11 January 2017

By post and email: **@environment.gov.au**

Dear Sir

ROE HIGHWAY EXTENSION – Ministerial Statement 1008 and EPBC Act Approval 2009/5031 – Request to halt or stop the work until issues raised are resolved

We are an interested party in the EPBC Approval 2009/5031 **(2009/5031)** and subsequent bilateral approval under the Western Australian Ministerial Statement 1008 (**MS 1008**) for the Roe 8 Highway Extension Proposal (**Roe 8 Project**) having been a formal party in the recent WA Supreme Court case concerning the validity of the MS 1008 approval.

We wish to bring to your urgent and immediate attention the matter of several potential breaches of the conditions of MS1008 and 2009/5031.

We request that you take action to immediately halt work on the Roe 8 project until these are resolved.

We are concerned that work on this project, which commenced on Monday December 5 2016, is being undertaken unlawfully due to non-compliances of the environmental management plans associated with the project, which are conditioned under 2009/5031 (bilateral approval) and MS1008.

We have reviewed the following plans; the Fauna Management Plan (**Fauna Management Plan**), Land Acquisition and Management Plant (**Land Acquisition Plan**), which details the offsets proposed for the Roe 8 Proposal, and the Construction Environmental Management Plan (**Construction Plan**), to ensure there is scientific evidence that the legal conditions contained within are being met.

We draw your attention to the finding of Chief Justice Martin in *Jacob v Save Beeliar Wetlands (Inc)* [2016] WASCA 126 (which finding was not appealed or overturned in *Jacob v Save Beeliar Wetlands (Inc)* [2016] WASCA 126) that the *substance* of the plans is *unequivocally* established in the conditions of MS 1008 as set by the West Australian Minister for the Environment. This means that Main Roads of Western Australia as the proponent (**Proponent**) has no ability to seek to exercise any discretion about any substance of the management plans, either by way of delaying or minimising the required content of, the plans.

In summary the non-compliances we have identified within the management plans include (but are not limited to):

(a) A breach of condition 11-2 of MS 1008 as the details of the furniture within the fauna underpasses is not provided in the Fauna Management Plan;
(b) A breach of condition 11-2(5) of MS 1008 due to a lack of appropriate monitoring protocols to measure the success of the trapping and translocation program;
(c) A breach of condition 11-2(7) of MS 1008 as there is no evidence provided to ensure fauna are not adversely impacted by noise.
(d) A breach of condition 11-3 as the current exclusion fencing does not meet the requirements of the Fauna Management Plan.
(e) A breach of condition 11-1, 11-2 and 11-3 of MS 1088 as identified at sections 2, 3, 4 and 5 of this letter;
(f) A breach of conditions 12-3 and 12-4 of MS 1008 as described at section 6 of this letter;
(g) A breach of conditions 7-6. 7-7 and 7-10 of MS 1008 as described at section 7 of this letter.

We request that you investigate all the identified non-compliances with MS 1008 and 2009/5031 and the errors and inaccuracies identified in the management plans within this letter and stop any construction work on the Roe 8 Project until those non-compliances and errors are corrected.

Please note, further concerns pertaining to 2009/5031 regarding the offsetting of residual environmental impacts of the project will be outlined in a forthcoming letter.

Fauna Management Plan issues

1. Omissions in the detail about fauna underpasses to mitigate fragmentation and predation leading to a breach of conditions

Condition 11-1 states "*The proponent shall ensure that the proposal is implemented to facilitate movement of fauna within Beeliar Regional Park and minimise impacts as a result of fragmentation, through implementation of conditions 11-2 to 11-6*."

Section 4.1 of the Fauna Management Plan states "*the fauna underpasses will be spaced, located and designed to optimise fauna movement and effectively manage the risk of predation*" but there is no detail provided as to how exactly the designs provided *"manage the risk of predation*".

Condition 11-2 states that "*Prior to commencement of construction, unless otherwise agreed by the CEO, the proponent shall prepare a Fauna Management Plan to the requirements of the CEO on advice of the Department of Parks and Wildlife. The Fauna Management Plan shall:*

(1) provide the surveyed locations and frequency of the fauna underpasses necessary

to meet the requirements of condition 11-1;

(2) detail the size, shape and furniture within the fauna underpasses;"

However, size of the furniture is not outlined in the Fauna Management Plan nor is there any mention of the number or arrangement of these items (see section 4.1.3, page 15). In addition there is no reasoning provided as to why no furniture will be provided for the Roe Swamp Bridge and Horse Paddock Swamp Bridge underpass (as per section 4.1.3). In particular, the Horse Paddock Swamp Bridge is "a dual use underpass with pedestrian access" so surely there is a need for furniture here for animals to hide.

"(3) *provide an ongoing program of inspections and maintenance to ensure the underpasses are performing effectively*;"

An "*annual ongoing program of inspection*" is included in Table 8, section 6, page 29, but the frequency of underpass inspections each year is not specified. In addition, the contingencies (Table 9, section 7, page 30) do not indicate what will be done to monitor and manage the potential population level effects of obstructed animal movement eg. nutritional stress from not being able to access sufficient & suitable forage, reduced gene flow and inbreeding depression etc.

"(4) *include a trapping and translocation program for target fauna species, which includes the southern brown bandicoot (Isoodon obesulus fusciventer) and black cockatoos, or as otherwise agreed by the CEO*;"

The southern brown bandicoot trapping and translocation issues are dealt with elsewhere in this letter but Carnaby or Red Tail Cockatoo chicks would require hand rearing and subsequent release by a fauna care group. Furthermore the survival rate of any chicks would be minimal – another direct impact on an endangered species.

"(5) *identify objectives and monitoring protocols to measure the success of trapping and translocation program required by condition 11-2(4);"*

As per the Table 8, section 6, page 29, the monitoring frequency is simply listed as '*at the end of the trapping program*' however there are no follow up surveys described. In addition, there is no mention of the potential impact on the animals and ecosystems at the destination sites where the animals will be released.

