



25 September 2013

[admin@appealsconvenor.wa.gov.au](mailto:admin@appealsconvenor.wa.gov.au)

Appeals Convenor  
Level 22, Forrest Centre  
221 St Georges Terrace  
Perth WA 6000

Dear Appeals Convenor

ROE 8 HIGHWAY EXTENSION  
GROUNDS OF APPEAL AGAINST EPA Report 1489  
BY THE URBAN BUSHLAND COUNCIL WA Inc. PO Box 326, West Perth WA 6872  
Tel 08- 9420 7207 [ubc@bushlandperth.org.au](mailto:ubc@bushlandperth.org.au)

### 1. Failure to apply Avoidance principle (principle of prevention)

The EPA states on p10 of its report:

*'Of fundamental importance in this assessment is the proponent's application of the avoidance and minimisation principles and the extent to which it has mitigated potential impacts on the environmental values identified by the EPA in Report 1088 and the key environmental factors identified in this report.'*

**1.1 Option 7 ignored:** The proponent has ignored the evidence and advice from its consultants as shown in Appendix D of the PER which examined 7 options for the location of the transport link and gave evidence that option 7 (on south side of Bibra Lake) was the preferred option. Option 7 would meet the EPA requirements of 'avoidance' of impacts on the Beelihar wetland ecosystem, as well as meeting the precautionary principle, the principle of prevention, and the principle of the conservation of biological diversity and ecological integrity.

The UBC submission on the PER raised this issue and the EPA has ignored this information in its advice. The EPA states in its summary and recommendations on page i that it may include in its report any other advice and recommendations as it sees fit, but it did not address the alternative transport routes in options 5, 6, 7 and their likely considerably lesser environmental impacts. The EPA has not considered the use of rail freight transport and the alternative of linking and upgrading the existing rail freight line as suggested in option 7.

**Outcome sought:** The Minister remits the report to the EPA and directs the EPA to assess the options 5, 6 & 7, and especially option 7.

**1.2 Roe Swamp:** As stated on page (iii), the EPA has not ensured that the proponent has 'avoided' impacts on the Roe Swamp ecosystem by taking an alternative route. Because of the high quality of the CCW wetland, vegetation and fauna habitat, impacts on Roe Swamp should have been avoided, (ie minimised to zero impact) and not just minimised to some degree. The proposed disturbance and indeed any disturbance to this intact system is an unacceptable impact.

**Outcome sought:** The Minister remits the report to the EPA for reassessment and advice strictly according to the objectives and principles under the EP Act.

## **2. Vegetation, flora and fauna: Failure to apply the principle of the conservation of biological diversity and ecological integrity**

There are significant environmental impacts of the proposal on vegetation, flora and fauna described by the EPA as significant 'residual' impacts. These impacts (listed below) on such high conservation value areas are reason alone for the EPA to have recommended that the proposal be rejected as environmentally unacceptable because it does not meet the principle of the conservation of biological diversity and ecological integrity. The EPA by failing to do this has therefore given wrong advice.

The EPA's recommended offsets and environmental conditions will not remove these residual impacts. There will be a significant net loss in values of a conservation area of local, regional, national and international significance. This is totally unacceptable.

### **'Residual' impacts**

- clearing of 97.8ha native vegetation
- clearing of 5.4ha Beeliar Regional Park
- clearing of 7ha of Bush Forever site 244
- clearing of 78ha foraging habitat for the listed endangered Carnaby's Cockatoo
- clearing of 73ha foraging habitat for the listed endangered Red-tailed Black Cockatoo
- clearing of 2.5ha potential nesting habitat for Black Cockatoos
- clearing of 6.8ha of EPP and CCW wetlands: in Roe Swamp, Bibra Lake, Horse Paddock Swamp;
- fragmentation of fauna habitat
- fragmentation of assemblages for priority fauna
- fragmentation of Swan Coastal Plain significant bird species habitat
- fragmentation of migratory bird and significant wetland bird species habitat

*Each one of these significant impacts on flora vegetation and fauna in critical assets listed by the EPA is unacceptable if the principles of environmental protection are applied according to the Environmental Protection (EP) Act. In particular the EPA has failed to apply the principle of the conservation of biological diversity and ecological integrity.*

**Outcome sought:** The Minister remits the report to the EPA for its advice consistent with strict application of the principle of the conservation of biological diversity and ecological integrity.

