

**Ramsar Advisory Missions - No. 64:  
Åkersvika, Norway (2010)**

8-9 April 2010

**MISSION REPORT**

*by*

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*Photo: Norwegian Public Roads Administration*

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## 1. Introduction and purpose of this report

- 1.1 Ramsar Advisory Missions are a means by which the Convention on Wetlands (Ramsar Convention) provides technical assistance to Contracting Parties in the management and conservation of listed wetlands of international importance (Ramsar Sites) whose ecological character has changed, is changing or is likely to change as a result of technological developments, pollution or other human interference.
- 1.2 The Mission procedure (formerly known at different times as the Monitoring Procedure and the Management Guidance Procedure) was formally adopted by Recommendation 4.7 of the 4<sup>th</sup> meeting of the Conference of Parties (COP4) in 1990. Funding for Missions is typically from extra-budgetary sources which need to be sought each year. The main objective is to undertake fact-finding activities and to provide advice (always and only at the request of the Party concerned) in solving problems relating to the maintenance of the ecological character of a particular Ramsar Site or Sites. Missions are sometimes also able to contribute advice and assistance on other Convention implementation issues at the same time. Reports are published, once they have been agreed by the recipient government; and this offers lesson-learning benefits for the Convention as a whole.
- 1.3 It is a Convention requirement (Article 3.2) that information on actual or potential changes in ecological character of Ramsar Sites should be passed without delay by the relevant Contracting Party to the Ramsar Secretariat. In some cases information arrives first from other organisations or individuals.
- 1.4 In the present case, on 1 March 2007 the Norwegian Ornithology Society (i.e. the representative in Norway of the Convention's International Organization Partner BirdLife International) wrote to the Ramsar Secretariat informing them of the decision by the Norwegian Parliament to upgrade the E6 highway that crosses the Åkersvika Ramsar Site from two to four lanes, and listing a number of concerns in relation to possible change in the ecological character of the Ramsar Site as a consequence of this. As is current practice, the Secretariat forwarded this information to the national Ramsar focal point in the Norwegian Directorate for Nature Management (i.e. the designated Ramsar Administrative Authority in Norway) on 8 March 2007, asking for information in the context of Article 3.2 as referred to above.
- 1.5 Subsequently, the Directorate for Nature Management (DNM) provided provisional information on the situation in Åkersvika orally and electronically, and on 30 June 2009, the DNM wrote to the Ramsar Secretariat informing them that the Norwegian Parliament had approved the upgrading of the E6 highway from two lanes to four, from Kolomoen in Stange municipality (south of the city of Hamar) north to the city of Lillehammer. This stretch includes two sections (totalling 2.3 km in length) which already cross the Åkersvika Ramsar Site, and where alternative route options for the upgrading have been put forward. Each of these alternatives has potential implications for the ecological character of the designated wetland, and in its letter the DNM referred to the way this would be taken into account in the planning process.

- 1.6 On 30 September 2009, the Ministry of the Environment (the ultimate decision-making authority, together with the Government) wrote to the Secretariat requesting a Ramsar Advisory Mission, in order to furnish them with “a second opinion from a team of international experts” on the issues involved. The Ministry indicated that it would cover the costs of the Mission.
- 1.7 In their letter, the Ministry posed eleven questions on which they wished the Mission to give advice. Based on these and various documents supplied, the Mission team elaborated a framework for its own investigations comprising over fifty more specific questions. Taken together, these question lists comprised the informal terms of reference of the Mission. Broadly they equate to the topics now forming the sections of the present report; but the main lines of inquiry can also be summarised as follows:
- What are the respective advantage and disadvantages, for the Ramsar Site, of the different highway route alternatives that have been proposed? (Formally speaking, only two - “A” and “B” - remained officially on the table at the time of the Mission.)
  - Is the compensation for lost wetland values that has been proposed appropriate, adequate and feasible, or are there other suggestions that could be made?
  - What suggestions can be made about the different construction options under consideration (eg different configurations for widening)?
  - What advice can be given regarding restoration of wetland areas by removal of the existing road in the northern part of the Ramsar Site, if option “B” is chosen?
  - Should the Site be added to the Montreux Record? (For explanation see section 12 below.)
- 1.8 Part of the purpose of many Ramsar Advisory Missions is to provide an additional (international) source of assurance for the decision-making process, through auditing, testing and peer-review. This means that it is not necessarily expected that a RAM will generate ideas or insights that have not already been thought of; but it will cast them in a new light, bring independent scrutiny, and distil those issues that have particular relevance to the requirements and the adopted guidance of the Convention.
- 1.9 In this sense the approach which gives best value to the inviting country is often one of “constructive challenge”. Stakeholders should not therefore see it as primarily inquisitorial or compliance-based; but rather as an opportunity for the relevant authorities to test and demonstrate the quality (thoroughness, precaution, transparency, consistency etc) of the decision-making processes involved, in the context of Ramsar requirements. It is thus “advisory” in the true sense.
- 1.10 A Mission team comprising Tobias Salathé (Senior Adviser for Europe, Ramsar Secretariat) and Dave Pritchard (consultant) visited the area on 8-9 April 2010, holding discussions with representatives of the different statutory authorities involved, and with local experts and interest groups. Media publicity was freely

facilitated, and visits to different locations in the field took place. Details of the programme and participants are given in the acknowledgements and the Annex at the end of this report.

## 2. Overview of Åkersvika Ramsar Site

- 2.1 Åkersvika Ramsar Site was the first Site to be designated in Norway when the country joined the Convention in 1974, and the 13th to be designated anywhere in the world. It has since been extended slightly; and its current area is 424 ha.
- 2.2 The Ramsar Site is said to be coterminous with the nationally-designated Åkersvika Nature Reserve. The reserve also dates from 1974, and is protected under national law (the Nature Conservation Act, now the Nature Diversity Act). The daily management responsibility resides with the County Governor of Hedmark, under the overall jurisdiction of the Norwegian Directorate for Nature Management.
- 2.3 Åkersvika consists of the deltas of the rivers Svartelva and Flakstadelva and the adjacent shallow basin forming their joint outlet into Lake Mjøsa. It is one of the largest and best developed classic freshwater delta systems in Norway, and its rivers upstream remain relatively unmodified (although a 600m section of the Flagstad river was moved slightly to the east when the original E6 highway was built in the late 1960s, just north of the Vien intersection, and a 250m section was altered at the intersection itself). Fine-grained alluvial silt inflow has formed sandbanks, mudbanks and small islands in the delta, with a pattern of small channels and bays. There are also areas of wet meadow and grazing marsh.
- 2.4 The site is crossed by causeways carrying roads and a railway, with associated industrial development including that built during the 1970s on former wetland between the Rv 25 road and the Rørosbanen railway. Lake Mjøsa was dammed in 1961 as part of a hydro-power scheme, raising its average water level. The water level now varies seasonally, with peak electricity demand in winter drawing levels down to a minimum in springtime, which exposes large areas of sandbanks and mudbanks in Åkersvika at that time. Upstream snow-melt and rainfall replenish water levels again in the summer and autumn, when up to two-thirds of the Ramsar Site can consist of open water. Water levels can sometimes be low in autumn too. Among other things the system performs a valuable flood attenuation function.
- 2.5 The site is one of the most important staging Sites for migratory wetland birds in Norway. Highest numbers of shorebirds (waders) occur in April-May, when the exposed mudflats in particular support concentrations of a number of species, notably ruff (*Philomachus pugnax*), snipe (*Gallinago gallinago*), northern lapwing (*Vanellus vanellus*), Eurasian curlew (*Numenius arquata*), greenshank (*Tringa nebularia*), wood sandpiper (*T glareola*) and common sandpiper (*T hypoleucos*). Ducks, geese and swans are more numerous on autumn passage, with species including whooper swan (*Cygnus cygnus*), mallard (*Anas platyrhynchos*), teal (*A crecca*), wigeon (*A penelope*), tufted duck (*Aythya fuligula*), goosander (*Mergus merganser*) and others, and potentially internationally important numbers of pink-footed geese (*Anser brachyrhynchus*). The area also supports some breeding waterbirds. Floristic interest is high, with numerous species of conservation

- importance. Fifteen species of fish occur, including local forms of trout (*Salmo trutta*), grayling (*Thymallus thymallus*) and lamprey (*Lampetra fluviatilis/planeri*) which all spawn in the rivers.
- 2.6 Passage shorebird numbers have declined markedly in the past 20 years, reputedly due to reduced nutrient input in the two rivers, associated with a decline in livestock grazing in the surrounding areas; and possibly also linked to the “Mjøsa campaign” remediation in the 1970s-80s of eutrophication problems which had arisen in Lake Mjøsa in the 1950s-60s. Reduced grazing and cessation of burning after 1981 has also led to scrub succession in the marshlands, counteracted to some extent by locally introducing cattle and horses as part of the nature reserve management. Some scouring and deepening of the Flagstad river channel has apparently taken place over recent years, perhaps linked to greater fluctuations in water levels and/or a reduction in deposition of fine sediments.
- 2.7 Land and water-uses include agriculture and permit-based sport fishing. The site’s close proximity to the town of Hamar puts it in an area of significant pressure from development and infrastructure. The landscape is rich in archaeological sites (mostly burial mounds and graveyards), and the pattern of agricultural land-use is considered to have imbued the landscape itself with cultural significance.
- 2.8 Åkersvika was the subject of an earlier Ramsar Advisory Mission in 1989, when the Convention’s Secretary General paid a courtesy visit, against a background of concerns expressed by local NGOs about industrial and municipal developments potentially affecting the site. The brief report (No. 14) of the 1989 Mission is available on the Ramsar web-site at [http://www.ramsar.org/cda/en/ramsar-documents-rams/main/ramsar/1-31-112\\_4000\\_0\\_\\_](http://www.ramsar.org/cda/en/ramsar-documents-rams/main/ramsar/1-31-112_4000_0__) .
- 2.9 Conditions during the 2010 visit were not typical for the time of year. The winter of 2009-10 in Norway, as in other parts of Europe, had been unusually severe, with consequently increased energy demands on hydropower generation and hence lower than usual water levels in Mjøsa and Åkersvika in April. Snow and ice still covered much of the Site, spring was late arriving and the numbers of birds referred to above were not yet in evidence.