The Fauna Management Plan is inconsistent and contradictory with regard to the frequency that traps will be checked both under normal conditions and during extreme weather (ie high rainfall events and high temperatures (see section 4.2.2, page 18). This raises concerns as to the certainty of frequency that traps were checked during recent clearing activities and whether traps were open during extreme weather, in particular on the 8th and 9th December 2016 during which the daily maximum temperatures reached 35.3 and 37.9 degrees respectively. The Fauna Management Plan states that

> "Fauna capture and handling will be conducted in accordance with Parks and

> Wildlife's Standard Operating Procedures (SOP's) at the following link: *https://www.dpaw.wa.gov.au/plants-and-animals/96-monitoring/standards/99-standard- operating-procedures."* (Table 27 p26.)

and the SOP states that

> "The traps must be checked early in the morning no later than 3 hours after sunrise (as early as possible in high temperature conditions) and remain closed until the following evening" (Section 5.3 p3).

Further, the number of traps ("*8 traps per hectare of clearing*") seems very few if the objective is to catch as many animals as possible (see section 4.2.2, page 17).

"(6) *identify management and contingency measures, including timeframes for their implementation in the event that objectives of the trapping and translocation program in condition 11-2(4) are not being met*;"

The Fauna Management Plan fails to outline management and contingency measures to be under taken if the objectives of the trapping and translocation program are not met.

"(7) *assess the need for noise barriers or other noise mitigation measures between Bibra Drive and Progress Drive to ensure that noise does not adversely impact fauna*;"

Section 3.1.1, page 9 states that "*The noise measurements collected in the study did not demonstrate any evidence of a relationship between road traffic noise and wetland birds*" however there is no detail provided and no scientific evidence supporting this conclusion.

Section 4.3, page 20 states that "*Because of the large areas of available wetland habitat, that are not likely to be affected by the predicted noise from the project, the operation of the project is unlikely to have an adverse impact upon fauna*". There is no assessment provided to ensure that the parameters were measured in terms of assessing impact eg. behaviour, reproduction, health, survival rates. Further there is no description of what species were considered and over what was the temporospatial scale of these assessments ie. time period, distance from noise source, area. In short this section is incomplete.

Section 4.3.2, page 19 of the Fauna Management Plan appears to infer that "*Fauna are expected to become habituated over time*" to noise. However, comprehensive reviews on the subject of wildlife and noise emphasise that these types of inferences are misleading and the negative impact of noise on animal populations may persist despite apparent behavioral habituation.

eg. "*In our experience with stakeholders, habituation is an oft-cited reason for...an absence of noise impacts, yet research on other stressors indicates that acclimation to a stressor might not release an organism from costs to fitness (Romero et al. 2009)... even those individuals that outwardly appear to habituate – can lead to decreased fitness. Challenging the assumption that habituation to noise equals "no*

impact" *will be difficult, but it will also be a critical component in revealing how a range of behavioral mechanisms link noise exposure to fitness costs*." Francis, C.D. & Barber, J.R. (2013). A framework for understanding noise impacts on wildlife: an urgent conservation priority. Frontiers in Ecology and the Environment 11, 305–313. http://onlinelibrary.wiley.com/doi/10.1890/120183/full

Noise is addressed but there is no mention about vibrations eg "*Birds and reptiles are also highly sensitive to vibration* (e.g., Shen 1983), which low-frequency noise can induce in an animal or the substrate. Vibration sensitivity is an important source of information about approaching predators and prey. Reptiles may detect noise using induced vibrations, as they have relatively insensitive hearing. Amphibians have variable hearing capacities specialized for the perception of social and other meaningful signals. Overall, their bandwidth lies between 100 Hz and 2 kHz. Their best sensitivities range widely from 10 dB to 60 dB. However, they have exquisite sensitivity to vibration (Lewis and Narins 1985)." Bowles, A.E. (1995). Responses of wildlife to noise. Wildlife recreationists. Island Press Washington, DC, USA 109–156.

If the Proponent cannot scientifically demonstrate how it will ensure that noise does not adversely impact fauna the construction of the Roe 8 Project must cease until it can.

"(8) *should noise barriers or noise mitigation measures be required as a result of condition 11- 2(7), identify management and contingency measures, including timeframes for their remediation, to be implemented in the event that noise levels are having an adverse impact on fauna*;"

"(9) *detail the visual barriers to be installed to reduce the risk of vehicle strikes to birds between North Lake and Bibra Lake*;"

Section 4.4, page 23 details visual barriers proposed to reduce vehicle strikes including vertical poles and native tree planting however no evidence is provided that these methods are effective.

"(10) *determine the timing and frequency of reporting to the CEO*."

Section 9, page 32 states "*A monitoring report will be prepared after each monitoring event, summarising the results produced prior to the preparation of the Annual Compliance Report*." No actual timelines, criteria or reporting milestones are provided within the Fauna Management Plan.

In our view the Proponent is currently in breach of condition 11-2 and 11-3 of MS 1008 as the Fauna Management Plan does not detail the furniture within the fauna underpasses. Construction of the Roe 8 Project must cease until condition 11-2 is satisfied.

In our view the Proponent is currently in breach of condition 11-2(3) as an "*annual ongoing program of inspection"* with no details provided cannot satisfy the condition requirement of providing an "*ongoing program of inspections and maintenance to ensure the underpasses are performing effectively."*

In our view the Proponent is currently in breach of conditions 11-2 (5) and 11-3 of MS 1008 as the monitoring protocols do not provide for any assessment of the destination site to determine what the population of southern brown bandicoot are there. Therefore there is no scope in the Fauna Management Plan's monitoring protocols to measure the success of the translocation program.

In our view the Proponent is in breach of condition 11-2(7) and 11-3 as it has not demonstrated in the Fauna Management Plan how it will prevent noise from adversely impacting on fauna.

2. Southern Brown Bandicoot salvage operations are inadequate at addressing threats

a) Very high numbers of Southern Brown Bandicoot

> The local Southern Brown Bandicoot population residing within and adjacent to the development is at least 107 individuals, with an estimated population density of 28 per hectare.

Fauna Management Plan page 8

Clearing of vegetation and the installation of drainage basins will result in the loss of up to 97.8 ha of fauna habitat. The estimated population of southern brown bandicoot to be relocated is 97.8 X 28 = 2,738 individuals.

