

27 January 2014

Dr Paul Vogel
Chairman
Environmental Protection Authority
Locked Bag 10
East Perth WA 6892
Attention: Amy Sgherza

PER: Keane Road Strategic Link, Forrestdale
Proponent: City of Armadale

Dear Dr Vogel

The Urban Bushland Council WA Inc. presents the following submission on the above proposal in the PER by the City of Armadale for construction of a local road through Bush Forever site 342.

This unnecessary local road will fragment this critical public asset and will traverse and irrevocably disturb a series of complex plant communities and their associated fauna in Conservation Category Wetlands in very good condition.

The Urban Bushland Council strongly opposes the construction of the proposed local road and any modification of it and any other infrastructure and services across Bush Forever site 342 in this location or any other location. Notably this Bush Forever site is rated by the State Government (DEC, EPA) as being in the top priority for conservation, being in the most species rich portion of the Perth Metropolitan Region (Swan Coastal Plain).

We therefore submit that the EPA recommends to the WA Minister for the Environment that the proposal and any modification to it and any later stages be rejected as environmentally unacceptable and, further, that it cannot be made environmentally acceptable. Also we submit that the proposal be totally rejected by the Federal Environment Minister under the EPBC Act.

The Urban Bushland Council endorses the PER submission by the Friends of Forrestdale.

Our objections and major concerns with this proposal are outlined below.

1. EPBC Act Sections 18 and 18a Listed Threatened Species and Communities

Fauna

Threatened fauna listed under the EPBC Act and listed under the WA Wildlife Conservation Act and relevant to this development proposal include:

- **Carnaby's Black Cockatoo:** Proposed offsets do not provide additional habitat (and food sources) for this species. The presence and habitat for the **Forest Red-tailed Black Cockatoo** are not addressed. They have been observed in Forrestdale. DEC have acknowledged the change in their

behaviour on the Swan Coastal Plain - they have returned after an absence of some 30 years. All Banksia woodland provides foraging habitat for both species.

- **Graceful sun-moth** – although none were sighted during only one survey, the presence of this species cannot be discounted as the floral species on which they feed (such as *Lomandra hermaphrodita*) is prevalent; thus they must be assumed to be present.
- **Rainbow Bee-eater** – the referral claims that slopes are required for breeding purposes. This is incorrect. Bamford (Attachment 'A', p.34), SEWPAC Species Profile and Threats Database and Morecombe state that this species can nest on flat ground. Bryony Fremlin (pers. comm. 2013) has observed flocks of hundreds of this species in the Bush Forever site, including juveniles. Notably this migratory species nests on the ground.
- **Short-tongued bee *Neopasiphe simplicitor*** - two species with a restricted distribution and unique lifecycle in the Bush Forever site are acknowledged within the current studies but the impact of the proposed road on them is not assessed and requires further research. *Neopasiphe simplicitor* is listed under the EPBC Act as **Critically Endangered**.
- The (yet unlisted) "**Megamouth Bee**" *Leioproctus (Ottocolletes) muelleri*, discovered in December 2010, is new to science, and the only known breeding site for this species is just 200m from the proposed road.

Plant Communities

The WA State listed TEC SCP10a "**Herb Rich Shrubland in Claypan**" is listed as **Critically Endangered** under Commonwealth EPBC Act and forms part of the Anstey Keane Wetlands. This TEC is supposed to be protected in this designated Bush Forever Area (Site 342) and is also listed as a Conservation Category Wetland (No. 122).

Bisecting this wetland area and clearing for road construction is contrary to the conservation objectives of the EPBC Act, Bush Forever and Conservation Category Wetland listing for this incredibly biodiverse area.

While the road proposal has been moved slightly to the SW and into the edge of adjacent private mostly cleared land, the intact TEC SCP 10a is immediately adjacent to it. Thus the PER claims that the TEC is not within the immediate area proposed to be cleared for the Road. However the hydrology remains connected and indeed the cleared land was probably part of the same TEC before clearing. The roadworks and associated drainage is bound to have an impact on this TEC and this risk is unacceptable.