### **3. Overview of the E6 road development proposals**

- 3.1 Most of the existing E6 highway was constructed in the 1960s, with the Åkersvika section, which crosses the wetland from north to south, being completed in 1970 (i.e. prior to designation of the Ramsar Site in 1974). The Norwegian Parliament has now approved the upgrading of this road from two lanes to four, between Kolomoen and Lillehammer, in light of high-confidence predictions about future increasing trends in traffic volumes.
- 3.2 The portion of the Åkersvika section which runs through the southern part of the Ramsar Site, south of the E6’s junction with the east-west Rv 25 road, is effectively not a focus of this Advisory Mission, because the option there of widening on the existing route has effectively already been chosen.

Escalation/“call-in” of decisions for consideration by strategic national authorities, as has happened with the Åkersvika section north of the Rv 25, arises as a consequence of certain types of formal objections, which can include implications for implementation of international conservation obligations but is not automatic. Hence although the southern section holds the possibility of some impacts on the Ramsar Site, and it was objected to by the County Governor, the decision to opt for on-line widening there has effectively already been taken at local level, and in principle is not at issue within the scope of the RAM. (Some of the comments in section 10 below on compensation proposals however apply to both the northern and southern sections).

- 3.3 In the northern portion, several worked-up alternatives have been discussed in the course of the planning process to date; but at the time of the Mission, only two were regarded by the authorities as formally remaining in contention. These are:

“Alternative A”: This would involve widening on the existing road-line from a current width of approximately 10 metres to approximately 20 metres, with some associated other enhancements (noise barriers, bridge-strengthening etc);

“Alternative B”: This would have several ingredients, as follows:

- constructing a new embanked section of road between the Hamar and Vien intersections, arcing across farmland to the east and skirting the eastern boundary of the Ramsar Site;
- relocating the Vien intersection with the Rv 222 road (ie the one to the north of the Ramsar Site) slightly to the east of its current location, and re-routing a portion of the Flagstad river in that area;
- removing the existing line of the E6 through the Ramsar Site, and restoring wetland habitats on its former footprint.



Illustration of “Alternative A”

*Image: Asplan Viak AS, for Norwegian Public Roads Administration*



Illustration of "Alternative B"

*Image: Asplan Viak AS, for Norwegian Public Roads Administration*

- 3.4 Quite often in other cases of road development alternatives where there is concern about potential impact on significant environmental interests, there can typically be a choice between a "minimal disruption" option (on-line widening, for example) and a "bigger impact" option (opening up a new corridor, for example). The present case is less conventional, in the sense that the "bigger impact"/"new corridor" option involves removal of an existing road and hence the prospect of environmental gain in the area of its existing footprint. Hence "minimal disruption" in this case, atypically, may not be the environmentally preferable option. As will be seen below, however, each alternative has both positive and negative features.
- 3.5 A different option, referred to as "Alternative C", was put forward in 2009 by a local residents group (Åker og Ener Velforening) who had concerns in particular about the noise and other impacts on residential areas of Alternative B. Their proposal was to route the road further to the east of the southern portion of Alternative B (via a new tunnel under the residential area of Ridabu and a new bridge over the railway), and further to the west of the northern portion of Alternative B (to join the existing Vien intersection).
- 3.6 Although Alternative C is seemingly no longer formally in contention, its proponents drew the attention of the Mission to it. In the view of the transport authorities this option would be excessively costly and is unrealistic. The Directorate for Nature Management (DNM), while acknowledging that Alternative C, like B, offers removal of the existing road from the wetland, noted that the northern part of the proposal would cut a new road-line into the north-eastern corner of the reserve, and both for this reason and reasons concerning recreational use, considered that Alternative C is "a poorer option than alternative B". While fully acknowledging the strength of local residents' views about noise and other potential impacts of Alternative B, the Mission notes that Alternative C would involve loss of wetland habitat from the northern end of the Ramsar Site and hence supports the DNM's opinion on this option.

- 3.7 A further proposed alternative, referred to as “Alternative 6”, was also drawn to the Mission’s attention. This involved a longer diversion to the east of Ridabu, of both northern and southern portions of the Åkersvika section of the E6, thus taking it entirely out of both parts of the Ramsar Site. This too had been dropped at an earlier stage of the planning process, when the Public Roads Administration recommended that it should not be pursued further, given its cost and its expected impacts on agricultural land, on cultural heritage and on traffic density at Stange bridge and Vognveien. The conservation NGO NOF (Norsk Ornitologisk Forening/Norwegian Ornithological Society) has commented that in their view the rejection of this route was premature, while in response the Roads Administration stress that the decision was based on a proper assessment of planning implications and was supported by the County Governor of Hedmark and the Hedmark County Administration. DNM for their part indicated that Alternative 6 “would have been the best option in relation to the value of the nature reserve ... thus ending the current fragmentation of the Site”.
- 3.8 While not being in a position to comment on the propriety or otherwise of the process by which route alternatives have been sifted, the Mission notes and has no reason to disagree with the opinion of the national Ramsar Administrative Authority (DNM) that Alternative 6 would have been the best option in relation to the value of the Ramsar Site, with particular reference to the Site’s significance as one of Norway’s few remaining classic river deltas. (Such river deltas are under consideration as a possible priority nature type, or *utvalgt naturtype*, under the new Norwegian Nature Diversity Act – cf <http://elvedelta.no/index.php?aid=4188>). If circumstances arise in which this Alternative would continue to have some status in the planning considerations, it is likely that it would represent the most environmentally sustainable solution for the long term.
- 3.9 The grounds for rejection of Alternative 6 referred to above include the loss of agricultural land. This issue arises also in relation to Alternative B (see section 7 below), and the competing arguments adduced there, between policy imperatives for protection of agricultural land on one hand and policy imperatives for protection of ecological values on the other, would seem on the face of it to be equally in contention in relation to Alternative 6 (while of course the magnitude of each type of impact differs between the respective alternatives). Hence any doubts about the relative weight of the farmland protection policy as an argument against Alternative B could also be doubts about it as an argument against Alternative 6.
- 3.10 Thus (to oversimplify) if the deciding factor were to be conservation imperatives being seen to have greater weight than agricultural ones, and if this favours B over A, it may logically then in turn favour 6 over B. If the deciding factor were to be agricultural imperatives being seen to have greater weight than conservation ones, and if this favours A over B, it may logically then in turn favour B over 6 (since the latter involves even greater loss of farmland). If the deciding factor were to be comparative costs, and if this favours A over B, it may logically then in turn favour B over 6 (since the latter involves even greater cost).
- 3.11 Thus in addition to the merits of Alternative 6 in its own right, it is clear, as DNM also argues, that the relative merits of Alternative B are significantly affected by

whether or not Alternative 6 is taken into account. For example in relation to loss of farmland and to cost, it could potentially change from being seen as the worst case to being seen as a good compromise.

- 3.12 Good practice in assessment of scheme alternatives will often involve comparisons with a so-called “do-nothing option” or “null alternative”. It is understood that this received attention in some of the environmental impact studies, but information on the content of those considerations was not provided to the Mission (see 9.11 below). It seems clear however that a wealth of traffic forecasting data lie behind the overall E6 upgrading proposals, and they would be part of the context for such an assessment. The Mission was told that while a single carriageway road for the E6 in the Åkersvika area could continue to accommodate expected traffic volumes for some time, in the longer term, capacity limitations would become problematic. This seems reasonable; and experience elsewhere suggests that upgrading other connecting sections of the route could accelerate the process.
- 3.13 Given for example however that authorities at Hedmark County level raised objections to both Alternatives A and B, logically, “do nothing” was (at least at one stage) in principle a valid alternative to be weighed up. The eventual decision-making process should therefore include an adequate audit-trail of the reasoning used in considering the advantages and disadvantages of such an option.
- 3.14 It should be explained that the position referred to above arises from the fact that while the Hedmark County Agricultural Board objected to Alternative B, the County Governor’s Office, in a letter of 17 June 2008, raised objections in respect of both options. A subsequent letter from the Governor’s Office to the Ministry of the Environment of 30 March 2009 is described by DNM as recommending Alternative B on balance, taking all considerations together. The Governor’s Office disputes this DNM interpretation, preferring to reflect its position as saying only that Alternative A would “substantially reduce the special qualities of the reserve”, while in respect of Alternative B “compensation measures would largely compensate for the loss of some of the reserve’s special qualities”.
- 3.15 In addition to the County Agricultural Board (an elected body), all of Hedmark’s Members of Parliament also favour Alternative A, largely reflecting views in the farming community that is prominent in the area. Hedmark County Council however has not officially expressed any preferences or objections. At the municipal level (Hamar), both the officers in the municipality and a majority of the elected representatives also favour Alternative A (although the issue is divided along party lines too), and for the same reasons (i.e. an objection “in principle” to loss of agricultural land - see section 7 below).
- 3.16 In its letter to DNM of 21 August 2009, in relation only to comparisons between Alternatives A and B, the Ramsar Secretariat expressed support for Alternative B. In relation to that comparison, and without contradicting the comments above about Alternative 6, subsequent to the Mission this remains the general view of the Secretariat and of the Mission team itself.