Whether the number of southern brown bandicoot to be relocated is at least 107 or 2,738 this is a very large number of individuals to be salvaged. Appropriate surveys of areas where southern brown bandicoot are to be relocated should be conducted in accordance with the Fauna Management Plan.

b) Adequate pre-relocation monitoring of relocation areas

The methodology outlined in the Fauna Management Plan is inadequate in that it fails to address the impact on the resident southern brown bandicoot that are already occupying the area where salvaged southern brown bandicoot will be relocated.

The State Government media release states that the southern brown bandicoot will be relocated to the 523 ha offset area. To address deficiency, the southern brown bandicoot within the identified relocation areas should be surveyed and chipped with RFID tags. Without conducting the pre-release survey the post-salvage success statistics will fail to include both the impacts on the salvaged and resident southern brown bandicoot populations.

c) Relocation during summer period

Also, relocating southern brown bandicoot in summer, which will be necessary given that clearing is taking place currently, is likely to increase the stress and mortality rate of individuals as they have to resettle in an unfamiliar area during the most physically stressful time of the year. There are methods to manage this during the trapping operations (ie. close and reopen traps so individuals are not in traps during the heat of the day) but it does not take into account the temperature of the period when the trapping takes place on the likely survival rate.

Southern Brown Bandicoot section 4.2.2, page 18 states:

8. In hot weather (i.e. above 35ºC and/or for consecutive days) traps will be closed after checking and reopened in the late afternoon to avoid captures in the heat of the day which can result in mortality.

This contradicts the management measures in section 5.2 table 7 which states 30C for trapping and translocation of southern brown bandicoot:

Trapping and Translocation Program – Southern Brown Bandicoot	Undertake a 3-4 day Southern Brown Bandicoot trapping and translocation program, in accordance with the appropriate licence issued by DPaW, for all areas of suitable habitat within the development envelope. Each trapping and translocation program is proposed to include: • site reconnaissance to determine the likely habitat where Southern Brown Bandicoot will occur • traps will be set across each stage of habitat to be cleared; approximately eight traps per hectare of fencing which will be followed by the progressive clearing/fencing • cage traps will be used; these will be standard dimension of about 25 cm by 25 cm by 50 cm ('possum traps') suitable for the bandicoot • traps will be set and checked for each trapping night and Southern Brown Bandicoot relocated • Traps will be checked in the morning prior to closure and then reopened in the afternoon, regardless of temperature • each trapping program will be undertaken for 3 - 4 days and will continue until no Southern Brown Bandicoots are caught for 2 consecutive trapping nights or as otherwise determined by a fauna expert • in hot weather (i.e. above 30ºC and/or for consecutive days) traps will be closed after checking and reopened in the late afternoon to avoid captures in the heat of the day which can result in mortality • in periods large volumes of rain traps will be closed after checking and reopened in the late afternoon to avoid capturing and drowning due to flooding • following each trapping phase a report will be provided detailing the methodology, number of animals relocated and the locations to which they were released • the brief reports will be provided to DPaW.	Trapping and translocation program to be completed within the 7 days prior to each clearing stage.	Qualified fauna expert

d) Inadequate fencing

The fence type being used to exclude southern brown bandicoot are typical temporary fencing used for public events. They are not suitable for excluding southern brown bandicoot due to the large gap (150mm) under the fence panels. A large southern brown bandicoot could easily move through this gap so the type of barrier fence being used is inadequate and fails to meet the requirements of the Fauna Management Plan.

The FMP 4.2.2, page 17 states:

4. Traps will be set across each stage of habitat to be cleared at approximately 8 traps per hectare of clearing which will be followed by the progressive clearing and fencing of the area.

Further to this the requirements for the fence are outlined in section 5.2, table 7, page 28

Parameter	Management actions	Timing	Responsibility
Fauna Fencing	Install fauna fencing to exclude terrestrial vertebrate fauna from the construction footprint and the operational highway. Fauna fencing will: • comprise of a mesh fence to a height of no less than 1.2 m and be dug into the ground to a depth of no less than 350 mm • include temporary fauna fencing during construction, but will conform to the standards required for permanent fencing • be designed to exclude the Southern Brown Bandicoot within the development envelope • include escape gates to allow fauna trapped in the road reserve an exit route.	During construction.	Main Roads

We are concerned whether adequate ground truthing of the proposed release location was completed and is so whether it involves pre-location monitoring as described above at (b)? If adequate ground truthing of the proposed release location for the southern brown bandicoot has not been completed construction should cease until evidence is provided that show that ground truthing has been completed.

In addition we question whether the following commitments have been met:

(a) were the relocation sites determined in consultation with DPaW?;
(b) what was the methodology for identifying the location of relocation sites?;
(c) were the resident southern brown bandicoot populations surveyed to determine the existing population size?;
(d) were the resident southern brown bandicoot tagged with RFID chips so that the impact on the resident population could be determined in the post-relocation/salvage monitoring?; and
(e) was sufficient due diligence conducted to determine if the relocations sites were suitable for the relocation of fauna?

In our view the fencing used is not adequate for the translocation program and amounts to construction fencing and therefore amounts to a breach of condition 11-3 of the MS 1008 (ie. Proponent not implementing the approved Fauna Management Plan).

3. Fauna Management Plan – Inaccurate data sets – Trapping and Translocation program

Some of the fauna data sets collected for the Roe 8 Project are now more than 5 years old, going back to 2009. While it is usual under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**) to rely on data from the time the project was referred, we have significant concerns about the rapid decline in the federally listed Carnaby's Black Cockatoo over this time.