There are a number of threatening processes and unacceptable impacts that will arise due to road construction, namely:

- **Fragmentation:** Bush Forever site 324 is relatively large and is thus able to sustain its rich species diversity in both fauna and flora. Severance of ecological connectivity by the road across the wetlands will break this site into 2 areas of significantly reduced size and sustainability as well as inviting road-kill of fauna. This is a very significant impact. The fauna underpasses proposed will not provide for kangaroos or wallabies and road kill of these animals is inevitable. Fauna tunnels are fraught with problems: they become hunting sites for feral animals such as foxes; and will restrict movement of many species of reptiles and frogs as well as mammals such as quenda. Notably also the PER significantly understates the number of fauna species present in the site.

We submit that the fragmentation of the Bush Forever site is environmentally unacceptable and

is indeed a fatal flaw in the proposal and any modification to it. It is akin to, and indeed much worse in terms of species richness and wetland impacts - than, a new road across the middle of Kings Park justified because of reduced travel time. The level of public concern and opposition would immediately reject any such proposal. Also conservation reserves are set aside for the purpose of nature conservation, not other developments.

Notably the PER does not even include the impacts of fragmentation as a 'residual impact'. This is a serious omission of relevant information and thus evidence against the acceptability of the proposal.

- **Changes in wetland hydrology.** The underlying stratigraphy of the road reserve is very complex and this makes it impossible to predict with any certainty the changes and impacts on the wetland hydrology of these CCWs. Any changes to hydrology will have an impact on the highly complex wetland vegetation's floristic communities. The principle of prevention and the precautionary principle must therefore apply meaning that the area should not be disturbed at all by construction of a road. ***This factor alone is a fatal flaw in the proposal and reason for its rejection as environmentally unacceptable.***
The Urban Bushland Council recommends that the EPA seeks independent technical advice from the V&C Semeniuk Research Group on this matter.
- Importation of fill leading to potential sedimentation, plus introduction of weed seeds, dieback, and other plant pathogens which will have a devastating impact on the wetland vegetation and Banksia woodlands.
- **Acid sulphate soil** excavation and disturbance. Under State Government policy, ***high risk ASS areas should not be disturbed.*** Impacts are irreversible in a natural bushland ecosystem such as this with its complex stratigraphy and vegetation, high water table, and disturbance is inevitable. ***The presence of ASS and PASS is a fatal flaw and reason alone for the proposal to be rejected as environmentally unacceptable in such a fragile wetland ecosystem.***
- **Road operation** will bring increased risk of invasive weed seeds, dieback disease, bushfire and pollution as well as off-road vehicle and hoon intrusion. ***The increased risk of dieback invasion into Conservation Category Wetlands and to a critically endangered TEC - SCP 10a - is alone a fatal flaw in the proposal.*** The proponents spurious assertion - and even their justification for the road - that fencing of the road will lessen incursion and damage by these off-road vehicles is simply wrong: the opposite is much more likely. The current experience is that fences in other parts of the reserve are no barrier to these destructive incursions.
- **Increase in the number of utility services** that will be installed following road establishment, including excavating for a sewerage line and water main (Page 16 Scoping Document): these are impacts that have not been addressed in the PER. This is a serious flaw in consideration of impacts and so-called 'residual impacts'. Any dewatering and installation of pipes adjacent to or under the road will have a significant and unacceptable impact on this fragile dampland ecosystem including disturbance of ASS (as above). This omission of information is significant.

The very high value of the conservation category wetlands and the rarity of TEC SCP10a, presence of PEC SCP 21 and PEC SCP 22 must be viewed against the City of Armadale's purported social value of the proposed road development which is stated as a reduction of less than 2 km off the journey from North Forrestdale to Forrestdale. This is not an adequate justification for another local road through a

conservation area especially when Skeet Road is to be made and other surrounding regional roads are to be upgraded.