- 3.17 Both Alternatives A and B are attended by proposals for compensation for lost wetland values, and this is discussed separately in section 10 below.

#### **4. Wetland restoration by road removal (Alternative B)**

- 4.1 As mentioned above, Alternative B includes the creative suggestion of removing the existing line of the northern portion of the Åkersvika section of the existing E6 highway, where it currently bisects the Ramsar Site between the intersections with the Rv 25 and Rv 222 roads respectively.
- 4.2 The Directorate for Nature Management came to the view in August 2009 that removal and restoration as proposed would be feasible, but has also asked the Mission to comment on this.
- 4.3 Removal of roads and restoration of wetland habitats on the roads' former footprint has many precedents around the world, although of course each situation is different, and past cases will not necessarily have any similarity with or relevance to the present one. Nonetheless, it would be wise to gather as much expert input from other experiences elsewhere that might be potentially relevant, in terms of the technical ecological aspects of such a venture. It is not within the scope of the present Advisory Mission to comment in detail on this; but it may be that the Convention could facilitate the circulation of requests for such input to specialists additional to those which Norway is able to identify, if required. Some preliminary consultations have been undertaken within the Convention's Scientific & Technical Review Panel (STRP) without generating any particular additional advice: to obtain substantive responses, more active and targeted consultations would be required.
- 4.4 DNM also recognises that removal entails additional costs and is not without its own risks. Some good confidence that it will be successful and beneficial is required. The Mission recommends, given the sensitivity of the ecosystem values at stake, that this component of the Alternative B proposal should be subject to its own specifically-scoped Environmental Impact (sub-)Assessment. This could be a fairly streamlined procedure, but should address the particular potential hydrological and nature conservation effects (both positive and negative) that may result, including temporary effects during the period of the removal work itself.
- 4.5 An important element of such a sub-assessment will be to collate whatever ecological, hydrological and topographical data (including aerial photographs) may exist for the Site from before the date of construction of the E6 on its present line (i.e. prior to 1970). This will help to inform the setting of restoration targets for the post-removal phase, in conjunction with whatever baseline data and targets already underpin the existing management plan for the Ramsar Site. Local conservation groups (predominantly NOF) may be able to help with this, including input from their national headquarters staff as well as the local volunteers in the area.
- 4.6 The process for setting appropriate targets/objectives itself should involve participation and open consensus-building among relevant stakeholders as well as the statutory authorities (see Ramsar Handbook 5, 3rd edition, *Participatory*

*skills*); and its outcomes will need to be integrated with the site management plan. (See also section 11 below).

- 4.7 During its visit the Mission queried whether total removal of the relevant stretch of existing road was the only scenario contemplated under Alternative B, or whether any “partial removal” options had been considered. One reason for this relates to cost. Bearing in mind the importance in the eventual decisions of the comparative costs involved with each of the route alternatives, any significant cost difference between total and partial removal could potentially affect the cost comparison between Alternatives A and B. In response, the transport authorities indicated that the costs of the removal element amounted to some 20-25% of the overall project costs for Alternative B (NOK 190 million), and hence varying the extent of removal would be unlikely to have a significant effect on the cost difference between the two alternatives.
- 4.8 The other reason for this question is an ecological one. Translated extracts from a DNM consultation response of 17 August 2009, provided to the Mission, refer to the proposed road removal in Alternative B “reducing fragmentation of the area and substantially improving its ecological function”; to the current bisecting of the Site by the E6 being “a situation the Directorate considers to be very undesirable, and which should not be continued”; and to retention of the current road (Alternative A) risking disruption of the ecological function of the Site.
- 4.9 Every intuition would support these statements; but it is important to have an understanding of the evidence on which they are based, concerning the real functional effects in this specific situation of habitat fragmentation in the Site, and the benefits of de-fragmenting it. This should make clear which elements of interest in the Site exhibit (or would exhibit) these effects.
- 4.10 As far as the Mission is aware, there are no particular studies in existence of the extent to which existing road/rail infrastructure serves as a barrier to water flows, to habitat usage or movements of birds, or the extent to which it creates a disturbance effect or causes direct mortality of wildlife; although there are anecdotal perceptions of these things. If any such data do exist, or could be gathered as part of baseline preparation for the target-setting process mentioned above, it will be important to gather as full a sense as possible of what they show before committing to the specifics of a particular removal plan.
- 4.11 The particular question as to total *versus* partial removal arises in the context of concerns about the trend in recent years of lower water levels in spring and faster outflow of water from the Flagstad river. (Exactly what locations and trend period this relates to however is not fully clear, since in relation to absolute water-levels at least, for the Mjøsa system overall, according to data from the water management authority (GLB), minimum spring levels have remained similar over the past two decades).
- 4.12 NOF’s representative suggested at one point during the Mission that, to some extent, the embankments of the existing road where it runs through the Ramsar Site may in fact perform a beneficial function in retaining higher water tables in the marsh areas. Ultimately it may be that, if successful, the proposals discussed further below for constructing water-retention bunds elsewhere in the

delta may address this issue in a more appropriate way (see section 11 below); but these are issues that again would be worth further investigation before committing to the specifics of a particular removal plan.

- 4.13 A further consideration is that, all other things being equal, leaving in place a linear embankment structure could (if not now then at some time in the future) prove to be a temptation for other infrastructure or development proposals to come forward and make use of it, in ways which are inappropriate in a Ramsar Site. An investment in road removal now could therefore be regarded as part of a suitable plan for safeguarding the area in the long-term, against potential pressures that may arise anew in future.
- 4.14 It is the Mission's understanding that ownership of land occupied by trunk road corridors in Norway is vested in the Directorate of Public Roads. If the section of E6 in Åkersvika becomes decommissioned and removed, a question would presumably then arise about transfer of ownership (and management control) of this portion of the Ramsar Site area.
- 4.15 Finally, in the event that Alternative B becomes chosen, it may be valuable for those charged with working up the details of the road removal/restoration plan in the Ramsar Site to frame this in conformity with the adopted global Ramsar guidance on wetland restoration (see for example the Annex to Resolution VIII.16, and Ramsar Handbook 15, 3rd edition, *Addressing change in ecological character*).

## **5. River re-direction at the Vien intersection (Alternative B)**

- 5.1 As mentioned above, one component of the proposals in Alternative B involves relocating the intersection between the E6 and the Rv 222 road at Vien (i.e. the intersection to the north of the Ramsar Site) slightly to the east of its current location, and re-routing a portion of the Flagstad river in that area. The re-routing would replace what is now a natural eastward meander of the river (and is currently in the location where the new intersection would be constructed) with an artificial westward meander of the same length (approximately 500m).
- 5.2 Although this is a relatively small venture in engineering terms, and is outside the boundary of the Ramsar Site, the Mission drew attention to the potential sensitivities involved. As a modification of a river which provides fish spawning habitat and a principal water inflow to the Ramsar Site, there are grounds for being especially careful to evaluate its potential environmental implications.
- 5.3 The substrate at this stretch of the river (material of glacial morainic origin) would appear to be comparatively stable and resilient, and risks of differential erosion etc would appear low. In addition to any provision during the construction phase for protection against accidental pollutant spillages, excessive sediment disruption, impacts on passage and spawning of fish etc, it would be advisable to undertake a small specific assessment of the *in-situ* and *ex-situ* environmental implications of this element of the scheme, including provision for ecological and physiological monitoring as part of post-project quality assurance.

## **6. Construction options for road widening (Alternative A)**

- 6.1 If Alternative A is selected, there are different ways in which the on-line widening could be constructed. DNM have asked the RAM to comment on whether widening is better done equally on both sides of the present centre-line, or by adding the new width only to one side or other of the existing line.
- 6.2 The Roads Directorate have a clear preference for widening on one side, since this will allow traffic to continue to flow along the same route while construction proceeds; and this is the basis of the plans and diagrams which have been drawn up. The Mission has no reason to object to the principle of this.
- 6.3 It is noted however that the proposal is for widening to be done on the west side of the existing line, since this is the side furthest from the residential areas of Ridabu at the southern end, where there are concerns about traffic noise. The Mission observes however that impact on some of the most valuable mudflat parts of the Ramsar Site and their birds is likely to be greater with widening to the west than it would be with widening to the east, so judged solely on that basis, the Mission would recommend widening to the east instead. While appreciating the noise issue, the difference in noise levels between these two methods as perceived by households in Ridabu appears unlikely to be hugely significant; whereas any unnecessary loss of mudflat or rendering of habitat unavailable to passage shorebirds could have an impact on the Ramsar Site that is more than trivial.
- 6.4 DNM also asked the Mission to consider whether there should be any preference from among a range of possible embankment profiles and support methods for the widened road sections. These included graded vegetated banks, pilings, boulder rip-rap and other configurations. The Mission sees no particular case for advocating one method over another in terms of their differential impacts on the ecological character of the Ramsar Site. In combination with other variables, such as treatment of runoff (see section 9 below), some methods may have more impacts than others, but without studying those aspects in depth, and the combination effects, it is not possible to comment further. The situation is likely to be one of tradeoffs; eg between poorer runoff and pollutant attenuation with the more “vertical” options; and more land-take of natural habitat (ie a larger corridor “footprint”) with the more “graded” options.