Since the proponent first assessed the numbers of Carnaby's Black Cockatoos in the Roe 8 Project area, there has been a serious decline in both species numbers and available habitat overall. The 2011 Great Cocky Count recorded an overall loss of 30% on the Swan Coastal Plain, and a 40% reduction in roosting numbers in just one year. The Cocky Count stated unless clearing of Cockatoo habitat is reduced the species will be extinct by 2020:

> *"Trend analysis of roost counts for Carnaby's Black-Cockatoos in the Perth-Peel Coastal Plain found declines in both the fraction of occupied roosts and flock size over the last five years (2010-2014). The combined effect of fewer occupied roosts and fewer birds in each roosting flock is an estimated current rate of decline in the total number of Carnaby's Black-Cockatoos on the Perth-Peel Coastal Plain of 15% per year".* (Birdlife Australia Great Cocky Count 2014)"

However, the annual Great Cocky Count has also observed an increase in local numbers of Forest Red Tail Cockatoo's feeding and roosting in the area (199 birds were recorded as roosting in the nearby Murdoch University site alone in 2014 – the highest amount of Forest Red-Tailed Black Cockatoos in the Perth Peel region). Birds at Murdoch University use the Beeliar Wetlands and surrounding areas to feed and roost. From 2014-2016 Save Beeliar Wetlands has been conducting weekly walks along the proposed Roe Highway Extension. We have noted a marked increase in Black Cockatoos using the site. Deteriorating conditions and the increasing loss of available roosting and feeding sites in the region have only increased the importance of bushland and wetlands of the area.

Due to the extended timeframe of the assessment process, data which was collected and analysed for these and other species, it is our grave concern that the data set is now critically out of date concerning the relative availability of local feeding grounds. There are many anecdotal accounts of nesting birds in the Roe 8 Project envelope.

The 97.8 ha of woodlands and bushland under threat from clearing from the Roe 8 Project may have become crucial to the survival of local Black Cockatoos. The Fauna Management Plan states that "*delay clearing until identified hollows are no longer being used*" by Carnaby's and Forest Red-tailed Black Cockatoos (Page 17, section 4.2.1).

Clarification is required on this important point as to whether the hollows are for example randomly or consecutively used. This is important because data indicates that though cockatoos will use different sites at different times (ie. the hollow may not be in use at a randomly chosen given point in time) they have high site fidelity ie. they will return and it is important for them to have that choice available for eg:

"*Due to changing patterns of food and water availability across the landscape, not all night roosts will be used every year. Different roost sites are used under different weather conditions, so a flock requires a range of options within each area frequented..." EPBC Act referral guidelines for three threatened black cockatoo species*" http://landinsights.com.au/index.php/articles/epbc-act-referral-guidelines-for-three- species-of-western-australian-black

We have concerns regarding the following points

(a) Is the fact that the data set which is now 5 years old and noting the significant change in circumstances affecting the population of Carnaby's and Forest Red-Tailed Black Cockatoos adequate and fit for purpose?
(b) Whether under the a hollow will be identified as randomly or consecutively used?
(c) How many hollows the monitoring for the trapping and translocation program has identified and confirmation of the area surrounding each hollow that will not be cleared until the identified hollow is not longer used.

4. Fauna Management Plan - Black-Cockatoos

Carnaby's Black Cockatoo and Forest Red-tailed Black Cockatoo are frequently seen both within and around the Roe 8 Project construction envelope. The Carnaby's Black Cockatoo is listed as an endangered species and the Forest Red-tailed Black Cockatoo is listed as vulnerable. The Fauna Management Plan states that the Roe 8 Project area is being used as foraging habitat for Black Cockatoos that are "known to exist in the close proximity".

> No evidence of breeding or use of potential nesting hollows has been recorded for Carnaby's Black Cockatoo and Forest Red-tailed Black Cockatoo within the vicinity of the development envelope. However, foraging habitat for both species exists within the development envelope and roosting sites are known to exist within close proximity.

Fauna Management Plan page 7

The Black-cockatoos that are nesting nearby that are using the Project Area for foraging rely on that foraging area for food to feed the chicks. Therefore removal of this food source will result in the chicks being abandoned as the parents will have to fly further, and likely too far, to effectively return feed the chicks.

The removal of this habitat will therefore have a direct impact on the breeding of Black-cockatoo individuals. As the Fauna Management Plan does not address this issue the Proponent, in our view, does not satisfy the requirements of condition 11-1 of MS 1008.

Further, the Fauna Management Plan relies on an outdated dataset to identify potential breeding trees for Black-cockatoo's. As per the DSEWPaC (now Department of the Environment and Energy) guideline for identifying known and potential breeding trees-which are termed 'significant' trees, a survey was conducted in 2010 (DEC 2010) to determine the number of significant trees occurring within the project area. 605 significant trees were identified. Of these 71 were categorised as having hollows suitable for potential nesting sites with 534 trees categorised as having the potential to form hollows suitable for nesting (trees with a diameter breast height greater than 500mm).

This is of concern and may constitute a non-compliance because in the six years since the survey was conducted, there are over 500 trees that have had the potential to, and may have developed suitable nesting sites in the interim. During recent clearing several of these trees (the locations of which are documented in the Proponent's Public Environmental Review Document, Fig 5.9 4a p290) were cleared and were not physically checked for Black Cockatoo nests by a qualified zoologist in accordance with the Fauna Management Plan which states.

> "Inspect any areas to be cleared for evidence of active nesting/breeding activity by Black Cockatoo, during breeding season. If active Black Cockatoo nesting activity is observed during the survey implement the contingency measure detailed in Table 9" (Table 7 p27).

Or in accordance with Condition10 of 2009/5031 which states the following

> "To avoid and mitigate impacts to black cockatoos, during the breeding season (August - December), within 7 days prior to clearing, the approval holder must ensure all potential nesting trees are investigated to detect the presence of black cockatoos using hollows. The investigation must be undertaken by a suitably qualified and experienced person. If any black cockatoos are detected using a hollow in a tree or trees, the approval holder must: 1. ensure a suitably qualified and experienced person clearly identify all such trees located within two (2) metres of the base of each such tree; 2. not clear any such tree or any vegetation within 10 metres of any such tree; and 3. undertake all reasonable measures to avoid any such tree from being cut down, felled, removed, killed, destroyed, poisoned, ring-barked, uprooted or burned until a suitably qualified and experienced person has verified in writing that the hollow(s) in each such tree are no longer being used by black cockatoos."