The associated unacceptable environmental impacts of the Keane Road extension are what is being assessed here in the PER under the Environmental Protection Act. Consideration of factors other than the significant environmental factors are not relevant under the Act, and further, the Act is superior to and prevails over other planning strategies, structure plans and the Planning Act. Thus only the environmental impacts are relevant in this assessment.

Representatives of the Urban Bushland Council, the Wildflower Society and the Friends of Forrestdale attended a very well attended public meeting presented by the City of Armadale on 22 January 2014 about the proposal. Remarkable was the strong bias presented by both the City of Armadale - in justifying the proposal in terms of a Structure Plan in 2002 which did not respect the site as a Bush Forever site and CCW; and by the Enviroworks Consultant who did not even mention the status of the area as a CCW, the general significance and context in high species richness of the site second only to Brixton St wetlands, and the residual impacts of fragmentation.

The nationally and state recognised natural heritage value of the wetlands is of the highest priority here compared with the small reduction in commute distance (less than 2 km) that would be achieved by the proposed local road development. Indeed it is recommended that the Anstey-Keane Damplands/Wetlands be listed as a **'Wetland of National Significance'**. Its values are at least as significant as the similarly listed Brixton Street Wetlands.

We wish to remind the EPA that according to the EP Act, its duty is to assess and give advice only on the significant environmental factors, and thus the EPA must not be influenced or swayed by other social and planning issues and planning desires of the City of Armadale and others.

2. EPBC Act Section 139, 1 (a) Convention on Biological Diversity, 1992

Australia has ratified the Convention on Biological Diversity, 1992, at the United Nations Conference on Environment and Development (the Rio "Earth Summit"). Australia's Obligations under the Biodiversity Convention (EPBC Act, Section 139 1 (a)) state that "The Minister must not act inconsistently with..." the Convention.

National Biodiversity Strategies and Action Plans (NBSAPs) are the principal instruments for implementing the Convention at the national level (Article 6).

Australia has produced "Australia's Biodiversity Conservation Strategy, 2010–2030", Prepared by the National Biodiversity Strategy Review Task Group convened under the Natural Resource Management Ministerial Council, 2010.

Page 40: Priorities for Action (from: <http://www.cbd.int/doc/world/au/au-nbsap-v2-en.pdf>):

"More detail on implementation arrangements is in the Implementation and action section, which details indicative actions directed at achieving the outcomes and national targets. It also outlines broad expectations for all levels of government and key industry and community sectors in the implementation of the Strategy. The specific mix of actions that will be needed to achieve progress towards the outcomes and targets will vary between regions, industries and jurisdictions depending on local circumstances, challenges and opportunities. The Strategy also recognises that, over time, new actions are likely to be identified to help achieve its aims. The set of indicative actions in the

Strategy will be a guide to help align activity nationally. It is intended this process will facilitate innovation while not restricting jurisdictions to a 'one size fits all' approach. Where appropriate, the actions to implement this Strategy should be considered in conjunction with other relevant national, state and territory documents (listed in Appendix 4)."

Appendix 1 of the Strategy outlines the broad "roles and responsibilities of these groups in implementing the Strategy" including State governments and their respective legislation listed in Appendix 4 of the Strategy.

Appendix 4.2a of the Strategy lists the state legislation "to be considered in conjunction with other... documents" to implement the Biodiversity Strategy: Western Australian Wildlife Conservation Act, 1950.

The Threatened and Priority Fauna and Flora have been listed by the Western Australian Environment Minister and are available on the DEC website:

http://www.dec.wa.gov.au/index.php?option=com_content&view=article&id=852&Itemid=2010

While Threatened Communities are not protected via legislation in WA there is "an informal, non-statutory process in place" (DEC website). Threatened and Priority Ecological Communities are also listed by the Minister and are available at the above links.

