Information for an Appropriate Assessment Supporting Study for AA of Draft Shetland Transport Strategy

Zetland Transport Partnership June 2007

Prepared by: Melanie Findlay Principal Ecologist

1/1 Approved by:

William Latimer Associate Director

Shetland Islands Regional Transport Strategy SEA Information for an Appropriate Assessment

Rev No	Comments	Date
5	Minor amendment following comments from Client	22/06/07
4	Minor amendments	05/04/07
3	Issued to Client	23/03/07
2	Second draft to SNH	19/03/07
1	First draft to SNH	07/03/07

Dunedin House, 25 Ravelston Terrace, Edinburgh, EH4 3TP Telephone: 0131 311 4000 Fax: 0131 311 4090 Website: http://www.fabermaunsell.com

Reference IEDE

Job No 47236

June 2007 Error! Reference source not found.

This contains confidential and commercially sensitive information, which shall not be disclosed to third parties.

Table of Contents

1	Intro	duction	
	1.1	Introduction	
	1.3	Legislative Context	
	1.4	Scope of Cumulative Impact	5
	1.5	Approach to Assessment of Adverse Impact on Integrity	5
	1.6	Spatial Coverage	5
2	Natu	ra 2000 Sites	6
	2.1	Fetlar SPA	6
	2.2	Papa Stour SPA	7
	2.3	Papa Stour SAC	7
3	Asse	essment of Projects	
-	3.1	Ferry Berthing Structure – Hamar's Ness. Fetlar	
	3.2	Papa Stour Road Improvements	
	3.3	Fixed Link - Yell Sound	14
4	Sum	mary and Conclusion	
	4.1	Summary	15
5	Appe	endix	
	1.1.		-

Introduction

1.1 Introduction

Faber Maunsell was commissioned by Zetland Transport Partnership to provide advice to inform an Appropriate Assessment (AA) of the Draft Shetland Transport Strategy (TS). This complies with Article 6 of the Habitats Directive in demonstrating that mitigation of adverse impact is attainable, thus clearing the way for future project based Appropriate Assessments.

Table 1: Proposals requiring AA

Proposal	Natura 2000 sites
Fetlar breakwater	Fetlar SPA
LRS 2 Significant road	Papa Stour SPA
schemes	Papa Stour SAC
Papa Stour road	
Fixed link between Shetland	Yell Sound Coast SPA
mainland and Yell	

1.2 Consideration of alternatives

Both the Fetlar breakwater and the Papa Stour road upgrade developments are tied to their location. Do minimum options would not achieve the objectives of the TS.

1.3 Legislative Context

The requirement for Appropriate Assessment of plans and projects on the potential impact on any Natura 2000 site is detailed in Article 6 (3) and (4) of the 'Habitats Directive'. It requires that 'any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessments of its implications for the site in view of the site's conservation objectives'. The directive goes on to say that the plan shall only be agreed if there is no adverse impact after mitigation is considered.

In addition, the Habitat Regulations (3(4)) state that 'every competent authority in the exercise of any of their functions, shall have regard to the requirements of the Habitats Directive so far as they may be affected by the exercise of those functions'.

1.3.1 Guidance

Appropriate Assessment of strategies is a new discipline in Scotland with few examples in place other than examples of screening. Guidance on the content and scope of this report has been taken from consultation with SNH and publications as follows:

- European Commission (2001) Assessment of plans and projects significantly affecting Natura 2000 sites: methodological guidance on the provision of Article 6(3) and (4) of the Habitats Directive 92/43/EEC
- European Commission. Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC
- Scottish Executive (2006) Assessing Development Plans in Terms of the Need for Appropriate Assessment, Interim guidance.

 Institute of Ecology and Environmental Management (2006) Guidelines for Ecological Impact Assessment in the United Kingdom (version 7 July 2006). http://www.ieem.org.uk/ecia/index.html

1.4 Scope of Cumulative Impact

It was agreed with John Uttley (SNH Area Manager) that no in-combination assessment is required (email 5/3/07).

1.5 Approach to Assessment of Adverse Impact on Integrity

The integrity of a site is defined¹ as 'the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified'.

Given the policy level of this assessment, the associated risk of inaccuracy in adverse impact prediction and the use of the precautionary principle, the following approach was used to define potential adverse impact on integrity and hence the need for policy based mitigation.