5. Other Fauna Management Plan omissions and inaccuracies

5.1 Banksia Woodland of the Swan Coastal Plain

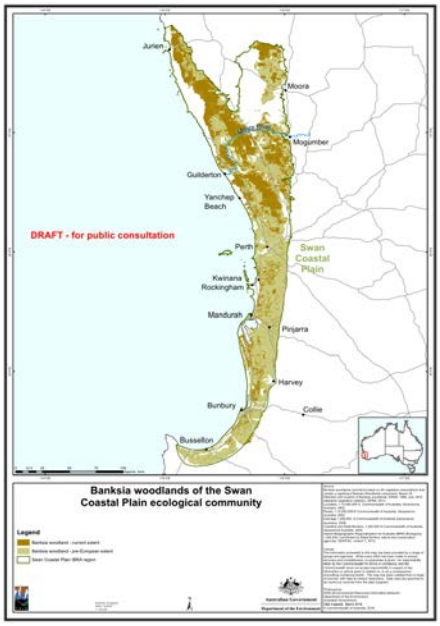
The Fauna Management Plan falsely states that:

> *Vertebrate fauna surveys*
>
> A Level 2 vertebrate fauna survey was conducted in December 2009 and March 2010 (Phoenix Environmental Sciences 2011a). The terrestrial fauna habitat was identified as being fairly similar across the development envelope, containing various forms of Jarrah-Marri-Banksia associations. The fauna habitats are well represented locally and regionally.

Fauna Management Plan page 6

This highlighted statement is incorrect. In September 2016 the Commonwealth Department of Environment has declared the Banksia Woodland habitat as "endangered" (https://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=131&status=Endangered).

The Roe 8 Project envelope is clearly within the extent of the Banksia Woodland of the Swan Coastal Plain as shown on the map:



See: https://www.environment.gov.au/system/files/pages/0cbe29d5-b507-4276-b524-6f0c9a54fb5c/files/banksia-woodlands-swan-coastal-plain-map.pdf

5.2 Other Fauna Management Plan inaccuracies

a) There is no mention of turtles eg. Endemic Near Threatened species (IUCN Red List) Oblong turtle/southwestern snake-necked turtle (*Chelodina oblonga*) in the Fauna Management Plan even though it is likely they would be significantly impacted by the Roe 8 Project. For example, "*female oblong turtles can lay their eggs at some distance from wetlands (the distance varies). If the fence is placed too close to the wetland, they may die from dehydration or predation while persisting in their efforts to get past the fence to their intended nesting site*." Fox, E and Mac Shane, M (2004). Booragoon Lake Reserve Management Plan. Bennet Brook Environmental Service for the City of Melville, Perth, Western Australia. www.melvillecity.com.au/environment/environmental-management-plans/booragoonlake-management-plan/booragoon_management_plan.pdf

Roe, J.H. & Georges, A. (2007). Heterogeneous wetland complexes, buffer zones, and travel corridors: Landscape management for freshwater reptiles. Biological Conservation 135, 67–76. http://www.sciencedirect.com/science/article/pii/S0006320706004198

b) There is no mention of the impact on fish species and the Fauna Management Plan states "*No fish were recorded in the vertebrate surveys*." (Section 3.1.1, page 6). However there have been no recent surveys to confirm this claim.

c) There is no mention of impact of increased exposure to local air pollution and therefore no plan to mitigate or address such impacts on fauna despite reviews finding that Newman, J.R. & Schreiber, R.K. (1988). Air pollution and wildlife toxicology:

"*A literature review revealed that several species of reptiles from diverse taxonomic groups move between wetlands separated by a mean minimum and maximum distance of 499–1518 m...In such cases we argue that the different wetlands offer complimentary resources and that managing wetlands as isolated units, even with generous terrestrial buffer zones, would not likely conserve core habitats needed to maintain local abundance or persistence of populations over the long term.*

"The effects have ranged from death and injury to increased incidence of infectious diseases, and they are the result of exposure to both gaseous and particulate emissions."An overlooked problem. Environmental Toxicology and Chemistry 7, 381–390. http://onlinelibrary.wiley.com/doi/10.1002/etc.5620070508/full

d) There is insufficient consideration of wetland birds and shorebirds in the '*Conservation significant fauna species'* (Table 4, Section 3.1.1, page 4). Table 4 excludes wetland birds and shorebirds despite the fact that (as stated on Page 8) "*Bibra Lake is considered to be a highly significant wetland for waterbirds on the Swan Coastal Plain*."

e) There is insufficient mention of the area/distance of buffer zones between the highway and any remaining habitat. The only mention of any type of buffer zone is if a potential breeding or nesting tree is found, "*a 10m buffer must be applied to any clearing around the tree*" (see section 4.2.4, page 19) but this is unlikely to be sufficient given that "*Groups of birds will roost in a suitable tree or group of tall trees, usually close to an important water source, and within an area of quality foraging habitat*" EPBC Act referral guidelines for three threatened black cockatoo species http://landinsights.com.au/index.php/articles/epbc-act-referral-guidelines-for-three- species-of-western-australian-black

f) Section 3.1.1 page 8: "*Seven Short Range Endemic (SRE) species (three species of spiders and four millipedes) with a distribution limited to the Perth metropolitan region were recorded...One is rarely found in the Perth metropolitan area..." this statement is at odds with the following claim that they are "considered particularly significant in terms of diversity of taxa or iconic species within the macroinvertebrate assemblages*". Any rare species that is within the Roe 8 Project area is significant.

g) Section 4.2.3, page 18 discusses trapping and translocation of four '*target reptile species*' however, the fauna survey omits to mention numbers of non-target reptile species They report a total of '21 reptile species' in Fauna survey results (p7) but the distinction is not clarified.

h) Section 4.4, page 23 the Fauna Management Plan states that "*native tree planting, grown to sufficient height*" but gives no indication what is considered 'sufficient' and what evidence is available to indicate that this will reduce vehicle strike.

i) Cockatoo nesting tree clearing is referred to at table 7, section 5.2, page 27:: "*Where possible clear potential cockatoo nesting trees outside breeding season". However there is no evidence why this should occur solely 'where possible?'.* The

EPBC guidelines clearly state that clearing a nesting tree would be grounds for referral so *"where possible"* should be removed (EPBC Act referral guidelines for three threatened black cockatoo species http://landinsights.com.au/index.php/articles/epbc-act-referral-guidelines-for-three- species-of-western-australian-black)

In our view the significant inaccuracies in the Fauna Management Plan highlighted above impact upon the Proponent's ability to satisfy the requirements of condition 11-1 as these issues must be properly considered to ensure that the Roe 8 Project is implemented to ensure movement of fauna within Beeliar Regional Park is facilitated and to minimize impacts as a result of fragmentation of the habitat.