## **3. Inland Waters and Environmental quality**

### **3.1 Acid Sulfate Soils (ASS, PASS)**

The areas associated with Bibra Lake, North Lake, and Roe Swamp between Bibra Drive and Progress drive are high to moderate ASS risk. According to government policy ASS high risk areas should not be disturbed and must not be dewatered even temporarily. Any construction through such areas presents an unacceptable risk to wetland water quality in these high conservation value sites, and should be totally avoided according to application of the precautionary and prevention (or avoidance) principles. The EPA has failed to apply these principles in its advice.

This is a major failure as the EPA and the government has evidence from other projects where ASS soils have been disturbed and dewatered with very severe environmental damage by acidity and release of heavy metals: eg at Roselea Estate Karrinyup, and at Gwelup - Brushfield Main Drain leading into Lake Gwelup in the City of Stirling. The adverse changes to soils and water quality, deterioration of ecosystems, groundwater, wetlands and watercourses is well documented in Planning Bulletin 64 (November 2003) and by DEC hydrology staff (Steven Appleyard et al in ASS workshops). Many Gngangara wetlands have been degraded or 'killed' by acidity.

The EPA has recommended a condition of no dewatering (ie wet) construction techniques but any soil disturbance and excavation of ASS areas also presents a risk. Given the critical asset status of the Beeliar wetlands area and the interconnectedness of all the wetlands, the EPA by applying the principle of prevention and the precautionary principle should have recommended avoidance of all these ASS areas. If acidification occurs, the impacts are irreversible and wetland water quality downstream could be irrevocably damaged with destructive impacts on phytoplankton, invertebrate and vertebrate fauna. Has the EPA and the

Minister for the Environment not learned anything from the horrendous damage to the areas surrounding the mouth of the Murray River at Yunderup?

**Outcome sought:** The Minister remits the report to the EPA for revision such that risk of disturbance or dewatering of high and medium risk ASS is not possible by strict application of the principle of prevention and the precautionary principle. *ie* revision such that there is no construction in areas of medium and high risk ASS.

### 3.2 Construction techniques

There is no evidence that the construction techniques of avoidance of excavation below the water table and preparation and implementation of an ASSMP and CAMP (p13 EPA Report) in the event of 'unavoidable' ASS exposure will prevent damage. There is insufficient evidence of the location and complexity of the water table as groundwater monitoring work was done after an exceptionally dry period and at least 10 years of monitoring data is required to establish baseline conditions. Thus it would be easy for excavation below the actual water table (in an area of complex stratigraphy) without even recognising so.

Further the consultants (VCSRG) report to the proponents has stated that the impacts of construction of pylons and the road on soil structure and groundwater flows are not known and cannot be predicted. Therefore the precautionary principle should be applied to this uncertainty and lack of evidence. The EPA has not done this.

### Outcome wanted

Failure of the EPA to recommend total avoidance of all areas of ASS risk is a fatal flaw in their advice and in this Roe 8 extension proposal.

There should be no construction or disturbance whatsoever in areas of high and moderate ASS risk.

We recommend that the Minister rejects the proposal or at the very least remits the report to the EPA for revision of the proposal so that all ASS sites are completely avoided.

### 3.3 Road runoff

Road runoff with added nutrients and petroleum products will eventually reach the Beelihar wetlands via drainage basins or more directly in high rainfall events. Disturbance from construction of infiltration basins and invasion of weeds is inevitable. Pollutants will inevitably degrade water quality over time. These impacts are unacceptable for critical environmental assets.

## 4. Hydrological processes

The EPA states on page 17 that the following are key environmental issues:

- alterations in the groundwater regime and wetland water levels from groundwater abstraction during construction
- potential for the road structure to interrupt groundwater and surface water flows, including the hydrological connections between wetlands

**4.1 Groundwater Dependent Ecosystems (GDE)** The impact of construction and the presence of the road on groundwater flows are not known and cannot be predicted (Syrinx and Semeniuk 2001).