Flora

The Western Australian Wildlife Conservation Act refers to those species in need of special protection, including the following species:

- *Jacksonia sericea* (Priority 4) which occurs within the proposed clearing footprint, 0-50 individuals.
- *Styliidium longitubum* (Priority 3) occurs "within close proximity" to the clearing footprint. The details of a buffer zone to protect these individuals is not specified.

Fauna

As previously mentioned the Bush Forever area has a rich biodiversity and many of the fauna species are listed by the Western Australian government as having special conservation status under the Wildlife Conservation Act. Attachment A of the referral documents list fauna species expected to occur in the disturbance footprint and the number of those species with "conservation significance":

- Frogs: 10 species
- Reptiles: 50 species (10 with conservation significance)
- Birds: 194 species (33 with conservation significance)
- Mammals: 19 species (9 with conservation significance)

To have so many species of conservation significance in or potentially in this site is amazing. The precautionary principle dictates that such species richness must be protected and any further disturbance would be unacceptable.

Vegetation Communities

The Western Australian State Government refers to those vegetation communities in need of special protection, including the following:

- **Priority 2 SCP22 “*Banksia ilicifolia* woodland”** – 0.10 ha of this community is proposed to be cleared, comprising 1.7% of the total community within the study area.
- **Priority 3 SCP21c “Low lying *Banksia attenuata* woodland or shrubland”** – 0.55 ha is proposed to be cleared, comprising 6.2% of the total community within the study area.

In summary, the EPBC Act specified that the Minister must (Section 139 1a) act consistently with the Convention for Biological Diversity, which in turn refers to National Biodiversity Conservation Strategies. Australia’s Strategy refers to State legislation, which in this case is the Wildlife Conservation Act and associated Notices. There are two flora species listed under this Act that will be adversely affected by the proposed development and two vegetation communities. **The proposal to clear these priority species and communities has not been given due consideration in the PER and the referral document and this is unacceptable as is the impact.**

3. Conservation Category Wetland

The Anstey Keane Wetland was identified by Hill (1996) as a Conservation Category Wetland No. 122. A Conservation Category Wetland is defined by Hill as “those which support high levels of attributes and functions”.

The Department of Water addresses the importance of protection for Conservation Category Wetlands in its “Water Quality Protection Note 6” (2006) and the importance of buffer zones to ensure threatening processes are kept at a distance to the wetland. The Note states that “Roads or services may cross buffer zones”, but it does not say that roads may cross the wetlands themselves for obvious reasons.

Under State policy, 'Conservation Category Wetlands' are to be protected and clearing should not be permitted. It is of grave concern that a development of this nature is proposed within a Conservation Category Wetland. The City of Armadale should have been aware of this and should have adjusted its road proposals by removing the road reserve from the Bush Forever site and from Conservation Category Wetlands.

4. Biodiversity Hotspot

The Anstey Keane Wetland is located within the internationally recognised Biodiversity Hotspot for Conservation Priority of the South-West of Western Australia, and within the Perth region sub-hotspot.

Further recognition of the ecological richness and natural value of this area has been identified in Western Australia’s Bush Forever program, listed as Site 342. This site is of regional, state and national significance.

The area has also been registered as a Conservation Category Wetland (No. 122).

The wetland areas are part of a wider community of significant wetlands in the area, including the RAMSAR site No. 481 “Forrestdale Lake and Thomson’s Lake”. Forrestdale Lake is located 1.33 km south of the proposed development and Thomson’s lake is located 9 km to the west. This RAMSAR listed site and the

ecological linkages with Anstey Keane Wetlands and Jandakot Regional Park have not been adequately described in the referral documents and the PER. Nor has the Anstey Keane Bush Forever site. There is no mention that the site is second only in terms of plant species richness to the Brixton St Wetlands.