6. Land Acquisition Plan

The legal proceedings involving MS 1008 have been involved around legal issues with environmental offsets proposed for the Roe 8 Project. We are concerned with the practical adequacy of the proposed offsets, and with the process undertaken to assess this adequacy. This is especially because offsets were central and primary to the Environmental Protection Authority's (**EPA**) finding that the Roe 8 Project is overall acceptable despite the project's significant residual impacts to critical assets.

We note that the viability and numbers of the populations of the threatened fauna in the proposed offset areas will improve to an extent equal to or greater than the reduction in viability or numbers of individuals in the population of the relevant threatened fauna in the disturbance area or adjoining lands. The assessment of this must involve a reliable quantitative assessment, and not simply be based on assertions at a generalised level about what could happen (Note: the case of *Bulga Milbrodale Progress Association Inc v Minister for Planning and Infrastructure and Warkworth Mining Limited* (2013) NSWLEC 48 found generalized assessment to be too unreliable).

The offsets areas will provide sufficient measurable conservation gain for the particular components of biological diversity impacted by the Roe 8 Project, particularly the affected species. The actual values of and assessed environmental outcomes of the offset land have been assessed to at least the same degree as the actual project impacts.

Any offsets which rely on rehabilitation to be done must be clearly assessed in light of the fact that there is a great risk in being able to effectively rehabilitate land. The *Bulga* case found that extant areas immediately deliver conservation gains or benefits but rehabilitated areas not only take time to deliver the same degree of benefits as extant areas but there are risks that the rehabilitation may not be successful in achieving outcomes at all, or outcomes of a quality which would deliver the same degree of benefits as extant areas.

Given that the impacts which the offsets are required for are *permanent* loss of habitat and habitat fragmentation, all of the offsets should be required to be for the life of the Roe 8 Project too.

There is no way of demonstrating that spending an amount of money ensures an environmental objective. While setting the monetary cap provides certainty for the proponent, and perhaps even for the government if it is implementing the programs as paid for by the proponent, providing this "project certainty" is not an object of the EP Act, however ensuring environmental protection certainly is.

6.1 – Lake Clifton – land may not have been 'acquired'

The land acquired under the Land Acquisition Plan is:

(a) Lake Clifton (3 properties) 100 km from Perth (approx. 1 hour drive); and
(b) Nirimba (1 property) 90 km from Perth (approx 1 hour drive) (together **Acquired Land**)

The MS 1008 says only that land is to be "acquired". The Land Acquisition Plan (p. 6) says the three blocks are zoned for rural use but the title in the document has been recently created. Two of the blocks appear to have been owned in the past by the State Government Forests Department (see Appendix 1). Note that at least one map is missing from State Records. The Land Acquisition Plan withholds evidence of financial acquisition. We question whether the transfer of government lands from one department to another constitutes an acquisition of property as required under condition 12-5 of MS 1008?

This clipped image from Google Maps shows close up of exploration drill lines within the Acquired Land. These can clearly be seen on several images in the Land Acquisition Plan but are not mentioned in the relevant ecological survey.

6.2 Offset land – Apparent non-compliances with condition 12.4 MS 1008

6.2(a) Complexes are quite different between Beeliar and Lake Clifton

The following excerpt is from p. 7 of the Land Acquisition Plan:

> "*The vegetation complexes of the offset sites are similar to those being impacted. Roe Highway Extension will impact four vegetation complexes:*
> *Cottesloe Complex Central and South*
> *Karrakatta Complex Central and South*
> *Herdsman Complex*
> *Bassendean Complex Central and South.*
>
> *The Cottesloe complex, Central and South is found within the Lake Clifton Offset (50%). The Karrakatta complex is not found in the offset site, but the Yoongarillup Complex (30%) is composed of similar Jarrah-Marri forests and woodlands with the addition of Tuart.* ***The Herdsman and Bassendean complexes are not present within the Lake Clifton offset.*** *The remainder of the site is Quindalup complex (20%).*
>
> *Twelve vegetation communities were mapped across the three offset lots in Lake Clifton. The Roe Highway project area and the Lake Clifton offset area have vegetation communities dominated by Agonis flexuosa, with Banksia species and various understory. <u>The offset site has woodland dominated by Tuart, where the Roe 8 Project area is dominated by Banksia communities.</u>*
>
> *Tuart and Banksia communities are present at both sites. Jarrah communities are also present at both sites, but over a greater area in the Roe Highway project area."*

The two areas acquired to offset the Roe 8 Project are coastal estuarine not freshwater as in the Beeliar Wetlands.

6.2 b) Lake Clifton is not as diverse as the Beeliar Wetlands

"*A total of 131 species from 85 genera and 48 families were recorded within the Lake Clifton offset (p. 6 Land Acquisition Plan). There were 355 flora species recorded at Roe Highway with 67 species in common with the Lake Clifton Offset site." (p. 6)*
A species comparison in the Land Acquisition Plan appendix clearly shows the lack of comparison between the two sites. There are no Bush Forever sites in the Lake Clifton package.

6.2 c) Land acquired may not comply with section 3, condition 12.4:
(c) at least 7 hectares of Conservation Category Wetland areas and an appropriate buffer;

The wetland offset area appears to be only partly in the acquisition area. The offset site intersects with one Conservation Category Wetland (CCW), UFI 3096 (p.11) It is unclear where the wetlands are, at least one area is crossed by the boundary hence no buffer zone on that side.