Groundwater flows and storage are influenced by the stratigraphy which is extremely complex and variable along the proposed construction envelope and changed groundwater flows cannot be modelled.

The EPA has been given additional advice by the proponents (AECOM 2013) as a result of public submissions. The proponent considers that the compaction may cause up to 10m wide impacts on GDE due to changes in hydrology either side of the construction zone along 1.4km between Bibra Drive and Progress Drive. These are assertions only by the proponent and there is no scientific evidence for this. The EPA has accepted this unsubstantiated advice and even expects that there will be no detectable impacts on the health of vegetation communities without any evidence to support this position.

**4.2 In condition 10**, the EPA recommends monitoring and implementation of contingencies if changes are detected. Monitoring will not correct any damage as it will have already been done. This assessment is thus flawed and should be rejected. There is no evidence to predict the impacts on GDE and therefore condition 10 is invalid.

**4.3 Abstraction:** There does not appear to be any evidence presented to support the 1.5km distance from the wetlands for abstraction of groundwater for construction purposes. Abstraction from the upstream side will inevitably have an impact on surface groundwater water levels

**Groundwater abstraction:** The condition of no groundwater abstraction during construction is supported. Monitoring of groundwater levels is essential but it must be done in the context of at least 10 years of data from the same points. This data does not yet exist.

## 5. Flora and vegetation

The EPA states that, despite the modifications to design and construction proposals compared with the 2003 proposal, there will still be 'significant impacts on flora and vegetation' with the current revised proposal. This is unacceptable.

**5.1 Clearing:** A total of 79ha of native vegetation + 18.8 ha of planted vegetation along embankments will be cleared. This is a major impact of clearing in interconnected wetland and associated upland ecosystems and is in itself unacceptable for conservation lands as it breaches the principle of biodiversity conservation and ecological integrity. The EPA has failed to apply this principle.

Complete removal by clearing of the BAHS Low open forest of *Banksia attenuata* and *Banksia menziesii* (page 26) is unacceptable. It should be noted by the EPA that this community is one of the set of Banksia Woodlands of the southern Swan Coastal Plain which have been nominated as a TEC under the EPBC Act, and are to be/are being assessed in the current round of assessments.

### 5.2 Flawed analysis of vegetation communities

The flora studies have not been adequately analysed according to all the latest data and reports available from DEC. AECOM (2011) failed to consider essential information contained in the System 6 and Part 1 Update (Department of Environmental Protection, 1996 and 1998-2000) that became available after Gibson *et al.* (1994) was published. AECOM (2011) assessed the vegetation units in the Study Area against the Gibson *et al.* (1994) regional dataset ONLY. Therefore the analysis was carried out against only the FCTs (1a - 30c), as documented in Appendix E (AECOM, 2011). In the DEP (1996 and 1998-2000) updates, several supplementary FCTs of the Swan Coastal Plain were identified and several of these have since been listed as Endangered under the Federal EPBC Act. One of these Supplementary FCTs bears a striking floristic resemblance to the vegetation of Roe Swamp. This FCT is:

**Floristic Community Type S17:** *Eucalyptus rudis*- *Taxandria linearifolia* (= *Agonis linearifolia*) wetlands in Bassendean Dunes. FCT S17 is listed in Table 6, page 29, Volume 2 of the Bush Forever Report (Government of Western Australia (2000) as Rare in the Perth Metropolitan Region. It is recognised as one of the Seasonal Wetlands Group of FCTs. Indicator species include the two listed Priority Species *Cyathochaeta teretifolia* (P3) and *Tetraria* sp. Chandala G J Keighery 17055 (P2), *Aotus cordifolia*, *Baumea rubiginosa*, *Baumea vaginalis*, *Cyclosorus interruptus*, *Gastrolobium ebracteolaum* and *Taxandria linearifolia*.

Roe Swamp includes most of the otherwise regionally uncommon, plant species that are associated with the Mound Spring TEC, all together in one swamp. Only *Hibbertia perfoliata* and *Cyclosorus interruptus*, found in some (but not all) of the mound spring occurrences are absent from the vascular flora of Roe Swamp.