The potential impacts of each TS policy will be assessed in the context of the ecological needs of the qualifying species/habitat, the current baseline and the relationship of these to the sites' conservation objectives. Negligible impact as defined below will be regarded as not having the potential for adverse impact on the integrity of the Natura site. Impacts predicted to be greater than negligible will be viewed as having the potential for adverse impact on the sites integrity and will therefore require mitigation and an assessment of residual impact.

Negligible impact is defined:

- Where an impact (direct or indirect) is certain (>95% confidence limit) to have a no greater than local spatial scale with no long-term impact on qualifying habitats/species (e.g. small direct land-take which does not have long term impact on qualifying species/habitat as it is peripheral to home-ranges/nesting territories/not an Annex 1 habitat).
- Where an impact (direct or indirect) is certain to be of no greater than a limited duration and cause no long term impact on populations/habitats (e.g. Noise disturbance may cause limited loss of breeding habitat due to avoidance, but this breeding resumes to its former range the following season and the loss of breeding area for the duration of works is not predicted to have long term effects on the population).
- Where an impact (direct or indirect) is certain not to move the ecosystem away from favourable condition as defined by IEEM (2006).

This assessment is at a strategy level with sparse detail of the proposed projects. The approach taken is to predict the potential impacts as far as is possible and identify any limitations. This will then guide any policy-based mitigation, and direct any tender briefs for further work or project based AA.

1.6 Spatial Coverage

The assessment considers impacts within the designated boundaries, but also impacts beyond due to:

- Species not being ecologically self-contained within the boundary
- The tides and currents spreading impacts beyond the location of impact

¹ Scottish Executive (2000) Nature conservation: Implementation in Scotland of EC Directive on the conservation of natural habitats and of wild flora and fauna and the conservation of wild birds ('The Habitats and Birds Directives'). Revised guidance updating Scottish Office Circular no. 6/1995

C:\Documents and Settings\walkere\My Documents\Shetland\Jun 22\220607 ShetlandAA EMW.doc

2 Natura 2000 Sites

2.1 Fetlar SPA

2.1.1 Qualifying Features

Table 2: Qualifying features of Fetlar SPA

	Qualifying species	Fetlar Population	Population Index
Article 4.1 (breeding season)	Arctic Tern <i>Sterna</i> paradisaea	520 pairs	At least 1.2% of GB breeding population (Three year mean, 1994- 1997)
	Red-necked Phalarope <i>Phalaropus lobatus</i>	30 pairs	At least 75% of GB breeding population
	Dunlin <i>Calidris</i> alpina schinzii	90 pairs	At least 0.8% of the breeding Baltic/UK/Ireland population (Count, as at late 1980s-early 1990s)
Article 4.2 (breeding	Great <i>Skua</i> <i>Catharacta sku</i> a	512 pairs	At least 3.8% of the breeding World population (Count, as at 1992)
season)	Whimbrel <i>Numenius</i> <i>phaeopus</i>	65 pairs	<0.1% of the breeding Europe/Western Africa population (Count, as at late 1980s-early 1990s)
Article 4.2 (regularly supporting at least 20,000 seabirds)	During the breeding season, the area regularly supports 22,000 indiv seabirds including: Arctic Skua <i>Stercorarius parasiticus</i> , Fulmar <i>Fuln</i> <i>glacialis</i> , Great Skua <i>Catharacta skua</i> , Arctic Tern <i>Sterna paradisaea</i> necked Phalarope <i>Phalaropus lobatus</i> .		regularly supports 22,000 individual orarius parasiticus, Fulmar <i>Fulmarus</i> , Arctic Tern <i>Sterna paradisaea</i> , Red- S.

2.1.2 Nature Conservation Objectives

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

- To ensure for the qualifying species that the following are maintained in the long term:
- · Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

2.2 Papa Stour SPA

2.2.1 Qualifying Species

Table 3: Qualifying features of Papa Stour SPA

		Qualifying species	Papa Stour Population	Population Index
Article (breeding season)	4.1	Arctic Tern <i>Sterna</i> paradisaea	1000 pairs	At least 2.3% of GB breeding population (seabird census register)
Article (breeding season)	4.2	Ringed Plover Charadrius hiaticula	89 pairs	at least 0.6% of the breeding Europe/Northern Africa - wintering population

2.2.2 Nature Conservation Objectives

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

2.3 Papa Stour SAC

2.3.1 Qualifying features

Annex 1 habitats

- Reefs. Papa Stour has the most exposed rocky coastline in the UK supporting a diverse range of specialist scour tolerant plant and animal communities including kelp forests, soft coral and encrusting coralline algae
- Submerged or partially submerged sea caves. These provide a range of conditions with sheltered gullies and caves supporting a range of specialist fauna and flora.