## **7. Loss of agricultural land**

- 7.1 High-productivity agricultural land is at a premium in Norway: only 3% of the land in the country is arable farmland, and only one third of this is capable of growing wheat, for example. Road developments are said to cause more loss of farmland (by area) than housing development does. Although not strictly an issue on which there are specific policy expectations under the Ramsar Convention, this is a prominent consideration in some of the decision-making balances being sought among the respective interests in this case. A strong local farming interest group has been among those helping to inform the stance adopted by local politicians.
- 7.2 These farming interests, and the Hedmark County Agricultural Committee, are opposed to Alternative B on the grounds that it will lead to a greater loss of agricultural land than Alternative A. (See however comments above on

Alternative 6, which if that were still to be in contention, would result in a greater loss than either A or B).

- 7.3 Different figures concerning the hectarages involved have been provided to the Mission. Their significance to farmers in relative terms is appreciated when seen against the background of the small national extent of arable land mentioned above, and the fact that the average farm size in Hedmark is 18.8 ha. All the figures provided however involve areas which, in absolute terms, are not large. One calculation presented for example shows a loss of 15.8 ha with Alternative B compared to a loss of 6.5 ha with Alternative A. To put this in perspective, the difference (9.3 ha) is roughly the same as the difference in defined area of the Ramsar Site caused by more accurate boundary delineation in the 1990s, which was regarded in that context as not sufficiently significant to constitute a change in the physical area of the site.
- 7.4 Discussion with a representative of the local landowners was instructive. There are said for example to be aspects of that group's objections which relate to the particular rotation system which relies on having a sufficient extent of land to enable the pattern of crop alternation (rye, barley, wheat, maize, onions, carrots, potatoes) and field resting over the years, indicating that the land parcel structure is important and implying also that below a certain (unspecified) minimum extent of landholding this would not be viable. Whether this threshold would be reached by the small losses under consideration with either of the proposed road alternatives, or whether other crop rotation configurations would be possible on the land that remains (the majority of it), was not clear.
- 7.5 The Mission asked about possibilities for compensating farmers for loss of land. There are indeed provisions that would make this possible. One arrangement used for example is for statutory authorities to undertake a voluntary buy-out of one among a group of farmers, then to allocate portions of that property to other farmers as compensation for losses of their own land to public-interest development. No assessment of the feasibility of this has been made in the present case.
- 7.6 The farmer consulted during the Mission (who acted as a spokesperson for the eight farmers potentially most affected by the E6 development) declared himself uninterested in any offers of compensation.
- 7.6 Norway's National Transport Plan 2010–2019 includes a number of adopted policy targets, to which close attention has been paid by the roads authorities in this case. These include Target M5, which is to "limit developments that affect ...cultivated land". It also however includes Target M4, which is a stronger imperative to "avoid developments that affect important areas of natural environment...". In the present case, where there is a potential conflict between environmental goals and agricultural goals, in the Mission's view it is significant that the adopted policy targets appear to give greater weight to the environmental goal.
- 7.7 Even more pertinent perhaps is the fact that in such a case of potential conflict, and if all other things were equal, the aim of protecting agricultural land is a

national interest imperative; whereas safeguarding the ecological character of a Ramsar Site is an international interest imperative.

- 7.8 Hence in summary, while the Mission's role on this issue may be limited to observations, we note (i) the small absolute scale of difference in agricultural land loss between the two route alternatives A and B; and (ii) the differential policy imperatives attaching to farmland protection and wetland protection. On these grounds it is very difficult to see loss of agricultural land amounting to a sufficient reason for deciding in favour of Alternative A. It appears that this is also the view taken by the Directorate for Nature Management.

## **8. Issues concerning the Ramsar Site boundary**

- 8.1 The alignment of highway E6 route Alternative B should be considered in relation to the eastern boundary of the Ramsar Site. Topography dictates that this route would have to pass between the Flagstad river and the foot of the slope to the east.
- 8.2 In the Administrative Authority's letter of 30 June 2009 to the Ramsar Secretariat, Alternative B is described as "largely outside the nature reserve". Since the reserve is said to be coterminous with the Ramsar Site, this raised two questions: (i) if the route is only "largely" outside and not "completely" outside it, what land-take if any from the Ramsar Site might actually be involved; (ii) if in other respects the line of the route has been determined on a basis of avoiding encroachment into the Ramsar Site, on what basis can there be good confidence that the line of that boundary is hydrologically and ecologically robust and correctly defined.
- 8.3 The Mission was not able to explore the second of these questions. Concerning the first, the southern end of proposed route B, immediately at the point where it would leave the intersection with the Rv 25 at Ridabu, appears to cross a small portion of the eastern side of the Ramsar Site, consisting of rough wet meadow, small creeks and a narrow belt of fringing woodland. The construction configuration of embankments/pilings etc here is not yet established, and the exact quantity of potential land-take from wetland habitats in the designated area is not precisely clear. (To the extent that this section will involve loss of habitat but not a boundary change, that has been considered as part of the rationale for proposed habitat compensation, which is dealt with separately in section 10 below).
- 8.4 For the purposes of the present section of this report, the question would be whether it would be the eventual intention of the Ramsar Administrative Authority (DNM) (a) to restrict the boundary of the Ramsar Site, to reflect the fact that its extent has been reduced on its outer edge, or alternatively (b) to consider that the defined outer ecological "envelope" of the area of interest remains unchanged, albeit that there has been a loss of some interest within that envelope.
- 8.5 Restricting the boundaries of a Ramsar Site is provided for under the Convention only in the most exceptional circumstances, and a number of tests and procedures would apply if this course were to be considered. In particular Article

- 2.5 of the Convention requires that a test of “urgent national interests” be met, in relation to the exceptional need for the action that will produce (or threatens potentially to produce) the change in ecological character that necessitates a boundary change.
- 8.6 A number of cases have produced elaborations of thinking on the “urgent national interest” test (see, for example, the report of Ramsar Advisory Mission No. 46 in 2001 concerning the Mühlenberger Loch Ramsar Site in Germany, the guidance adopted in Resolution VIII.20, and the information paper DOC.27 provided to the 10th meeting of the Conference of Contracting Parties in 2008 - all available on the Ramsar web-site, [www.ramsar.org](http://www.ramsar.org) ). Note that it is necessary to prove both the existence of a national-scale interest *and* the element of urgency.
- 8.7 It is not apparent at this stage whether the authorities would wish to restrict the Ramsar Site boundary if Alternative B goes ahead, nor on what basis, if any, an argument as to “urgent national interest” for the E6 development in this area might be mounted. Whether such an argument is justified would then also need to be examined. It is recommended that DNM clarify these matters at an early opportunity, in the context of the Ramsar requirements and guidance referred to above.
- 8.8 Boundary adjustments are sometimes proposed in contexts other than Article 2.5 and the urgent national interest. One is where it is not a question of loss of interest or loss of area, but rather improved precision of mapping. Another is a range of scenarios that may apply where the loss of interest is unavoidable (ie it is not the result of a deliberate decision) and is irrecoverable. Guidance and procedures on these situations are covered in Resolution VIII.21 (“*Defining Ramsar Site boundaries more accurately in Ramsar Information Sheets*”), Resolution IX.6 (“*Guidance for addressing Ramsar Sites or parts of Sites which no longer meet the Criteria for designation*”) and in the “*Explanatory note and guidelines for completing the Information Sheet on Ramsar Wetlands (RIS)*”, reproduced in Ramsar Handbook 14, 3rd edition, *Designating Ramsar Sites*. Any intentions in respect of any of these courses of action should also be clarified by the Norwegian authorities.

## **9. Other impacts/mitigation; and the assessment process**

- 9.1 The Mission acknowledges that a range of other types of impact from the different road proposals at Åkersvika are possible, and some were referred to in discussions during the visit. Some of these are beyond the scope of an evaluation of potential effects on the interests for which the Ramsar Site has been designated, and are thus beyond the scope of this report. For example, representations were received from local residents in close proximity to the southern end of the route of proposed Alternative B, where it can well be imagined that visual amenity, access, road safety, noise, air quality, property values and other issues are possible concerns. It is however not for the Mission to comment on these.