### 5.3 FCT S17 is also currently listed as a Threatened Ecological Community (Endangered) under the EPBC Act as: *Assemblages of Organic Mound (Tumulus) Springs of the Swan Coastal Plain*

Because of inadequate analysis of survey data collected, the EPA has not considered this very significant information and likely evidence of an EPBC listed TEC.

**5.4 Missing evidence:** The aquatic invertebrates and stratigraphy /hydrology of the centre of Roe Swamp were not surveyed (Phoenix Environmental Sciences 2010; Syrinx and V & C Semeniuk Research Group, 2011) due to (respectively) very dry weather and the lack of permission to drill in central parts of the wetland due to indigenous issues. There are however initial indications from Phoenix Environmental Sciences (2010) and Syrinx and V & C Semeniuk Research Group (2011) respectively, that Roe Swamp includes deep peat layers and exists within a complex stratigraphic/hydrological setting (at the interface of the Bassendean Dunes and Spearwood Dune limestone) where groundwater mounding may be present.

## 5.5 Wetland communities (p26-28)

Clearing of 0.95ha EPP Lakes (Bibra Lake), and 5.8ha CCW (Horse Paddock Swamp and Roe Swamp) are totally unacceptable impacts and the EPA should advise against this according to the principle of conservation of biodiversity and ecological integrity and its own policies. Of particular concern is the EPA failure to ensure protection of Roe Swamp and to advise against clearing of 5.6ha and severance of this intact ecosystem in excellent condition. This disturbance will inevitably cause further degradation outside the 5.6ha clearing envelope and this has been ignored.

### Outcomes sought

**1. Likely Mound Springs TEC present at Roe Swamp:** Further detailed and comprehensive survey by suitably experienced botanists and biologists of the Roe Swamp ecosystem for flora and including Mound Spring communities of flora, invertebrate fauna (including relictual invertebrates) and plankton be carried out over a full season 2014 at least.

Detailed survey by VCSR and Syring of the stratigraphy and hydrology of the centre of Roe Swamp be carried out, with special focus on locating surface springs and their associated communities.

Notably the EPA assertion on page 30 that 'no vegetation communities are considered to be a PEC or TEC' is wrong. Likely presence of a very significant Mound Spring TEC means that the EPA advice would have to change to state that the EPA objective cannot be met for this factor.

**2.** The existing flora survey data by AECOM for the whole site be analysed for FCTs again using all context information available from DEC/DPAW and in consultation with DPAW botanists.

**3.** The EPA should review the richness of the FCTs and flora and vegetation communities at Roe Swamp, which is clearly a critical asset to be protected.

**4.** The EPA should review its assessment of the above and should recommend that the proponent revise its location of the transport corridor so that there is no crossing or incursion into any part of the intact Roe Swamp wetlands and its associated upland vegetation communities. Any incursions into the Roe Swamp ecosystem, a critical asset, is environmentally unacceptable according to EPA policy, and cannot be 'offset' or 'counterbalanced' by restoration works at other sites. It is nonsense for the EPA to justify significant unacceptable impacts on a critical wetland asset by recommending offsets (p28). Indeed this is contrary to offset policy where avoidance is the only course of action for top quality wetland conservation areas.

## 6. Terrestrial Fauna

### 6.1 Failure to protect habitat of 2 species of endangered Black Cockatoos

The EPA advice to allow clearing of 78ha of Carnaby's foraging habitat and 73 ha of Forest Red-tailed Black Cockatoo foraging habitat is a failure to observe the principle of **the conservation of biological diversity and ecological integrity**. Further the EPA (p33) states that clearing will cause the loss of ~249 significant trees which are potential future nesting habitat.

It is well known that Black Cockatoo populations are declining rapidly and that loss of habitat is the main reason. The EPA advice ignores and is contrary to the DEC/DPAW/WA Museum advice and Recovery Plan for these species. The recommended offsets will not add any additional habitat at the time of clearing and there will be a net loss of habitat.

Further a major road through Cockatoo feeding habitat will increase the risk of road strike. The EPA has recognised road strike risk but only concerning the avoidance of revegetation of cockatoo forage species within 10m of roadsides.