6.3 Weeds detailed and no Rehabilitation Plan

Condition 12.4.4 of MS 1008 provides: that a Rehabilitation Plan be created on the advice of DPAW for any offset which requires it. As the biological survey lists weeds for every vegetation community assessed in the Land Acquisition Plan, in some cases nearly equal numbers of weed species to native species. "Weed understory", "declared pests" and "historic clearing" are all mentioned in the report but there is no planned rehabilitation.

> ***"6.2.3 Weeds (from Construction Plan)***
> *A total of 21 weeds were recorded during the field survey. This included three species listed as Declared Pests under the BAM Act. Details of the three Declared Pests are provided in Table 20 and Plate 2.*
> *Weeds were observed throughout the entire Survey Area. In particular, the extensive spread of Trachyandra divaricata and the Declared Pest Gomphocarpus fruticosus led to a lower rating of vegetation community condition. The most common weeds recorded within sample sites were Trachyandra divaricata (48 sites), Lysimachia arvensis (35 sites) and Solanum nigrum and Hypochaeris glabra (33 sites each) p. 100*
>
> ***3.1.8 Rehabilitation***
> *"No rehabilitation is proposed to be undertaken at the offset locations, as the offset requirements have been met by existing habitat. A rehabilitation plan has therefore not been prepared. p.21*"

We are concerned that the Acquired Land does not satisfy the requirements of condition 12-3 and 12-4 of MS 1008 given:

(a) The areas of land acquired are coastal estuarine not freshwater;
(b) There are no Bush Forever sites within the Acquired Land;
(c) At least 7 hectares of Conservation Category Wetlands and an appropriate buffer are required;
(d) The identification of a significant proportion of weeds within the Acquired Land.

7. Issues with the Construction Plan

7.1 Additional Baseline Assessment of Dieback not completed

This following is from section 2.3, p.11 of the Construction Plan:

> *2.3 Disease and pathogen management*
> *This section focuses on disease and pathogen management, particularly dieback, within the development envelope during the construction phase of the Project.*
> *2.3.1 Baseline assessment. A dieback assessment was undertaken within the development envelope to determine whether the disease was present in order to inform management (Glevan 2009). The dieback assessment classified areas within the development envelope as either 'uninfested'*

'uninterpretable' or 'unmappable'. No infestations of dieback were identified within the development envelope."

The majority of the development envelope was considered either unmappable, due to the significant levels of disturbance and lack of indicator species, or uninterpretable, due to the presence of the Spearwood Dune association west of Progress Drive and the presence of wetlands, where associated vegetation is naturally void of reliable indicator species.

An additional baseline dieback assessment will be undertaken to provide up to date dieback status of the development envelope to inform the dieback risk assessment outlined in Section 2.3.3."

The "Baseline" assessment is now 7 years old. In our view the baseline is inadequate and contradicts best industry practise and published material on dieback in wetlands and other management plans. For example:

Guidance on Dieback Recognition can be obtained from:
Department of Environment and Conservation (2012). 'Phytophthora dieback', in A guide to managing and restoring wetlands in Western Australia, Prepared by C Mykytiuk, Department of Environment and Conservation, Western Australia.
Department of Environment and Conservation (2012). '

Department of Environment and Conservation, Western Australia.Common indicator species in wetlands include the swamp peppermint (*Taxandria linearifolia*), swamp banksia (*Banksia littoralis*), and swamp teatree (*Pericalymma ellipticum*). (Mykytiuk, 2012, p.12)

T.linerifolia and *B. littoralis* are present in the site according to the Flora and Vegetation Monitoring and Management Plan. Just one example is quadrat R17 (p. 101) has *T.linerifolia* in an assemblage with veg condition= excellent, disturbance=nil and fire age >10 years.

The presence of *E.rudis/T.linearifolia* Floristic community FCT S17 (wetlands on Bassendean sands) in the Beeliar wetlands site is well known and previously documented.

Point from Mykytiuk (2012, p.24): If Phytophthora dieback is present in a catchment area, wetlands located low in the landscape within that catchment have a high likelihood of being infested.

Dieback signage and decontamination stations are present in the DER managed Beeliar Regional Park block that adjoins the road reserve upslope of Progress Drive (Kangaroo paw section). The confirmed presence of dieback upslope in the catchment means there is a high likelihood of infestation in the lower wetland areas.

Lateral water flow is a factor in spread of dieback and such flows have been described in the PER Appendix D hydrology report.

We are concerned that the Construction Plan, in utilising data that is 7 years old and that which contradicts other management plans from Western Australian State Agencies regarding dieback, does not satisfy condition 7-6 and 7-7 of MS 1008.

It is also of concern that a substantial amount of clearing has already taken place without the majority of the site being mapped for dieback. This means that the dieback status of topsoil and vegetation collected to date is unable to be determined, potentially forming a non-compliance against the Construction Management Plan which states (from Table 11, p15).

"Ensure topsoil and mulch from uninfested, infested, uninterpretable and unmappable areas are stockpiled separately within their classified area"

7.2 Clarification needed on contravention of Management Plan for Hygiene Control

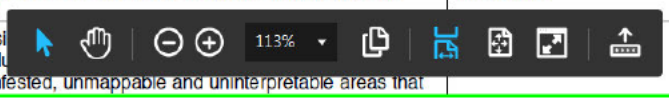
Table 9 of the CEMP (p. 12) clearly sets out the conditions, including a baseline assessment of the construction envelope prior to work starting (see below). However it is unclear whether an additional baseline assessment has been undertaken to inform the risk assessment process outlined in the management plan. If this is the case and no additional information has been collected on baseline conditions, it is difficult to understand how the contractors could conduct a meaningful and effective risk assessment given that large areas of the work area were considered unmappable or uninterpretable before work commenced.

Risk assessment

Prior to commencing work in unmappable and uninterpretable areas a risk assessment will be undertaken by contractors. The risk assessment will assess the likelihood of dieback being present, and if any areas are considered to potentially have dieback the hygiene measures detailed in Table 9 will be implemented. This assessment will be based on whether unmappable and interpretable areas have been previously excavated and/or consist of hardstand areas. If these areas have not been previously excavated or consist of hardstand, then dieback may be present.