5. Current Threatening Processes

The referral Attachment 4 describes the many threatening processes currently having an impact upon the biodiversity values of the wetland, including “current and ongoing degradation” by:

- Fire
- Dieback
- Weed invasion (including 3 declared weed species growing in the area)
- Feral animals (foxes, cats, rabbits)
- Interruption of surface water flow
- Off Road Vehicle (ORV) damage
- Rubbish dumping

Still, instead of adding the threat of “native vegetation clearing for development” to the list, as proposed by the City of Armadale, the referral documents describe the proposal as providing a benefit to the biodiversity by providing better protection by fencing the new road. This is flawed reasoning, *ie* nonsense.

It is logical to assume the best protection for the vegetation would be no land clearing for roads and other infrastructure and better management of the Bush Forever site, including monitoring and maintenance of fencing and actively preventing Off Road Vehicle use.

6. Hydrogeology

The references used in the proponent's hydro-geological review all refer to high-level regional water-balances. The proponent fails to assess local impacts of the proposed road development, fill material and stormwater swales on the EPBC listed **critically endangered TEC claypan** which is immediately adjacent to the road proposal; or the impact on the **critically-endangered EPBC listed bee *N.simplicior*** that nests and roosts within this claypan. The proponent reports that no significant hydro-geological impacts will occur as the unmade road is a small-scale local development and could not be expected to affect the water-table (superficial aquifer) - but claypans are often perched, and in fact this is the case. Therefore the claypan's water balance would be sensitive to very small-scale rainwater infiltration and runoff. The proponent has not established whether the claypan is perched. If perched, the EPBC listed TEC would be negatively affected by any water-balance change from altered run-off within the 500m buffer, and the ability of *N.simplicior*, the Short-tongued Bee, to nest is very likely to be affected by changes in soil moisture.

The proponent has not addressed localised hydro-geological impact on the EPBC listed and State listed TECs and PECs, nor on the listed fauna species. The proponent has failed to ascertain the stratigraphy and hydrogeology of the SCP 10 claypan as well as that of the other floristic community types along the proposed road alignment. The stratigraphy is complex and this is reflected in the complex series of 11 floristic communities along the road alignment as shown in Figure 22 of the PER.

GHD in 2006 state in their flora and fauna assessment that this fine-scale local impact of changing seasonal infiltration can be expected to have an impact upon the EPBC TEC listed claypan and the fauna utilising it.

This comment is not addressed in the review of previous work in Attachment 6. There is no reference provided for potential impacts of the Keane Rd proposal at this very local scale. This is a serious omission in the PER.

It is of concern that only the ARI 100 year flood modelling has been included in Figure 20. This may be of interest to engineers designing the road, however it is of lesser concern to those members of the public and the EPA in trying to assess the impact of surface hydrology on the dampland ecology on an annual basis.

Appendix E of the PER details the surface water modelling for the proposal. However this modelling is extremely limited and only addresses the movement of surface water in its undisturbed state. The location for culverts is identified but there is no modelling of surface water flow following the construction of the road. **This is totally unacceptable for a PER as no assessment of the impact from the change in surface water flow can be made. As the environment is a highly biodiverse dampland the surface water flow is a critical value for maintaining the local ecology.** Variations in the depth of surface water or the ponding times will have a significant impact on the environment.

The surface water modelling section appears to devalue the importance of surface water < 0.1 m, and dismisses this as “sheet flow” without a colour on Figure 20. Page 57 states that “As the KRSL area has a relatively flat topography, sheetflow is widespread”. This sheetflow is obviously an essential factor in the survival of the dampland vegetation. The assumption that a road constructed across the dampland with four culverts installed will have a negligible effect on the environment is simplistic and unrealistic and cannot be assessed without some kind of impact modelling. In fact section 10.5.1.6 states that “Hydro-ecology impacts from the proposed project need to be carefully managed to ensure important habitats in the area are not degraded”. Indeed. We expect, however, that it is the job of the proponent to detail what these impacts are, how these impacts are proposed to be managed, and if prevention of degradation is in fact possible. **We believe that prevention of degradation is not possible. The precautionary principle should be applied here: as there is a risk of degradation of critical assets and conservation category wetlands, the lack of scientific evidence dictates that the risk should not be allowed and the road should not be constructed.**

7. Offsets

It is disingenuous and totally unacceptable to offer land as an environmental offset for a specific road construction project in 2013 for land that was earmarked for transfer into the conservation estate in 2005 and is already managed for conservation as a Bush Forever Area or is already in public ownership by the City of Armadale as a reserve. These areas do not qualify as offsets.