2.3.2 Conservation Objectives

To avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and to ensure for the qualifying habitats that the following are maintained in the long term:

- Extent of the habitat on site
- Distribution of the habitat within site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat

3.1

8

3 Assessment of Projects

Ferry Berthing Structure – Hamar's Ness, Fetlar

Inter-island policy 6.17 (f) of the Strategy focuses on the provision of a new berthing structure at Hamar's Ness on the island of Fetlar. The existing ferry service is susceptible to delays and cancellations in poor weather due to the exposed ferry terminal. It has been suggested that a new berthing structure could improve service reliability; providing shelter for ferries berthing at Hamar's Ness. The relevant policy is as follows:

Carrying out specific work with the Fetlar community, to address concerns regarding the reliability of the service to Fetlar, the case for all weather berthing protection at Hamar's Ness, and also the case for basing a ferry on Fetlar possibly providing a dedicated service to the island. ZetTrans is committed to an urgent and early resolution of these outstanding issues, recognising that this will only be achieved through the collation and presentation of robust evidence, partnership working, and effective consultation with the Fetlar community. It also recognises that the link to Fetlar cannot be considered entirely in isolation of the Unst - Yell link.

This policy is currently at a very early stage and no details have been finalised regarding design, precise location or method of construction. As the policy states, a decision on whether to consider the development of a new berthing structure at Fetlar is dependent on further review of evidence.

The breakwater is to provide shelter for the existing jetty and initial design ideas are being formulated. Current design ideas are presented in Appendix I and the SPA boundary is illustrated in Map 1.

3.1.1 Assumptions

It is assumed that the ferry crossings will be more reliable with fewer weather related cancellations, as the development is being designed to allow the ferry service to continue to safely operate in a wider range of sea and weather conditions than is currently possible. It is assumed that this slight increase in frequency will be more notable in winter.

In common with other inter-island ferry routes in Shetland, it is possible that future replacement vessels may have larger dimensions than those currently operating the service. It is therefore probable that designs for the breakwater will include options to accommodate ferries larger than those currently used on the route.

The provision of improved berthing infrastructure may facilitate the consideration of revised service delivery options. One option could be for the overnight berthing of the vessel on Fetlar. Amongst other alternatives, this could result in an increase in service delivery.

Table 4: Impact Assessment of Fetlar breakwater on Fetlar SPA

Proposed	Impact type	Assessment	Mitigation						
activity									
Construction activ	Construction activities								
Construction of breakwater	Visual and noise disturbance	If carried out during breeding season, there could be visual and noise disturbance to birds at nesting sites and use of birds of open water.	Potential construction impact on the breeding success of the SPA						
		The construction site is approximately 1km from the SPA boundary, but birds will be active all around the island during the breeding season. 'No significant disturbance' is a conservation objective for the SPA. It is unknown whether the disturbance, at this distance will constitute <u>significant</u> disturbance. It is near certain that there will not be disturbance to the birds at their nest site, given the distance, however, construction disturbance will probably lead to interrupted feeding in the vicinity of the construction site. If this impacts on bird fitness/breeding success, there may be a longer term impact. Potential adverse impact	qualifying bird species could be avoided, if necessary, by suitable constraints (such as a defined time scale) that avoids adverse impact.						
	Changes in the marine environment	Changes in suspended sediments and turbidity causing reduced food availability for SPA qualifying birds. The construction is likely to cause greater turbidity and suspended sediment load which may have a local effect on the prey species used by the SPA qualifying species and the ability of the birds to locate prey. This relates directly to several of the conservation objectives. This effect is unlikely to extend much beyond the time scale of the construction period, and if there are seasonal restrictions on the construction period, this will largely avoid impact.							
	Contamination	No potential adverse impact Pollution events or poor practice causing low level seepage of polluting material could be directly or indirectly poisonous to qualifying bird species. Pollution may reduce local food availability. The probability, magnitude and scale of this cannot be predicted. Using the precautionary principal, adverse impact cannot be ruled out. Potential adverse impact	Adherence to SEPA's Pollution Prevention Guidelines (PPG 05 and 06) and/or the use of an Environmental Management Plan.						
Operational Impac	cts								