**Outcome sought:** The Minister should remit the proposal to the EPA and the proponent for revision of the location of the transport corridor and in particular to consider the impacts of option 7 as above where such a large area of clearing can be avoided.

### 6.2 Incorrect bird data

The Wetlands Conservation Society has collected bird species data over many years. The site has very high biodiversity and at North Lake they have recorded more than 140 species, not just 83 species quoted on page 32.

On page 34 only one waterbird species is mentioned, while the site is habitat for many of the more common species.

### **6.3 Rainbow Bee Eater**

On page 34 the EPA dismisses the loss of habitat for the Rainbow Bee Eater even though it is a nationally listed migratory species which breeds in the North Lake Reserve. The EPA has ignored evidence published in Wynton Maddeford's book on the birds of North Lake which supports the importance of the site for breeding habitat of this migratory bird.

### **6.4 Short Range endemic species**

The EPA has made assumptions about these invertebrate species without any evidence and has even assessed the significance of losses without any evidence. Such advice is worthless and should be ignored. Indeed surveys of invertebrates should be carried out as they are an essential part of intact and functioning wetland and dryland ecosystems.

### **6.5 No evidence for fauna underpasses**

The EPA has accepted an assurance from the proponent that fauna underpasses will maintain fauna linkages. No scientific evidence is presented to support this assertion. Underpasses are classic sites for foxes to wait for prey. Also the EPA has failed to address the City of Cockburn's comments on this assertion. The EPA has not observed the precautionary principle here and has not sought advice independent of the proponent.

### **6.6 Fragmentation impacts**

The EPA notes the excellent quality and species richness of vegetation assemblages and linkages in and between wetlands and uplands of 3 major systems: the Bassendean Dunes, Spearwood Dunes and the wetland complex. Yet the significance of the impact of severance and fragmentation of these interconnected systems by the road is reduced to the words '*it will probably impact on rich and diverse assemblages*'. The EPA (also supported by DPAW) suggests on page 35-36 that '*consideration be given to expanding the span of the bridge further west at Roe Swamp*'. The EPA's condition recommended, however, does not specify extension of the bridge span. Discussion on page 36 slips into design of underpasses, ignores the extension of the bridge and justifies the impacts of fragmentation by requiring an offset. DEC advice was for the bridge to be extended over the whole of Roe Swamp and this has been ignored.

**Thus the EPA advice has again not observed the basic EPA principles of prevention and avoidance, and the principle of the conservation of biological diversity and ecological integrity.**

**Outcome sought:** If the road must be built in this location, the bridge should span *the whole wetland area*, not just parts of it. Notably this was the preferred option given at the community consultation workshop that UBC representatives attended, and this has been dismissed by the proponent as too expensive. The EPA should have insisted on consideration of this variation. The Minister, on environmental grounds, should remit the proposal to the EPA for this variation to be considered. Economic and cost grounds are not relevant considerations under the EP Act, and the Minister must consider his actions and decisions according to the objectives of the EP Act to protect the environment.

## **7. Noise and amenity**

Light spill affects nocturnal wildlife and noise and vibration will disturb reclusive birds, such as crakes and rails which have been observed in the North Lake Reserve. The EPA has accepted, without any evidence, the assertions from the proponent to the contrary rather than information from bird experts and community organisations that monitor birds.

The impact of noise on people attending the Cockburn Wetlands Education Centre and on all the courses and training and activities held there both indoors and outdoors has not been considered.

Noise and lights will also affect wildlife. Social amenity value in passive recreation will also be affected. The proposed walls may reduce some noise but will certainly not remove it and amenity values will be diminished.

## 8. Offsets

Offsets should be 'like for like' but these are not specified as a condition in the report. Also the ratio should be much greater than 3:1. The Commonwealth SEWPAC under the EPBC Act set a precedent of 10:1 for the Fiona Stanley Hospital site.

The Offset package proposed will not result in a net environmental benefit.