- City of Armidale Reserve 27165, documented in 1998:

“Information Sheet on Ramsar Wetlands, Site 487 Forrestdale and Thomsons Lake, Western Australia, 1998”. 26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

The City of Armadale Reserve 27165, which adjoins the eastern side of Forrestdale Lake Nature Reserve, and bushland owned by the Western Australian Planning Commission adjoining the

south-western side of the Nature Reserve have been proposed for future addition to the Nature Reserve (DCLM 2003a)."

From: http://www.ramsar.org/cda/en/ramsar-home/main/ramsar/1_4000_0

- Conservation Commission, Forrestdale Lake 2005:

Forrestdale Lake Nature Reserve Management Plan 2005, Management Plan No. 53. Conservation Commission of Western Australia. Forrestdale Lake Nature Reserve Management Summary, Planning Area and Tenure. Page 41 and 42.

From: www.conservation.wa.gov.au/media/7976/forrestdale_lake_nature...

<p>OBJECTIVE To ensure all lands that comprise the planning area are created as nature reserves and transferred to the Conservation Commission of Western Australia, for management by CALM.</p> <p>THIS WILL BE ACHIEVED BY:</p> <ol style="list-style-type: none">1. Continuing negotiations with the City of Armadale to transfer the vesting of Recreation Reserve 27165 (excluding the Armadale Golf Course) to the Conservation Commission, as nature reserve. [HIGH]2. In conjunction with the Department for Planning and Infrastructure, pursuing the transfer of adjacent land to the south-east and Bush Forever site 345, to the Conservation Commission as nature reserve, as they become available. [HIGH]	<ol style="list-style-type: none">3. Transferring the land that is the existing golf course to the Conservation Commission as nature reserve, when the City of Armadale no longer uses the course. [MEDIUM]4. In conjunction with the Department for Planning and Infrastructure and the City of Armadale, closing the unnecessary road reserves within the planning area for addition to the nature reserve. [MEDIUM]
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Thus:

All the offsets offered do not qualify as they are already badly degraded (ie are not like for like), or are already protected in the Forrestdale Lake Nature Reserve, in Bush Forever, and in the Jandakot Regional Park:

1. Offset 1 east side of Lake Forrestdale is **already protected** under the Forrestdale Lake Management Plan (DPAW). COA land around the golf course is managed by DPAW as part of Forrestdale Lake NR;
2. Offset 2 (Gibbs Road Banjup boundary) next to the Denis De Young reserve is protected within the Jandakot Regional Park;
3. Offset 3 – comprising Commercial Road SW - extremely degraded and unlikely to be used for anything anyway; and unmade Stirling Road - half of it is under wooden pylons. The remainder is good Banksia woodland north end and excellent condition to the south-east. This is already within offset 1;
4. Offset 4 (Bartram Road) extremely degraded;
5. Offset 5 (Napier St, next to Primary School) this 0.4 ha strip, while containing a number of native flora species, is badly infested with veldt grass;
6. Offset 6 (Keane Road alignment southern end) is protected within the Jandakot Regional Park. It includes shrubs on dry clay-pans (excellent condition), a 200m degraded area near Anstey Road, a firebreak, and a small area around some salt water paperbarks on the northern end of this offset.

In summary the proposed offsets do not qualify as offsets, and do not require the City to purchase any damplands or banksia woodlands of similar condition and quality. The areas are already under the City's control and there is no net gain of bushland, only a net loss of the highest quality wetlands. This is totally unacceptable and must be rejected by the EPA as any justification for the proposal.