Proposed	Impact type	Assessment	Mitigation
activity			
New structure	Impact of new breakwater	The breakwater may impact upon the local marine environment changing turbidity, sedimentation processes, current, oxygenation. These local changes are unlikely to have a greater than negligible deleterious impact. The shelter and new substrate provided by the breakwater may be beneficial for some species, and offer more diverse feeding conditions for the SPA qualifying bird species.	There may be opportunities within the detailed design for ecological gain, such as creating shelter and substrate suitable for marine life to adhere to.
		No potential adverse impact	
Use of ferry	Larger boat size and more frequent trips (permanent)	Changes in the marine environment: smothering, changes in suspended sediment, changes in turbidity, noise, visual disturbance, abrasion, displacement, change in nutrient levels, contamination (particularly hydrocarbons), changes in oxygenation, introduction of microbial pathogens/parasites, introduction of non native species. The potential zone of impact from these types of effect is likely to be very local to the breakwater. The impact on the foraging area/quality to the SPA qualifying birds will be negligible. Changes of the individual ferry boat are unlikely and the trip is contained within local waters, therefore there is no risk of introduction of inappropriate biota. No potential adverse impact	
		Disturbance to nesting sites on small islets and adults using open water around the SPA. A larger vessel and slight increase in trips during summer months has no potential to impact on the breeding success of the SPA bird species (1,1) they per Comm.)	
		due to the distance from the islets. No potential adverse impact	

The above table was produced using the guidance matrix of maritime and coastal activities to environmental factors produced by the Marine Life Information network²

² Source: <u>http://www.marlin.ac.uk/PDF/activities3.pdf</u> (accessed 1st March 07)

C:\Documents and Settings\walkere\My Documents\Shetland\Jun 22\220607_ShetlandAA_EMW.doc

3.2 **Papa Stour Road Improvements**

Policy LRS 2, of the Shetland TS contains proposals for an upgrade to the road on the island of Papa Stour. No detailed design has been confirmed as yet but current proposals are to widen and resurface the full length of the existing single track road. The widened road will remain single track but will include additional passing places and new drainage.

Approximately 400m of the road lies adjacent to the Papa Stour SPA, please see Map 2.

Assumptions

- It is assumed that the Papa Stour road will not receive any significant increase in traffic journeys as a result of this road upgrade. The main change from the baseline will be an occasional lorry journey, facilitated by the upgrade.
- It is assumed that the current road management regime will not be altered. ٠

Proposed activity	Receptor Natura	Impact type	Assessment	Mitigation
Construction i	impacts			
Road widening	Papa Stour SPA	Loss of habitat within and out with SPA	There is potential for a small loss of habitat within the SPA associated with the road widening or the associated passing places in the eastern section of the road between the pier and Hurdieback. The potential for habitat loss is small in relation to the total area of the SPA, however it is the function of this habitat in relation to the breeding qualifying species that will determine the level of impact this could have and it cannot be assumed that a small loss of habitat equates to negligible impact. The SPA boundary, lying on the northern margin of the road for approximately 400m strongly indicates that the widening should occur on the southern edge of the road and that any construction compounds and passing places should also be located on the south side, but this requires an assessment of the habitat and use of the habitat by the qualifying species which may also use the land to the south of the road. Potential adverse impact	Ecological survey or use of existing studies to inform the final road design and construction methods. Use of an Environmental Management Plan to control risks and avoid adverse impact.
		Disturbance to nesting ringed plover and arctic tern	Construction work during the summer may effect the breeding SPA qualifying bird species. Disturbance to breeding birds may have longer term implications as the loss of recruitment to a generation may require several generations to be compensated. The distribution of the breeding birds and their use of the land bordering the road is required. Potential adverse impact	
	Papa Stour SAC	Surface run off	Construction activities may cause dust/sediments to enter the environment of the marine SAC. Oil or fuel spillages may be washed into the marine environment. These effects are more likely to impact on the SAC where the construction is in close proximity (at the pier) or where the road crosses a watercourse. In the context of the integrity of the SAC, this effect is likely to be local and reversible, however the scale, magnitude and probability of any effect will depend upon the adherence to good practice guidelines.	Adherence to SEPA's Pollution Prevention Guidelines (PPG 05 and 06) and the use of an Environmental Management Plan to control risks and avoid adverse impact.

