation with statutory consultees, stakeholder, the public and landowners.

26.3.15. The outcome of the assessment framework identifies that the North Option is significantly less expensive with a Value Index that is significantly higher than the South Option indicating it provides significantly better value.

26.4 DMRB Stage 2 Preferred Option Recommendation

26.4.1. On the basis of the DMRB Stage 2 Scheme Assessment and the VfM Workshop it is recommended that the following are taken forward as the Preferred Option for the A96 Dualling Hardmuir to Fochabers Scheme:

- The North Option for the Hardmuir to Hillhead section;
- The South Option for the Hillhead to Lhanbryde section; and
- The North Option for the Lhanbryde to East of Fochabers section.

26.4.2. At Stage 3, the Preferred Option will be developed further including, where appropriate:

- Refinement of the alignment;
- Junction locations and layout;
- Local road improvements and private means of access;
- Geotechnical design and earthworks, including ground investigation;
- Hydrology and sustainable drainage proposals;
- Bridge structural type, form and location;
- Utility diversions;
- Undertaking further environmental surveys; and
- Development of suitable mitigation measures to reduce impacts on communities and the environment. These may include:
 - appropriate mammal underpasses;

- fences;
- landscape planting;
- noise barriers; and
- environmental bunds.

26.4.3. The design development of the Preferred Option will be informed by consultation with affected parties, including statutory bodies, local authorities, Community Councils, other relevant interest groups, members of the public and road users.

26.4.4. The Preferred Option is shown on Figure 26.1 (Volume 5). It offers the following key features:

- Improved journey times and reliability for all trunk road traffic, including freight;
- Significantly improved road safety;
- Better transport connections between settlements in Moray and to the wider strategic transport network;
- Opportunities to facilitate active travel;
- Relief to communities currently impacted by through traffic.



**TRANSPORT
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A96
DUALLING
HARDMUIR TO FOCHABERS

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