8. Need for Development

There is a lack of compelling information outlining the necessity of a local road development in the area:

- **Justification**

The need for clearing a road through the Bush Forever Site and Conservation Category Wetland is justified as a transportation necessity; however in reality the proposed road will cut a grand total of 1.89 km from a trip between North Forrestdale and Forrestdale (page 46). The figure of 1.89 km is not mentioned anywhere in the document and must be calculated from Table 7 (page 45). We believe that it would be obvious to anyone that a saving of 1.89 km is a ridiculous figure to use when attempting to justify a major development through this special conservation area. We also believe that it has been a conscious decision by the proponent not to include this figure in any of the PER documents. This omission of the facts when attempting to justify the development is unethical and reflects poorly on the proponent in regards to their duties in preparing a PER.

- **Consideration of alternatives**

There is no relative comparison between the benefits of preserving a Bush Forever site versus a 2 km short cut between existing roads. Alternative, convenient vehicular access to Armadale for Harrisdale residents already exists. Nicholson, Armadale and Ranford Roads will soon become dual carriageways. Alternative access to Harrisdale High School via a cycleway on the western boundary of the Bush Forever site and a bridge over Armadale Road should be considered. The cycleway and bridge would provide access not only to the High School for Forrestdale residents but also to Forrestdale Lake and the Forrestdale trail for Harrisdale residents.

Land zoning in the past resulted in a road easement across the wetland and this easement is now being mis-used as a justification for proposing to build the local road. The natural values of the wetland have become known and appreciated and documented through extensive scientific work, as described in Bushplan 1998 and in the subsequent Bush Forever (2000) Volume 2. The City of Armadale should have taken account of this as the Bush Forever Plan was endorsed and adopted by government in the year 2000 **as a whole of government action plan**. These local roads were supposed to be removed from Bush Forever sites (also see point 4 in Conservation Commission Forrestdale Lake 2005 as above) and there is no justification for now 13 years later proposing to clear CCW vegetation and construct a road through a Bush Forever area.

The proposal by the City of Armadale appears to be a convenient extension of the current road network and corridor for utility services (as mentioned in the Scoping Document, see following section). A similar road proposal to be put across the middle of Kings Park would cause an immediate public outcry, and would not be seriously considered.

In the past, Bush Forever areas in Forrestdale within road reserves have been transferred from the WAPC Structure Plan and incorporated into Jandakot Regional Park. The City of Armadale should cede its vesting in the road reserve so that it can be changed to an A class nature reserve for the purpose of nature conservation to protect this priceless, public jewel of biodiversity.

In summary there is a pathetic and environmentally unacceptable case supporting the development: only cutting 1.89 km from the journey from Forrestdale to North Forrestdale. It is of great concern that this figure is not presented anywhere in the PER and must be manually calculated from Table 7.

9. Clearing Footprint

The PER document mentions that a sewer main will be installed in the corridor, and a water main may be installed (page 42). It is not clear what the effect of this entire transport/services corridor will have on vegetation clearing and alterations to dampland hydrology. It is of great concern that this PER has not assessed the impact of the entire project and states that the Water Corporation “will seek environmental approvals for this separate project” in regards to this co-location of services. This approach makes a mockery of the calculation of percentages of vegetation to be lost and other environmental impacts as approval of this “Stage One” is obviously a precursor to future stages of development along the corridor.

Of further concern is the lack of information on the clearing required for the installation of culverts and fauna underpasses. The culverts will require flow speed reduction devices such as rock rip rap, swales and riffle zones (page 51) however there is no diagram of the proposed construction plans or dimensions of these structures. Without knowledge of the size of the fauna underpasses and culvert outflow structures we are unable to make an assessment or comment on the clearing footprint required for the installation of these structures.

10. Scope of Development

There is a concern that the information provided under the Related Actions/Proposals of the development (Section 1.12 of the Referral of Proposed Action) does not adequately define the future “utility service requirements”.