- 9.2 Other types of impact are more relevant to the ecological character of the Ramsar Site, but there has not been scope for the Mission to explore them in any depth. Some examples are mentioned in the following paragraphs.
- 9.3 Measures aimed at reducing noise impacts on local residents may be relevant also to reduction of disturbance to wetland wildlife, and this was referred to by NOF. (There are plans to install low noise barriers along the roadside).
- 9.4 Surface water runoff may have effects related to water quantity and quality, including contamination by oil and salt. It is planned to construct/enhance collection and treatment systems for this, but a range of different options is available (some more comprehensive, some less), and a choice between these options (and the proportional effectiveness of extra costs for the more expensive options) will depend on specific technical studies on this aspect. Liaison with the Ramsar Site management authorities on this would be advisable.
- 9.5 Contingency plans for accidental spillages of oil or other substances are believed to be in existence; but again specific liaison on these (in terms of the ecological dimension) between the Ramsar Site management authorities and the transport authorities would be advisable.
- 9.6 The same applies to winter surface de-icing treatments: alternatives to salt are available (magnesium chloride, a sand/water mix, etc), but each will have different costs and potentially different ecological risks associated with it; linked also to the arrangements for runoff control referred to above.
- 9.7 There have been no studies on direct collision mortality of wildlife on the existing road-line which could serve as a baseline for assessing the extent of any problem of this kind or monitoring trends in future. Although no particular concerns were raised about this during the Mission visit, there are again different construction options that could be considered (eg use of low-mounted LEDs on crash-barriers instead of overhead lights), and this may be worth some discussion among the authorities concerned.
- 9.8 The proposals for Alternative B include provision for two tunnel crossings under the road, with the dual purpose of allowing access by farm machinery to the downslope fields, and allowing free passage of wildlife (principally deer). The Mission offers no comment on the likely effectiveness of this, but local naturalists might have valuable knowledge on optimal siting etc, and may be worth consulting specifically on this. Ridabu residents cited the barrier to wildlife in their list of concerns referred to in 9.1 above.
- 9.9 It should be noted that the interests safeguarded by the Ramsar Site include not only hydrological and nature conservation values but also cultural values. These are relevant to the scope of the Convention's aims (see e.g. Resolutions VIII.19 and IX.21), and the presence of ancient burial sites is referred to in the updated Åkersvika Ramsar Information Sheet. The already-decided on-line widening of the southernmost section of the E6 where it runs south of the Rv 25 intersection is proposed to take place only to the eastern side, specifically to avoid encroachment on an area of archaeological significance on the western side. In addition, submissions from the agriculture authorities and the County Chief

Executive refer to potential impacts on the “integrity of the cultural landscape” from the road embankment in Alternative B, and impacts on archaeological interests along this route were also referred to by the Ridabu residents’ group.

- 9.10 Since the upgrading development plan for the E6 road section south of its junction with the Rv 25 has already been decided, it was not discussed during the Mission visit. There will however be road-widening works within the Ramsar Site here too, and some potential for impacts from these on the ecological character of the Ramsar Site. According to the DNM letter to the Ramsar Secretariat of 30 June 2009, these impacts have been assessed by the County Governor as being only minor in nature; but in its consultation response of 17 August 2009 DNM also referred to the road removal element of Alternative B in the northern section as providing compensation for these southern impacts, which suggests that they may have some significance. The true situation may be worth further investigation, given that when interests of international importance are at stake, every precaution should be taken.
- 9.11 It will be apparent that so far in this section of the report no reference has yet been made to an Environmental Impact Assessment (EIA) or Strategic Environmental Assessment (SEA) for the scheme, which might otherwise normally be expected to be the entry-point for any discussion of potential impacts and their avoidance or mitigation. Details of such assessments and their conclusions have not been available to the Mission, and the comments above have therefore been based instead on a synthesis of more anecdotal information.
- 9.12 It is understood however that a single EIA in some form does exist for the entire E6 upgrading scheme, i.e. all 140 km from Kolomoen to Lillehammer, with sections of the report/statement being devoted to the Kolomoen–Moelv section of the road and to issues in the Hamar/Åkersvika area. The statutory EIA system in Norway is modelled on that in the European Union’s legislation. A separate report from December 2007 on the natural environment was also referred to, and it is said to include a specific “interim” section on Åkersvika. Municipal plans containing an assessment of environmental impacts were also drawn up for the sections of the E6 that pass through Stange, Hamar and Ringsaker municipalities. At present the principal EIA exists in Norwegian only, and it has not been studied by the Mission team; so no comment is offered here therefore on its findings or its strengths and weaknesses.
- 9.13 The Norwegian authorities may wish, if they have not already done so, to review the EIA against the adopted Ramsar good practice guidance on EIA and SEA contained in the Annex to Resolution X.17, and other relevant international standards such as “*Biodiversity and environmental impact assessment: a good practice guide for road schemes*” (published by the UK Transport and Biodiversity Group), the “*Sourcebook on strategic environmental assessment of transport infrastructure plans and programmes*” (published by the European Commission), and the EU Directives on EIA and SEA. Additional questions to consider might also include what peer-review/stakeholder comments have been made on the assessments undertaken; and whether the fully up to date revised (2009) version of the Ramsar Information Sheet for the site was used as the official baseline description of the values at stake, rather than anything earlier.

- 9.14 It is understood that the proposals for habitat compensation within the Ramsar Site have not yet themselves been the subject of assessments of their potential environmental impacts. The Mission understands that this would be the intention at a later stage, when their details are further worked up and an overall “restoration plan” is compiled; but for the avoidance of doubt we recommend that this be addressed systematically at an early stage.
- 9.15 Although again the Mission was unable to explore this in detail, we recommend that thorough attention be given to the guarantees, conditions and safeguards to be applied to all environmental mitigation measures, and to the sources of assurance that can be obtained concerning their adequacy.
- 9.16 According to DNM, planning conditions in the case of a nature reserve cannot be applied through a zoning plan under the Planning and Building Act, but must be applied instead by the County Governor. Assurance should be obtained by DNM, as the responsible authority for Ramsar Sites, that the scope and robustness of these conditions will be at least as good as those that would otherwise be laid down in a zoning plan, and that they will be adequate for safeguarding the ecological character of the Ramsar Site. This should include assurance on the ways in which uncertainties will be managed.
- 9.17 Finally, an adequate post-project monitoring plan should be put in place. The scope of this should take into account the site values explained in the RIS, the vulnerabilities elaborated in the EIA, and all the mitigation measures and conditions adopted as discussed above. Such a plan may also be an opportunity to rectify key gaps in knowledge concerning the values, functioning, sensitivities and trends of the site. (A similar point is made in relation to the compensation proposals, discussed separately in section 10 below.)

## **10. Wetland compensation proposals**

- 10.1 A number of principles, requirements and guidelines concerning compensation for lost wetland values has been adopted by the Contracting Parties to the Ramsar Convention over the years. The starting principle is stated in Resolution VII.24, to the effect that “effective wetland protection involves the conservation of wetlands as a first choice within a three-step mitigation sequence, including avoidance, minimization, and compensation, the latter only as a last resort”.
- 10.2 The need to provide habitat compensation may arise in three types of “last resort” situation, as follows:
- (i) where the test of “urgent national interest” (Article 2.5) is met and the boundary of the designated area is changed (or the Site is de-listed);
  - (ii) where there is no “urgent national interest” but the boundary is changed (or the Site is de-listed) for one of the other limited reasons set out in Resolution IX.6 (see section 8 above); and
  - (iii) for any other unavoidable and irreversible loss of wetland functions, attributes and values (Resolution VII.24).

- 10.3 In relation to the first of these situations, Article 4.2 of the Convention provides as follows: “Where a Contracting Party in its urgent national interest, deletes or restricts the boundaries of a wetland included in the List, it should as far as possible compensate for any loss of wetland resources, and in particular it should create additional nature reserves for waterfowl and for the protection, either in the same area or elsewhere, of an adequate portion of the original habitat”.
- 10.4 Resolution VIII.20 on *General guidance for interpreting “urgent national interests” under Article 2.5 of the Convention and considering compensation under Article 4.2* includes the following (paragraph 4 of its Annex): “When invoking its right under Article 2.5 of the Convention in cases of urgent national interests, a Contracting Party should as far as possible compensate for any loss of wetland resources. When considering such compensation, a Contracting Party may take into account, *inter alia*, the following:
- 4.1 the maintenance of the overall value of the Contracting Party’s wetland area included in the Ramsar List at the national and global level;
  - 4.2 the availability of compensatory replacement;
  - 4.3 the relevance of the compensatory measure to the ecological character, habitat, or value of the affected Ramsar Site(s);
  - 4.4 scientific and other uncertainties;
  - 4.5 the timing of the compensatory measure relative to the proposed action; and
  - 4.6 the adverse effect the compensatory measure itself may cause.”
- 10.5 In relation to the second type of situation listed in paragraph 10.2 above, the Annex to Resolution IX.6 confirms that compensation expectations articulated in the other decisions and guidance mentioned here will apply, *mutatis mutandis*.
- 10.6 In relation to all three types of situation described, Resolution VII.24 on *Compensation for lost wetland habitats and other functions* records that the Conference of Parties:
- “10. URGES the Contracting Parties to take all practicable measures for compensating any loss of wetland functions, attributes and values, both in quality and surface area, caused by human activities;
  11. CALLS UPON Contracting Parties to integrate rules for compensation of wetland loss into their national policies on land and water planning; and
  12. ALSO CALLS UPON Contracting Parties to incorporate a preference for compensating for wetland loss with wetlands of a similar type and in the same local water catchment.”
- 10.7 Reference is made in the extract from the Annex to Resolution VIII.20 above to uncertainty. Since creation/conversion of wetland habitats is often difficult and imprecise, especially where there are fluctuating water-levels, mobile sediments, seasonal bird usage etc, compensation schemes would normally expect to include a substantial “margin of error” in terms of area provision and applicable safeguards, and to include all other possible steps to ensure an approach that is “precautionary”. There are always risks concerning eco-hydrological viability, and risks that artificially provided habitat will be of poorer quality than the natural habitat it is meant to replace.