Table 5: Impact Assessment of Papa Stour Road Upgrade on Papa Stour SPA and SAC

13

Proposed activity	Receptor Natura 2000 site	Impact type	Assessment	Mitigation
			Potential adverse impact	-
Operation imp	pacts			
Additional road runoff	Papa Stour SAC	Surface runoff	The increased hard surface will result in a greater road run off carrying hydrocarbons, dust and other chemicals.	
			The increase in surface run off from the road is unlikely to have a significantly greater impact on the marine life. However, opportunities should be sought to incorporate best practice in design to deal with run off.	

3.3 Fixed Link - Yell Sound

In principle, the Shetland TS supports the development of fixed links between the Shetland Mainland and Bressay, Yell, and Whalsay and between Yell and Unst. However, these fixed links are not *promoted* by the TS as it is not currently known if these would be technically or economically feasible. The policies of the TS support feasibility studies to determine whether such projects should be considered in greater detail. The following two TS policies state the current position regarding fixed links:

FL1: ZetTrans supports the principle of developing fixed links between Shetland Mainland, and the main offshore islands of Bressay, Yell, Unst and Whalsay

FL3: In the short-term, ZetTrans proposes to commission a study to confirm the robustness of business cases for fixed links between Yell and Unst (Bluemull Sound), Shetland Mainland and Yell (Yell Sound), Shetland Mainland to Whalsay and Shetland Mainland and Bressay, with particular emphasis on agreeing with regulatory bodies the appropriate standards and specifications that would apply.

SNH's consultation response expressed their concerns regarding the potential effects of developing inter-island fixed links. In particular, SNH stated that a fixed link connecting the Shetland Mainland with Yell would have potentially adverse effects on the Yell Sound Coast SAC. The lack of Appropriate Assessment relating to this possible fixed link and the aforemention proposals on Fetlar and Papa Stour were the basis of SNH's objection to the draft TS.

However, the Shetland TS does not actually promote the development of a fixed link between Yell and the Shetland Mainland; it promotes feasibility studies. As stated in the SEA Environmental Report, if it is decided at a future date that fixed links are to be taken forward, the Shetland TS will be reviewed and subject to a further SEA, as well as further consultation. In addition, if there is the potential for adverse effects on Natura sites, the updated TS would be subject to Appropriate Assessment.

Following discussions with SNH, it has been agreed that this Appropriate Assessment will focus only on the Fetlar and Papa Stour proposals and that fixed links will be addressed by the assessment referred to above.



Approx. location of berthing structure

Special Area for Conservation (SAC) - Approx. 80m S Fetlar SAC

Special Protection Area (SPA) - Approx. 2km S Fetlar SPA

	CAD:	DR			6
	App'd:	IAB			
3 '07	Scale:	1:100,	000		
				Rev:	
				A	3



Special Area for Conservation (SAC)

Special Protection Area (SPA)

	CAD:	DR				5
	App'd:	IAB				
'07	Scale:	1:50,0	00			
				Rev.		
				_	A3	+

4.1

4 Summary and Conclusion

Summary

This study has identified the particular types of effect that have potential for adverse impact on the integrity of Fetlar SPA, Papa Stour SPA and SAC. The study identifies mitigation measures to avoid/reduce these effects so that the integrity of the sites is not affected, thus demonstrating that the TS can be mitigated to avoid adverse impact. Project based Appropriate Assessments are the next stage to provide a more detailed approach, being informed by the final design, construction techniques and ecological data.

Table 6: Mitigation of Fetlar Breakwater

Impact	Mitigation
Construction disturbance	Seasonal constraints on construction
	Environmental Management Plan
Contamination during construction	SEPA's Pollution Prevention Guidelines (PPG 05 and 06)
	Environmental Management Plan

Table 7: Mitigation of Papa Stour Road

Impact	Receptor Natura site	Mitigation
Loss of habitat	Papa Stour SPA	Ecologically lead final design
		Environmental Management Plan
Disturbance during construction	Papa Stour SPA	Seasonal constraints on construction
		Environmental Management Plan
Marine Contamination	Papa Stour SAC	Adherence to SEPA's Pollution Prevention Guidelines (PPG 05 and 06)
		Environmental Management Plan

In conclusion, the aspects of the TS considered in this assessment are judged to have no adverse impacts upon the European Directive sites. Project-specific potential adverse impacts have been identified but have been considered to be capable of being satisfactorily mitigated by the approach to construction and detailed design.

5 Appendix

Fetlar breakwater, initial designs



