Attachment A: General comments on EIS

1. Baseline data

- The EIS includes details of a number of surveys, including the type of survey (eg, fauna habitat assessments), survey efforts (including methods and duration etc). However the details provided in the EIS and the supporting documents are not presented the in a consistent manner. This means that while some surveys and results are detailed to an appropriate standard others are not.
- The EIS does not provide enough detailed information on the condition of the populations and habitats present. This detail is important so that there is a robust set of baseline information from which to monitor. While it is possible that this level of information has been collected, it has not been communicated in the EIS and therefore it will not be possible to gain a full understanding of the environment that will be impacted and therefore the significance of those impacts.
- Surveys that have been conducted are over large areas, however the detail that is provided does not demonstrate that the survey effort over this large area has been adequate. For example, Pg 10-6 10-15 March- aquatic surveys were undertaken along section 1-2. This is all the information that is provided in this section of the EIS. Additional information is present on page 10-23 that details the survey efforts and also in the Biodiversity Working Paper however it is not clear from the information provided over what areas the surveys took place and if this is an adequate representation of the populations and habitats likely to be present in the project area.
- Therefore, given the large quantity of information presented and the differing level of details presented in different sections of the documents it is difficult to ascertain whether or not an appropriate level of information is available on each species, community and habitat type.
- It is important that the appropriate level of detail is obtained and an analysis in provided in a systematic format for each species prior to any impacts being realised so that all impacts can be accurately measured and monitored over time. This should include more detailed mapping of the entire length of the project and surrounds in addition to the significance assessments that have been carried out. This will ensure that the RMS is the best position to implement and/or adapt effective mitigation measures and therefore minimise the long-term impacts of the project.
- Having a consistent level and robust set of baseline data will also ensure that the RMS is in a position to adequately demonstrate its mitigation and management by demonstrating changes over time. This baseline data will be imperative in demonstrating that the RMS has the intention to protect the regions biodiversity values from the impacts of the Pacific Highway Upgrade.

2. Mitigation and Management

a. Management plans

- The EIS and supporting documents refer to the development of specific management plans for individual species, communities and habitats. These management plans should be prepared in a consistent format to ensure efficient and effective assessment and review by the public and by regulators.
- These plans should also be developed and implemented prior to any construction works commencing. This is to ensure that the proposed mitigation and management are appropriate, prior to any impacts being realised.
- They should also be reviewed by a qualified independent expert so that the measures and approaches are 'best practice'. The expert needs to have qualifications and experience in the specific species, community or habitat concerned and be able to prove their expertise.
- It is also important that draft and final plans are made publically available on the RMS website, including the details of the qualified independent expert.

b. Fauna crossings.

- The EIS and supporting documents confirm that mitigation against fragmentation of habitat and populations will include crossing structures, including overpasses (land bridges, canopy bridges, glider poles) and underpasses (culverts, in-stream structures). There is a significant amount of data and literature available on the effectiveness of these types of crossing structures to mitigate against the impacts of linear infrastructure on connectivity. However it is important to note that these mitigation measures are relatively new in Australia and have been subject to rather limited review. It is therefore important that a mix of different crossing techniques are employed for the length of the upgrade and that an adaptive approach is applied, ensuring that additional measures can be implemented if necessary.
- It is also noted that there is a disproportionate number of underpasses to overpasses (land bridges) for ground dwelling species. It is recommended that additional land bridges are included in the mitigation and management strategy.
- In addition, it is noted that underpasses are planned to facilitate Emu crossings. However, page 10-217 of the EIS confirms that there is no evidence that emus have effectively used any particular form of crossing in the past. This suggests that a wider range of crossing structures should be employed to target the emu, including land bridges, to ensure that effective connectivity is maintained.
- This also suggests that there are significant risks associated with the proposed mitigation and the possibility that they will not provide adequate mitigation against fragmentation and loss of access to habitat.

- There is also a lack of information to support the location of each of the crossings. It appears that the location of most crossings has been determined by population and habitat surveys and that little investment has been made into identifying the movement patterns and needs of species and populations over time, including the Emu.
- It is critical that this information is obtained to determine the most suitable location of crossings for each species.
- While it is acknowledged that locating crossing structures in a location that suits a number of species is advantageous, this selection criteria should not be a priority over ensuring crossing structures are located in the optimum crossing location for each individual species even if this means the density of fauna crossings increased significantly.

3. Ongoing monitoring

a. Continued surveying of populations

- The EIS and associated documents provide details on the proposed ongoing monitoring of mitigation and management measures. However, it is important that the health of populations for all threatened species and communities are continually monitored to either validate that impacts are no greater than those predicted or to inform that additional mitigation and management measures are required. Such monitoring should include regular surveys to monitor population size, breeding habits and success, distribution, movements etc.

b. Ensure appropriateness of mitigation measures

- Monitoring commitments should also include commitments to monitor the success of certain mitigation measures, such as fauna crossings, fauna exclusion fencing, revegetation rates etc. Commitments should be very clear and auditable and should be supported by independent expert advice that endorses the monitoring approach.
- Given the long term impacts that the proposal will have it is important that monitoring of mitigation measures is continued for an extended period of time. The proposal will have significant immediate impacts on fauna populations, and it is recognised in the EIS that a period of adjustment will be required for some species to respond to the changes, including the use of fauna crossings, changes in migration/movements. It is therefore critical that a commitment is made to continue monitoring the appropriateness of mitigation measures, including population surveys indefinitely or until there is clear evidence that ongoing monitoring is not required.

c. Adaptive

- Monitoring is a critical component of adaptive management, which is necessary when the full extent of impacts cannot be accurately predicted.

In this case, it is arguable that the extent of impacts is not easily predicted given the number of uncertainties surrounding a number of the proposed mitigation measures, such as the use of the fauna crossings, fish crossings and the likelihood that suitable offsets will be found. In addition, given baseline data is not complete it is highly likely that the full extent of impacts can be accurately predicted.

- It is therefore critical that an adaptive approach to management is applied. However it is noted that adaptive management also provides opportunities for the proponent to limit their level of commitment to certain outcomes or measures. This means it is important that all clear commitments are made to certain management and mitigation measures indefinitely with the view that monitoring will inform future decision making where changes are necessary.

4. Offsets

a. Secured before construction

- The proposal will have a range of significant impacts on a range of important species, communities and habitats that will be unavoidable and difficult to mitigate. The loss of habitat and the significant edge effects of a significant highway will ensure that some impacts will be irreversible. In addition, the extent of these impacts will be unknown for sometime. It is therefore critical that all offsets adequately compensate for attributes that will be lost.
- It is important that certainty around offsets is obtained prior to construction commences. This will ensure that the proponent will deliver offsets in a timely manner and that the conservation gains for the species, communities and habitats being affected will be realised immediately. This will provide adequate time for an assessment/confirmation of the conservation value of these offsets to be undertaken and for management of these areas, research etc to be incorporated into the management plans being prepared.
- Given the loss of habitat due to the project and the impacts on remaining habitat it is critical that part of the offsets proposed includes the purchase and management, in perpetuity, of suitable habitat of the same or greater condition to that is being lost.
- Any consideration of purchase and management of land that contains habitat must also take into account the local need of this habitat and seek to provide offset habitat within the vicinity of the local area.

b. Costs of maintaining offsets

- As management of land for conservation carries significant financial costs, it is important that the RMS is required to ensure measures are put in place that ensure financial costs of management are covered in perpetuity.

- Given the proposed highway is expected to be in use and therefore managed for generations to come, it should also be expected that the environmental management requirements, including offsets, are budgeted for and commitments to ongoing management are made.