- 10.8 One obvious way of building in such margins is to provide compensatory areas that are much larger than the areas to be lost. In one of the first cases where compensation for loss of part of a Ramsar Site was attempted, in Belgium in 1988, loss of 27.8 hectares from the Galgenschoor Ramsar Site was compensated by extending the Blankaart nature reserve by some 2,000 hectares.
- 10.9 One other general principle worth mentioning relates to the timing of works for providing compensatory habitat. In most cases it is prudent to commence compensatory measures in advance of the habitat loss and to delay or phase the loss until the actual times that land is needed, so that there is no net reduction in the carrying capacity of the system over an intervening period, and potentially also so that affected biodiversity interests have some opportunity to translocate. This also allows adaptation of the construction and management measures in the compensatory areas to be undertaken prior to the loss if necessary, e.g. in case of any failure of the new system/s to respond as predicted. Having said this, provision should also be made for adaptation of measures *after* the loss as well, in case the actual effects of the loss itself are different from those predicted.
- 10.10 Further discussion of some of these issues may be found in the Information Paper tabled at the 10th meeting of the Ramsar Conference of Parties in 2008 (COP10), entitled *Background and rationale to the framework for processes of detecting, reporting and responding to change in wetland ecological character* (COP10 DOC. 27). They are also explored in relation to a specific case, in the report of Advisory Mission 46 in 2001 to the Mühlenberger Loch Ramsar Site in Germany, referred to already in section 8 above.
- 10.11 Concerning the E6 road development at Åkersvika, compensation is being proposed in relation to the expected losses of wetland values associated with Alternative A, Alternative B, and the already-decided widening in the southern portion of the Ramsar Site south of the Rv 25 road. (The expected losses and the compensation proposed in response are different in each case; although there are some overlaps between the different proposals).
- 10.12 It appears that no precise details of what may be proposed have yet been worked up, and hence there are no specifics on which the Mission can comment. What exists are some indicative outline maps of small areas earmarked for possible wetland habitat enhancement or restoration close to the road corridor. These have been drawn up by the Roads Directorate.
- 10.13 Clearly some substantial detailed work on this aspect still lies ahead. There is an opportunity therefore to suggest that this could be approached as a chance to develop a model example of good practice in the Ramsar context. The starting point would be for the different relevant authorities, working together, to draw up an overall plan for mitigation, compensation and restoration that is designed on an explicit basis of following the established Ramsar principles, requirements, guidance and information referred to in the preceding paragraphs; including a full assessment of relevant risks and uncertainties.

- 10.14 As implied earlier, the plan should indicate the sequence of analysis that produces proposals for compensation, by progressively addressing impacts that can be avoided, impacts that can be mitigated, and designing compensation to respond to impacts that cannot be addressed in either of these ways (including an element to cover the precautionary margin of error in both avoidance and mitigation).
- 10.15 An analysis of options for compensation would then need to cover judgements about issues including (but not limited to) items such as:
- the criteria for selecting locations;
  - the criteria for selecting habitat types and management objectives (e.g. by reference to wider strategic wetland conservation priorities in Norway, as well as objectives relating to the interests of the Ramsar Site);
  - the geographical “area of search” within which locations might be identified, and its relationship to bird movements, fish movements, catchment hydrology etc;
  - the degree of like-for-like replacement;
  - methods for assessing feasibility/likelihood of success;
  - precautionary margins of error (the standard area replacement ratio used in high-significance road schemes in Norway such as this is 3:1, but that refers to a roads authority formula, and in this case should be supplemented by considerations relating to the remit of other authorities such as DNM);
  - water quantity and water quality needs assessments;
  - considerations relating to time-phasing, as discussed above;
  - impact assessment of the compensation measures themselves;
  - stakeholder consultation and technical peer-review;
  - the content of management agreements with individual private landowners, where necessary (i.e. in cases where they are not planning to transfer their land to public ownership for the purpose, although it is understood that at least some have already indicated they are willing to do so);
  - methods for delivery assurance e.g. through guarantees of long-term funding, sanctions for under-performance, monitoring and contingency plans, etc.
- 10.16 The “suggested areas for compensating actions” shown on the maps provided to the Mission appear to identify areas that are all already within the boundaries of the Ramsar Site. This is no doubt because at this stage they represent only the suggestions made by the Roads Directorate, and are therefore constrained to land areas in the general road corridor itself. It is presumed that others will put forward other suggestions to add to these in due course, and they are urged in doing so to bear in mind the issues flagged above, including “margin of error” area ratios and the “area of search” (in light of which, it is expected that the eventual plan will be considerably more ambitious in scope than the preliminary indications that were available at the time of the Mission visit). Among other things the Mission was told that there are areas currently outside the nature reserve that may already qualify for addition to it, on the basis of their existing values.

- 10.17 Whatever transpires on this front, however, an important point of principle is raised by any suggestion to use already-protected land as the source of areas for compensation. The Mission in general advises against this line of thinking, since in its view, such areas cannot properly be regarded as “compensation”. Such areas will not contribute any gain to the hectarage under conservation management, and the result will instead be an uncompensated net loss.
- 10.18 It is also not valid to argue that compensation through such areas is justified because it will contribute a gain to wetland *values*, even if not to wetland area. On the one hand if this changes the existing values in the designated Ramsar Site, then that would go against the purpose of its designation (and the obligation under the Convention) which is to maintain the site’s ecological character.
- 10.19 On the other hand if maintenance of the site’s character requires some management or restoration which the compensation is seen as being able to provide, then such management or restoration should already be factored in to the conservation objectives for the site, and should not have to depend on being “bought” at the expense of damage elsewhere. (To do so could rapidly establish a dangerous precedent that could be used - by others, in other cases - to hold Ramsar Sites to ransom as a bargaining tool for sanctioning undesirable developments). In other words if the measures envisaged are already seen to be desirable for the Ramsar Site, they should already be provided for within the Ramsar Site’s own management regime, and be independent of other developments.
- 10.20 Some of the maps provided distinguish between areas proposed as possible “areas for compensating actions” and those proposed as “planned areas for restoration”. Since both of these are indicated for both Alternatives A and B, and the “restoration” areas include more than just the removed road area in Alternative B, it is not clear what conceptual distinctions are being drawn between “compensation” and “restoration” in this context.
- 10.21 Compensation may of course in some circumstances validly consist of restoration of formerly lost wetland areas and values, as opposed to creation or enhancement beyond what has existed before. Restoration may equally well feature as a desirable management objective in itself, independent of any compensatory element. The rationale for intentions of this kind should be part of the plan suggested above, but since that point has not yet been reached, it would not appear to be the basis for the apparent distinction being made.
- 10.22 Whatever the case, it is almost certain that wetland restoration will feature in future at Åkersvika some way; and it will of course be a significant integral ingredient of the E6 road development if Alternative B is selected (i.e. by means of removal of the existing road). Adopted Ramsar principles and guidance on wetland restoration, as well as those on compensation, are therefore relevant and should be taken into account.
- 10.23 In a similar way as for the principles of compensation referred to above (and as emphasised for example in COP Recommendation 4.1, Resolution VII.17 paragraph 10, Resolution VIII.16 paragraph 10 and Resolution IX.6 Annex

paragraph 12), restoration or creation of wetlands cannot replace the loss or degradation of natural wetlands, and no matter how feasible restoration may be in a given case, when potential loss of natural wetlands is in prospect, the first priority is to avoid such loss. Once this principle has been satisfied in a given case, then practical guidance on restoration is available in the Annex to Resolution VIII.16, *Principles and guidelines for wetland restoration*. Relevant plans (and conservation management targets) for Åkersvika will also need to be informed by as much specific data and intelligence as possible on the ecological history of the site.

- 10.24 In the same way as for the mitigation measures discussed in section 9 above, an adequate post-project monitoring plan specifically for the compensation measures should be put in place. The scope of this should include the definition of triggers for corrective action in the event that monitoring reveals any actual or potential shortfall in the achievement of the intended results.
- 10.25 Even with the most conscientiously-controlled management and policy/legal safeguards, it is a fact that the E6 road development and its associated mitigation measures will constitute the introduction of new uncertainties to the ecological functioning of the Åkersvika Ramsar Site. In addition to the search for adequate physical habitat compensation solutions to offset the predicted impacts of the different route options, it would be appropriate to include some more strategic elements in the compensation equation. There will be more confidence in this equation balancing correctly if the opportunity is taken to strengthen the assured future of the site overall, by integrating any localised habitat manipulations into a broader package of measures which address the site's management needs as a whole.
- 10.26 Some of the issues that might be considered in such an integrated management approach to compensation are outlined in the next section of this report below.

## **11. Future management of the Ramsar Site**

- 11.1 It has not been part of the Mission's purpose to conduct a review of management and protection in the Åkersvika Ramsar Site, and there will be many issues lying well beyond what a mere two-day visit is equipped to perceive or comment upon. The Mission has instead focused on the choice of route options for the E6 road development and their implications.
- 11.2 These implications however include the options for compensating for loss of wetland values, as discussed in the preceding section of this report. Some issues concerning the management of the site were touched on during the visit (a few of them have already been mentioned in section 2 above); and some reference is made to them here specifically in the context of the idea suggested in the preceding section that the "compensation balance" being sought should include an integrated package of measures addressing the site's management needs as a whole.
- 11.3 The first point to make is that the Ramsar Parties have adopted guidance on site management, and specifically site management planning, principally in the Annex to Resolution VIII.14 on *New Guidelines for management planning for*

*Ramsar Sites and other wetlands* and Handbook 16, 3rd edition, *Managing wetlands* (2007). This should be used as a contextual framework for management at Åkersvika.