Loss of high conservation value, intact wetlands of Roe Swamp cannot be offset by definition - there is a net loss of values and ecosystem function and this is contrary to EPA objectives so the EPA advice should be amended accordingly. Loss of any of Roe Swamp is simply environmentally unacceptable and the proposal should be changed to avoid this area.

Government policies provide that offsets are not intended to make proposals with unacceptable impacts become acceptable. Making unacceptable impacts appear acceptable with offsets is what the EPA has done and we strongly object.

Considering the offsets proposed: the EPA has ignored the advice from DEC about size, quality and location of offsets required. Instead the EPA has recommended smaller offsets. Worse still, the EPA proposes double counting of offsets for wetlands and cockatoo habitat (p 42, 43). This is totally unacceptable and must be changed. Even more disturbingly, the EPA on p 41 says that degraded land could be used for the offset if the proponent could not find land of the same or better quality. This is contrary to offsets policy, DEC advice, and indeed makes a mockery of the whole concept of offsets. Given that it is arguable that the concept of offsets is flawed from the outset, this proposed use of the offsets policy reduces its credibility to a farce.

The EPA's role is to give independent environmental advice based on scientific evidence and sound advice from relevant government agencies (DEC, DOW, Cities of Cockburn and Melville, SEWPAC) rather than political desires of the government or Main Roads.

The offsets for clearing of Black Cockatoo habitat do not deliver any new feeding habitat to replace the food resources cleared. Purchase of bushland already in existence is not new habitat, and any revegetation with forage plants will not provide any new food for at least 20 years after planting. So to be effective these areas need to be established 20 years before any clearing takes place. Therefore the offsets proposed for Cockatoos are invalid. The proposal should be changed so that there is no net loss of Black Cockatoo habitat for both species.

## 9. CONDITIONS

**9.1 Omitted condition:** The need to extend the bridges to avoid fragmentation (p35) has not been included as a condition even though the EPA recognises this need. This is a very serious omission and it needs to be included. Fragmentation is one of the most serious impacts of this proposal.

**Outcome sought:** A suspension bridge over the whole wetland/upland area (no large pylons in the wetland/bushland zone)

OR shifting of the transport corridor to the south of Bibra Lake with upgrading of the existing freight railway line. This would avoid most of the environmental impacts.

9.2 It is not acceptable to include roadside revegetation as an offset as it may be cleared later when the road is widened. Also revegetation of roadsides and batters is an operational requirement anyway, so it is not an additional area of revegetation, and is therefore an invalid offset and should be replaced with another suitable site not already controlled by the proponent.

9.3 Main Roads has a history of avoiding Ministerial conditions for revegetation - eg at Roe 7 and parts of the Kwinana Freeway south of Roe Highway have never been adequately revegetated. It has failed to provide a suitable offset for damage to Folly Pool. Thus we have little confidence that Main Roads would properly complete the offsets package, inadequate as it is. It is unacceptable for Main Roads to be using MRIF funds from the WAPC to fund their offset package. Indeed it is galling to us (and the public good) for this possibility in the face of reluctance of the WAPC, under instructions from the government, to be properly funding the acquisition of Bush Forever sites with the MRIF.

9.4 There are 10 pages of environmental conditions specified in Appendix 4. These are strict conditions that require ongoing monitoring and regular independent auditing. Which agency will do this and is there adequate government funding for this process? What action could be and will be taken for non-compliance? What source of funding will the proponent Main Roads use for all the work required to comply with conditions? It is not appropriate that MRIF funds are used.

9.5 Drainage condition 8-1, and wetland conditions 9- : If groundwater quality is not maintained and it changes with for example increased acidity, or increased nutrients and pollutants, remediation may not be possible. There is likely to be changes in groundwater and surface water quality over time, but once the road is built nothing can be done to reduce pollutants or acidity.

## **CONCLUSION**

The Urban Bushland Council concludes that the project is not environmentally or socially acceptable in its current form. The EPA report includes some serious errors in logic where the advice does not fit the evidence and is inconsistent with the EPA principles of biodiversity conservation, the precautionary principle, the principle of prevention and intergenerational equity. The proposed environmental conditions while seemingly strict will not protect the extensive environmental values of the site. Therefore the project proposal should be rejected.