Table 9: Disease and pathogen management actions

Parameter	Management actions	Timing	Responsibility
Baseline assessment	Undertake a baseline dieback assessment to determine the dieback status of the development envelope.	Prior to clearing	Construction contractor
Potential dieback areas	Undertake a risk assessment to determine unmappable and uninterpretable areas that may contain dieback (refer to Section 2.3.3 for further detail).	Prior to construction	Construction contractor
	Demarcate areas which have been classified as infested, unmappable, and uninterpretable that may contain dieback based on risk assessment undertaken.	Prior to construction	Construction contractor
Personnel	Undertake hygiene training as part of the site induction, which should include: • procedures for clean-on-entry to and exiting the development envelope • procedures for minimising the risk of spread of dieback within the development envelope • informing all personnel that they must remain on designated roads and access tracks and that they should remain in approved access areas • associated record keeping, including incident reporting.	Prior to personnel commencing work on site	All personnel
Vehicles and machinery	Restrict access to the site to designated entry and exit points.	At all times	All personnel
	Erect si… procedu… from infested, unmappable and uninterpretable areas that		Construction contractor



7.3 Non-compliance for Hygiene Control

No signage controls for dieback are in place for vehicles entering the site. This is a non-compliance with the Construction Management Plan which states "Erect signage which outlines hygiene management procedure at site entry and exit points, and at exit points from infested, unmappable and uninterpretable areas that may contain dieback. The signs should include the following procedures: brush down contaminated vehicles/machinery in dry weather and wash down contaminated vehicles machinery with water and an appropriate reagent during wet weather" (from Table 9.0 p12).

No hygiene controls for dieback are in place for vehicles entering the site which is unacceptable given that the majority of the site is unmapped. This is a non-compliance with the Construction Management Plan which states (from Table 9.0 p12).

> "Ensure vehicles and machinery not free from soil/organic material are cleaned down prior to entry/exit from site and prior to exiting infested, unmappable and uninterpretable areas that may contain dieback."

Further no washdown areas are present at the site which is a non-compliance as the plan states (from Table 9.0 p12)

> " Ensure runoff from washdown areas is contained, to prevent the spread of

disease”

7.4 Non-compliance for Acid Sulphate Soils and potential contaminants management strategies prior to construction

A preliminary assessment showed Acid Sulphate Soils (**ASS**) or possible ASS in 8/9 tested sites and recommended a detailed Acid Sulphate Soil Management Plan (**ASSMP**) according to DEC criteria prior to construction (p. 15 of the CEMP). This requirement is further detailed in this table p. 16 along with remediation if required However it is unclear whether this has been undertaken, as at the time of writing no ASSMP was posted on the Main Roads website.

Table 12: ASS and potential contaminants management actions

Parameter	Management actions	Timing	Responsibility
ASS identification	Undertake detailed sampling of high ASS risk areas identified in the development envelope in accordance with *Acid Sulfate Soil Guidelines Series Identification and Investigation of Acid Sulfate Soils and Acidic Landscapes* (DER 2015).	Prior to construction	Construction contractor
ASS management	Develop a detailed ASS Management Plan (ASSMP) based on findings from above sampling and in accordance with *Treatment and Management of Soils and Water in Acid Sulfate Soil Landscapes* (DER 2015) in consultation with the Department of Environment and Regulation.	Prior to construction	Construction contractor
Other contaminants	Review groundwater and sediment sampling results from wetland and drainage surveys to determine if there is the potential for other contaminants to be present in the development envelope.	Prior to construction	Construction contractor

In addition, the preliminary assessment noted evidence of dumped material comprising potential asbestos containing material within the project footprint (p16). However the Construction Management Plan fails to adequately document and provide monitoring and management measures to deal with the occurrence of asbestos within the construction area. Observations of proponent activities conducted prior to clearing indicate that quantities of asbestos were removed from the site, however the lack of documented procedures within the Construction Management Plan raise serious concerns regarding the compliant and thorough removal of asbestos material. There is a distinct possibility that topsoil and mulch stockpiles may be contaminated with asbestos causing health concerns for nearby residents and rendering the topsoil and mulch material unavailable for rehabilitation activities

7.5 High environmental and heritage risks not assessed in the Construction Management Plan

Several high environmental and heritage risks pertinent to the project have not been identified and have no controls for mitigation documented in the management plan.

The plan fails to document how the management of hydrocarbons and hazardous materials and risk associated with these substances will be controlled. Given the project’s very close proximity to conservation significant wetlands and very shallow depth to groundwater this risk should be addressed. The groundwater directly beneath the (road) formation is at its shallowest, only 0.1 m below ground level (AECOM, 2010) and has been categorised as having a “Very High” vulnerability to

risk of contamination (Davidson, W.A.). It is therefore unacceptable that the management plan does not take into account the risk of contamination from hydrocarbon spills and hazardous materials, or document mitigation measures to be undertaken by the contractors to manage this risk.

The plan also fails to document how stormwater and surface water will be managed during construction. Again this is of particular concern due to the close proximity of the wetlands and shallow groundwater. The project has the potential to contaminate surface and groundwater through sedimentation and other contaminants through erosion and improperly managed stormwater. This risk should be addressed and controls to mitigate implemented.

Given the rich aboriginal history and registered heritage sites within the project area there is a possibility that a site or sites previously unknown may be uncovered. The plan fails to outline processes and procedures to follow in the event that this occurs.

Conclusion

We are deeply concerned that there are serious inadequacies with the management plans for the Roe 8 Project and that as a result the Proponent is in breach of conditions under MS 1008 and subsequently 2009/5031. Given that the list of identified inaccuracies and shortfalls within the management plans is not a comprehensive one and that other issues may be discovered, we ask that the Proponent be required to cease all work with the Roe 8 Project until the management plans have been reviewed and have been brought into line with the conditions under MS 1008.

Due to the urgency regarding these matters we look forward to hearing from you as soon as practicable and at the latest by close of business Thursday 12th December 2016.

Yours faithfully

Ms Kate Kelly

Convenor

Save Beeliar Wetlands (Inc)