- 11.4 A management plan for the site was approved in 1989, and was revised in 1997. This has not been reviewed by the Mission, but assuming that the objectives it defines are appropriate and adequate, it will be very important for those objectives to be the guiding basis on which all mitigation, compensation, restoration, monitoring and contingency plans associated with the road development are designed and assessed. It is understood that the intention is to revise the plan again, once the decision on a route option for the E6 has been made. This will give an opportunity to fine-tune the adopted objectives, if necessary, to provide this guiding framework for all post-project measures in the most effective way.
- 11.5 Reference was made in section 2 above to the history and some continuing concerns about water-level management in the delta and the wider Mjøsa system, linked also with the reduced inflow of nutrients associated (among other things) with a general cessation of grazing in the surrounding areas; and the consequent effects on reduced numbers of migratory shorebirds using the site. One response to this has been a proposal for three “threshold dams” or bunds within the Ramsar Site, which would retain higher spring water levels in crucial mudflat and marsh areas in spring, preventing them drying out excessively and allowing invertebrates to be more available to feeding birds.
- 11.6 These proposals were first put forward in 1983, as suggested compensation for increased draw-down by the downstream hydro-power plant. The reasons why they have not yet been implemented revolve around difficulties in resolving tradeoffs between differential effects on the different biodiversity interests of the site (birds, fish, flora, etc). (The water volumes involved, in the shoreline shallows, are seemingly not sufficient to cause concerns for the hydro-power operators).
- 11.7 It is to be hoped that the revision of the management plan following a decision on the E6 will set out priorities in a way that will allow decisions to be made on the proposed retaining bunds, and allow progress to be made with their installation, as appropriate. Financial provision may need to be made for proper modelling, feasibility, waterbird monitoring and environmental impact studies associated with this; and doing so could be considered as part of the integrated compensation package suggested above.
- 11.8 It was curious to note that the easternmost bund is proposed to be located across a fairly broad channel-neck instead of the narrower opening under the road bridge slightly further downstream, as is the case with the northern bund. The reasons for this are not clear, and it may even be that positioning it under the bridge could assist in retaining better water levels for one of the “compensation” areas which is currently proposed in the same area; as well as possibly being cheaper. This is an example of the kind of issue that feasibility and other studies might address.

- 11.9 Another long-standing concern about the Ramsar Site is the loss of grazing marsh to succession by scrub, with consequent loss of value to waterbirds, following the cessation of livestock grazing as a general agricultural practice in the area some years ago. Some small-scale efforts to address this have been made at various times by introduction of grazing cattle and horses. Keeping of livestock in the general area is not an economically viable farming practice; and so its continuance in the Ramsar Site must be arranged as a specific nature conservation measure. Horses are easier to obtain and maintain than cattle in these circumstances. This may be another appropriate element to build in to a strategic package of compensation measures.
- 11.10 Other vegetation succession control measures in principle could include water-level management (in conjunction with the wetting-up proposals already described above), mowing and burning; though burning is currently prohibited under the agri-environment scheme regulations that apply in the area. Probably a combination of all of these practices may be required; and an integrated approach to modelling appropriate solutions could be another part of the compensation/management package, along with identified sources of funding for management payment incentives for private landowners and the costs of stock husbandry, fencing, mowing, etc.
- 11.11 Concerns have been expressed in general terms about the potential pressures that may affect the site by virtue of its close proximity to the city of Hamar. These (at different times over the years) have referred to water and sediment pollution (heavy metals, oil products and chlorinated hydrocarbons), a landfill site in Hamar, and continuing expansion of urban and peri-urban development. These might also be issues to consider in the revision of the management plan; and any appropriate safeguarding or remedial measures could be included in the E6 compensation package.

## **12. The Montreux Record**

- 12.1 The Norwegian Ramsar Administrative Authority (the Directorate for Nature Management) has asked the Mission to advise on whether the Åkersvika Site should be added to the so-called "Montreux Record" under the Convention.
- 12.2 The Montreux Record is a record of Ramsar Sites where changes in ecological character have occurred, are occurring or are likely to occur, and was established in 1990 by COP Recommendation 4.8. It is maintained by the Ramsar Secretariat in consultation with the Contracting Party concerned in each case.
- 12.3 The Record helps to bring attention to challenges faced by Contracting Parties in maintaining the ecological character of their Ramsar Sites, and is primarily designed as a problem-solving tool. (At times in the past it has unfortunately been seen in a negative light; but in fact is a potentially very positive form of assistance to Parties – see Resolution VIII.8 and COP10 DOC.27).
- 12.4 One of the actions that can result from listing on the Record is the initiation of a Ramsar Advisory Mission, in order to gather facts and make recommendations

with the benefit of specially commissioned experts and an international perspective.

- 12.5 In the present case, a Mission has been activated without first listing on the Montreux Record, and so this potential benefit of listing would no longer be a reason for doing so. In general, throughout the world, the Montreux Record is used in only a minority of the cases that properly merit it, and this has been cause for some concern in Ramsar circles. It could be said that it might in principle have been preferable perhaps for Norway to have volunteered listing of Åkersvika at an earlier stage; but this might be seen as an academic issue now, given that the Government has already positively moved to the step of inviting a Ramsar Advisory Mission and requesting its advice.
- 12.6 The question then is whether there might nevertheless be other benefits of Montreux Record listing at this stage. A similar situation arose in relation to the case of the Lake Natron Ramsar Site in Tanzania, where an Advisory Mission took place without prior listing on the Montreux Record, and the Tanzanian Government raised the same question (see RAM report 59, 2008, available on the Ramsar web-site).
- 12.7 Possible merits of Montreux Record listing in a case where a RAM has already taken place might include, for example, bolstering a country's political resolve to honour its Ramsar obligations in respect of the site. Listing could also be an appropriate way in which to "keep the file open" as context for following through on the Mission's recommendations, and perhaps for formal Ramsar interest to return periodically to the issue to keep abreast of progress. The existence of other potential pressures or negative trends affecting the site, in addition to the road development, might also strengthen the justification for listing on the Record.
- 12.8 As a formalised expression of the significance of the conservation planning needs facing the site, listing on the Montreux Record may also conceivably be of assistance within Norway in securing requisite funding streams for adequate compensation and management measures (including monitoring), as discussed in this report.
- 12.9 Norway had posed the question in the present case in terms of whether the threats to the site are sufficiently serious to merit listing. As will be seen from the paragraphs above, the issue does not really turn on the severity of threat, but rather on the practical utility of the mechanism in a given case, and/or conceivably on the degree of contentiousness between different stakeholder positions.
- 12.10 The comments in this section of the report are provided for information, and the Mission makes no recommendation on this issue.

### **13. Other issues**

- 13.1 In the course of discussions during the RAM, some wider issues of Ramsar Convention implementation in Norway were touched upon, which have some

relevance as context for decision-making in the specific case of the road development at Åkersvika. They are mentioned here for completeness.

- 13.2 In terms of the policy context, one measure traditionally urged upon Ramsar Parties as part of the implementation of Article 3.1 of the Convention (on the “wise use” of all wetlands) is to adopt a “national wetland policy” or equivalent. Norway’s National Report to the 10th meeting of the Conference of Parties (COP10) referred to a national wetland policy being in preparation at that time (2008); mainly it seems in relation to the application in Norway of measures modelled on the EU Water Framework Directive. It would be useful for the Administrative Authority at some stage to provide an update on the status of this initiative, and on its implications if any for the way in which the ultimate decision will be taken (by the Environment Ministry and the Government) on the E6 road case at Åkersvika.
- 13.3 Similarly, there was reference also in the National Report to wetlands being “a main issue” in the new “Nature Diversity Act” which at the time was expected to be approved. It would be useful for DNM to confirm the ways in which this might create legal backing for any of the particular recommendations in this Mission report. Countries vary in the extent to which Ramsar requirements are directly reflected in primary legislation, or given effect through analogous national systems expressed in different terms, or embodied at more subsidiary legislative levels (secondary legislation, sub-national statutes etc). There is always interest in documented case studies of such things, and a write-up of Norway’s particular approach would be welcome at any time.
- 13.4 It is re-emphasised here that the values at stake in every Ramsar Site are by definition international in significance; both in the sense of a common heritage of the most important wetland ecosystems in the world, and in the sense of the transboundary functional interdependence of systems such as (in this case) shared migratory waterbird populations. Mention has been made earlier in this report of the interplay between policy and legal imperatives which may reflect interests at different scales (local, national and international); and it will be most important for this to give full and clear recognition to the international dimension when the final decision comes to be made on the E6 road scheme.
- 13.5 The attention of the Ramsar Secretariat was drawn to Åkersvika by means of the procedure defined in Article 3.2 of the Convention for reporting cases of change or likely change in the ecological character of Ramsar Sites, described earlier in this report. Other sites which Norway has also reported in the same way include (at the time of COP10) Froan, Ilene/Presterødkilen, Kurefjorden and Øra. It may be convenient for DNM to take the opportunity of the dialogues which will follow submission of the present report to provide information on the current status of these cases.
- 13.6 In its national report to COP10, Norway referred to an investigation conducted by the Office of the Auditor General (Riksrevisjonen) in 2006 which concluded that management of most protected areas in the country, including Ramsar Sites, showed a “huge lack of effectiveness”. It is pleasing to note that following a period in which the majority of Norwegian Ramsar Sites have not had management plans, this is now being rectified, following a strengthening of

political attention to the resourcing and management of protected areas since 2008. Again an update on the progress with this work would be of wider interest.