In the Environmental Scoping Document (EnviroWorks, 2009), Attachment G, on page 11 an extra development is mentioned: *“In addition, if the Keane Road Strategic Link is not available for the installation of a sewer line via standard excavation methods, costs of sewer provision for North Forrestdale are likely to be significantly more “ and “The City is working cooperatively with the Water Corporation to facilitate the co-location of the sewer main as part of the construction project thereby minimising cumulative impacts.”*

Further, “The KRSL will... allow the provision of reticulated water hydrant points for fire fighting” (page 11).

- Can the City of Armadale confirm whether or not a sewer line is proposed for the KRSL?
- Can the City of Armadale confirm whether or not a water main and hydrants are proposed for the KRSL?
- What additional area of Bush Forever Site 342 would be cleared for the “standard excavation methods” required to install a sewer line and also for a water main? With these standard methods, what dewatering would be involved?
- What additional services (such as gas main, telecommunication, power and NBN cabling) are proposed within the “utility service networks”?
- If a sewer line or other utilities are proposed in the future why was there no information about the cumulative impact of such developments in the many consultant's reports?

In summary there is an alarming lack of information regarding the cumulative impact of further development proposals such as planned utilities for the ARSL. This is totally unacceptable. Again this is reason alone for the local road proposal and all infrastructure pipelines and facilities to be rejected as

environmentally unacceptable. It is critically important that this 'first stage' is rejected as further disturbance would have much more damaging impacts. These pipelines etc can easily be constructed along nearby adjacent roads outside conservation lands.

11. Fauna Underpasses

Table 18 from the PER appears to suggest that it has been developed by Bamford Consulting Ecologists (Bamford Consulting Ecologists, 2013a). But, as the Table includes further reference to Bamford 2013a, it appears the proponent has compiled the table and it is not actually the professional opinion of Bamford Consulting Ecologists.

This is of grave concern as under the section "*Water Inundation*" there are statements that imply that the fauna underpasses will not be affected by water inundation, such as "*Underpasses will not be positioned in areas likely to flood; ... it is not expected the underpasses will experience significant inundation... some minor ponding may occur... it is not expected to be significant*".

As we have identified in the section dealing with surface hydrology, the surface water <0.1 m in depth has been dismissed as widespread sheetflow, and has not been shown in the modelling figures (Figure 20 and 21). This widespread sheetflow will of course affect ponding in the underpasses, especially as the road will be built across the very flat dampland and this barrier will only be bisected by three culverts and the fauna underpasses.

We are also concerned about the size of the fauna underpasses. They will not allow Brush Wallaby and kangaroos to move from one side of the dampland to the other. What is the likelihood of the Brush Wallaby jumping the fence and attempting to cross the proposed road? What is the likely impact on Brush Wallaby populations and kangaroos and woylies due to road kill? This issue has not been adequately addressed in the PER, and notably it was immediately raised as a significant concern at the City of Armadale's public meeting held 22 January 2014.

Why has there been no modelling of surface water flow and ponding associated with the fauna underpasses? The PER identifies water ponding and even puddles as a critical factor in animals choosing not to use the underpasses. Do the fauna underpasses exit into the drainage swales? It is unclear from the cross-section plans in the PER. It would be a costly folly for the proponent to install fauna underpasses in a manner in which they will be known to fail. Our concern is that it would be an environmental injustice to install them as a mechanism to reduce the environmental impact of building a road through a conservation area when the proponent knows that they will not work in the manner proposed.

Request to meet with EPA

Representatives of the Urban Bushland Council wish to request the opportunity of a meeting to address the Chairman and Members of the EPA before giving their advice and recommendations on the PER. We may be contacted through our office by phone 9420 7207 (leave a message) or I may be contacted directly on 9271 5707 to arrange a suitable time.

Yours sincerely

President
Urban Bushland Council WA, Inc.

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