## 14. Recommendations

### A. Appraisal of route options

- 14.1 If not already done, the Environmental Impact Assessment(s) for the E6 road upgrading development scheme should be reviewed against adopted Ramsar good practice guidance and other relevant international standards (examples mentioned in section 9 of this report); including a check on the completeness of stakeholder consultations, and verification that the most recent (2009) version of the Ramsar Information Sheet for Åkersvika was used as the definitive statement of the site's ecological values and its international significance.
- 14.2 The eventual decision-making process should include an adequate audit-trail of the reasoning used in considering the advantages and disadvantages of a "do nothing" option.
- 14.3 In making the final decision on the E6 road development scheme and weighing up the different local and national interests involved, it will be most important to give full and clear recognition to the fact that, by definition, the values represented by the Åkersvika Ramsar Site are of international significance.
- 14.4 The Mission considers, in line with the reasoning given by DNM in its recommendation in favour of Alternative B, that if there were to be a possibility of Alternative 6 re-entering consideration, this would be a preferred route in terms of minimising impact on the Ramsar Site. If the choice remains one only between Alternatives A and B, in line with the advice from the Ramsar Secretariat in 2009 the Mission considers that Alternative B is the better option in terms of impact on the Ramsar Site, given its association with removal of the existing road and rehabilitation of habitats within the wetland.
- 14.5 Concerning the re-direction of the Flagstad river at the re-located Vien intersection if Alternative B is chosen, in addition to any provision during the construction phase for protection against accidental pollutant spillages, excessive sediment disruption, impacts on passage of fish etc, it would be advisable to undertake a small specific assessment of the *in-situ* and *ex-situ* environmental implications of this element of the scheme, including provision for ecological and physiographical monitoring as part of post-project quality assurance.
- 14.6 DNM are urged to clarify at an early opportunity, in the context of the Ramsar requirements and guidance referred to in section 8 of this report, whether the authorities would wish to restrict the Ramsar Site boundary if Alternative B goes ahead, and on what basis, if any, an argument as to "urgent national interest" for the E6 development in this area might be justified. Any intentions concerning Ramsar Site boundary adjustments in the limited contexts other than Article 2.5 that are contemplated under the Convention (also described in section 8 of this report) should also be clarified.

### B. Mitigation and compensation

- 14.7 The different relevant authorities, working together, should draw up an overall plan for mitigation, compensation and restoration that is designed on an explicit basis of following the established Ramsar principles, requirements, guidance and information referred to in this report; including a full assessment of relevant risks and uncertainties and covering *inter alia* the issues listed in section 10 of this report.
- 14.8 It will be very important for the objectives in the Ramsar Site management plan (revised/expanded as appropriate in the revision of the plan due after the selection of road route is made) to be the guiding basis on which all mitigation, compensation, restoration, monitoring and contingency plans associated with the road development are designed and assessed.
- 14.9 Further consultations between the Norwegian Ramsar Site management authorities and the transport authorities are recommended specifically in relation to the ecological aspects of the various environmental impacts and mitigation options referred to in section 9 of this report.
- 14.10 Thorough attention should be given to the guarantees, conditions and safeguards to be applied to all environmental mitigation measures, and to the sources of assurance that can be obtained concerning their adequacy; including the status, scope and robustness of the applicable planning conditions in relation to safeguarding the ecological character of the Ramsar Site.
- 14.11 It would be wise to gather as much expert input from other experiences elsewhere that might be potentially relevant in relation to the technical ecological aspects of the road removal component of Alternative B, if this alternative is chosen. The removal works should be subject to their own specifically-scoped Environmental Impact sub-Assessment. This could be a relatively streamlined procedure, but should address the particular potential hydrological and nature conservation effects (both positive and negative) that may result.
- 14.12 DNM should collate whatever ecological, hydrological and topographical data (including aerial photographs) may exist for the site from before the date of construction of the E6 on its present line, to inform the setting of restoration targets for the post-removal phase if Alternative B goes ahead.
- 14.13 Assessments in relation to the road-removal element of Alternative B should also include gathering as full a sense as possible from any data on the functional effect of existing road/rail infrastructure fragmenting the ecosystem, e.g. serving as a barrier to water flows, habitat usage or to movements of birds, creating a disturbance effect or causing direct mortality of wildlife, as part of the basis for setting restoration objectives and before committing to the specifics of a particular removal plan.
- 14.14 The process under Alternative B for setting appropriate post-road-removal targets/objectives for the Ramsar Site should be transparent and should involve participation of relevant stakeholders; and its outcomes should be integrated with the site management plan.

- 14.15 In the event that Alternative B is chosen, it may be valuable for those charged with working up the details of the road removal/restoration plan in the Ramsar Site to frame this in conformity with the adopted global Ramsar guidance on wetland restoration.
- 14.16 It is expected that the eventual plan for compensation for unavoidable and irrecoverable wetland values should be considerably more ambitious in scope than the indications that were available at the time of the Mission visit (and which are acknowledged to have been purely preliminary at that stage).
- 14.17 The Mission advises against using already-protected land as the source of areas for compensation, for the reasons of principle and potential precedent argued in section 10 of this report.
- 14.18 If proposals for habitat compensation within the Ramsar Site do proceed, they should themselves be the subject of assessments of their potential environmental impact.
- 14.19 As with compensation, any measures for restoration of lost wetland values which are proposed as part of the overall scheme should also be designed on a basis of following the relevant established Ramsar principles and guidance referred to in this report.
- 14.20 An adequate post-project monitoring plan should be put in place, taking into account the site values explained in the RIS, the vulnerabilities elaborated in the EIA, and all the mitigation measures and conditions adopted. Specific monitoring of the compensation measures should be put in place; and the scope of this should include the definition of triggers for corrective action in the event that monitoring reveals any actual or potential shortfall in the achievement of the intended results.
- 14.21 The opportunity should be taken, as part of the “compensation balance” being sought, to strengthen the assured future of the site overall, by integrating any localised habitat manipulations into a broader package of measures which address the site’s management needs as a whole (including the examples referred to in section 11 of this report).
- 14.22 The compensation measures, linked to the revised management plan in an integrated package, might usefully include elements addressing financial provision for proper modelling, feasibility, waterbird monitoring and environmental impact studies associated with the proposed shallow water retaining bunds; further studies, financial provision and integrated plans for control of vegetation succession in the marshland areas; and appraisal/safeguarding/remediation measures required as appropriate in relation to water pollution and urban encroachment risks.

### **C. Other issues**

- 14.23 As a wider point for future consideration of the planning system in Norway, there would be a case for considering more automatic recovery to a higher authority of all planning decisions considered likely to affect recognised sites of national or

international nature conservation importance, without such recovery being dependent on specific objections being raised.

## 15. Conclusions

15.1 Ramsar Advisory Missions are, in essence, a process of collaboration between the Contracting Party concerned and the Convention Secretariat. It is hoped that this report will provide a valuable extra perspective in the process of planning and decision-making at the Åkersvika Ramsar Site and in relation to the E6 road development; both for the immediate decisions required and for longer-term wetland management goals. The report is but one step, and does not mark the end of dialogue.

15.2 A total of 23 recommendations have been provided (see preceding section), which among other things emphasise the Mission team's view that:

- It would be good practice to ensure a full audit-trail of appraisal of the costs and benefits of alternative development options for the E6 road, including the consideration given to a "do nothing" option, and reflecting adequately (in policy terms) the international significance of the Ramsar Site;
- If there were to be a possibility of the eastern Alternative 6 re-entering consideration, this would be a preferred route in terms of minimising impact on the Ramsar Site. If the choice remains one only between Alternatives A and B, Alternative B is the better option in terms of impact on the Ramsar Site, given its association with removal of the existing road and rehabilitation of habitats within the wetland;
- An overall plan for mitigation, compensation and restoration should be drawn up, following established Ramsar guidance, covering the issues listed in sections 10 and 14 of this report, relating to the site management plan, providing for post-project monitoring, and giving thorough attention to the guarantees, conditions and safeguards to be applied;
- It is inadvisable to use already-protected land as the source of areas for compensation. The Mission is of the view that the eventual plan for habitat compensation needs to be more ambitious than the preliminary indications given thus far.

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### **Annex A: Mission Team**

The Mission Team in the field consisted of:

- Tobias Salathé, Senior Advisor for Europe, Ramsar Secretariat;
- Dave Pritchard, Ramsar STRP and consultant to the Ramsar Secretariat (report editor)

### **Annex B: Mission programme**

The main programme of the Mission was as follows:

Thursday 8 April 2010

*Late morning:*

- introductions to the Mission by Heidi Sørensen, Deputy Minister in the Ministry of the Environment, Sylvia Brustad, County Governor in Hedmark, and Einar Busterud, Mayor of Hamar
- presentations by authorities and stakeholders, Statens Hus, Hedmark

*Afternoon:*

- field tour of locations along the proposed road routes and in the Ramsar Site
- media interviews
- further discussions with authorities and stakeholders, Statens Hus, Hedmark

*Evening:*

- dinner in Hamar with representatives of the Ministry of the Environment and the Directorate for Nature Management

Friday 9 April 2010

*Morning:*

- examination of questions raised by Mission team with regional and national authorities, Statens Hus, Hedmark

*Afternoon:*

- tour of further field locations
- meetings with local residents and farmers' representative



View west over Åkersvika from Sælid, with existing E6 road running left to right through trees.

*Photo: Norwegian Public Roads Administration*