Relocation of Kalbarri Airport

Shire of Northampton

Report and recommendations of the Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
Bulletin 986
August 2000

ISBN. 0 7307 6609 8
ISSN. 1030 - 0120
Assessment No.1252

Summary and recommendations

The Shire of Northampton proposes to develop a dual runway airport on a reserve, 8 kilometres (km) east of the town of Kalbarri to improve aircraft access to Kalbarri. The airport is proposed to replace the present airstrip, located 7 km south of Kalbarri.

This report provides the Environmental Protection Authority's (EPA's) advice and recommendations to the Minister for the Environment on the environmental factors relevant to the proposal.

Section 44 of the *Environmental Protection Act 1986* (the EP Act) requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

Relevant environmental factors

It is the EPA's opinion that the following are the environmental factors relevant to the proposal which require detailed evaluation in this report:

a) Terrestrial Flora and Fauna:- effect on the conservation of native vegetation communities and related habitats from clearing of the airport site and other potential impacts of environmental weeds, disease and fire;

b) Declared Rare and Priority Flora:- effect on the priority flora species *Hemigenia pimelifolia*;

c) Groundwater Quality:- effect on groundwater quality in the unconfined Tumblagooda Sandstone aquifer; and

d) Aircraft Noise:- effects of noise on residents of Kalbarri and users of the Kalbarri National Park.

Conclusions

The EPA has considered the proposal by the Shire of Northampton to construct and operate a new airport within the airport reserve approximately 8 km east of Kalbarri.

The EPA notes that the site selected for the proposed airport was one of a number of options considered with reference to economic, aviation safety, environmental and engineering considerations, and that the 1992 decision of the State Government to allow excision of the airport site from the Kalbarri National Park, included the identification of a parcel of unallocated Crown land adjoining the eastern boundary of the Kalbarri National Park for future addition to the nature conservation reserve system.

The EPA has concluded that the proposal to establish the airport on the selected site is capable of being managed in an environmentally acceptable manner such that it is most unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Section 4, including the proponent's commitments.

Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the project being assessed is for the construction and operation of a new airport in the Shire of Northampton's airport reserve 8km east of Kalbarri, to replace the existing airstrip south of the town.
2. That the Minister considers the report on the relevant environmental factors as set out in Section 3;
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4 and summarised in Section 4, including the proponent's commitments;
4. That the Minister imposes the conditions and procedures recommended in Appendix 4 of this report; and
5. That the Minister notes the advice provided in Section 5 of the report in relation to the addition of the identified parcel of unallocated Crown land to Western Australia's conservation reserve system.

Conditions

Having considered the proponent's commitments and the information provided in this report, the EPA has developed a set of conditions which the EPA recommends be imposed if the proposal by the Shire of Northampton to construct and operate the new Kalbarri Airport is approved for implementation. These conditions are presented in Appendix 4. Matters addressed in the conditions include the recommendation that the proponent be required to fulfil the commitments in the Consolidated Commitments statement set out as an attachment to the recommended conditions in Appendix 4.

Contents

Table

Figures

Appendices

1. Introduction and background

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment on the environmental factors relevant to the proposal by the Shire of Northampton to develop and operate a new dual runway airport within a reserve located approximately 8 km east of Kalbarri.

The new airport is proposed to replace the present airstrip, located 7km south of Kalbarri, which is not currently suitable for use by larger than light (5 – 10 seat) aircraft and does not meet the recommended standard for use by the Royal Flying Doctor Service (RFDS).

The proposed site for the airport was identified in a study conducted for the Shire and the WA Department of Transport in 1988 by Wallace Emery and Associates, airport civil engineering consultants which took into account projected air traffic demand, cost, engineering requirements, aviation safety, long term expansion potential and impact on the Kalbarri National Park (Wallace Emery and Associates, 1988).

Following site identification, the site for the airport was excised from Kalbarri National Park by Parliament in 1994. Between 1994 and 1999 the Shire of Northampton and State Government agencies undertook further planning and feasibility analysis of options for developing the present proposal, which was referred to the EPA in November 1998.

The EPA set the level of assessment for the proposal at Consultative Environmental Review (CER) in order to ensure that the airport proposal was appropriately located, designed and managed so as to meet the EPA's objectives for the protection of the environment.

Further details of the proposal are presented in Section 2 of this report. Section 3 discusses environmental factors relevant to the proposal. The Conditions and commitments to which the proposal should be subject, if the Minister determines that it may be implemented, are set out in Section 4. Section 5 provides Other Advice by the EPA, Section 6 presents the EPA's conclusions and Section 7, the EPA's Recommendations.

Appendix 1 to this report contains a list of organisations and individuals who made submissions on this proposal. Appendix 2 contains the references used in the EPA's report. Appendix 4 contains a summary of the identification of the relevant environmental factors for the EPA's assessment and Appendix 4, the EPA's recommended environmental conditions and the proponent's commitments.

A summary of issues raised in submissions and the proponent's response to each of these issues is provided as Appendix 5. This document is included as a matter of information only and does not form part of the EPA's report and recommendations. However specific issues taken into account by the EPA and arising from the submissions, appear in the report itself.

2. The proposal

The proposed airport will be located within a specially created airport reserve approximately 9km east of Kalbarri. This reserve was excised from the Kalbarri National Park as part of a larger 3200 hectare (ha) parcel of land excised for general public purposes in 1994 (Figure 1). At the time of the excision, a parcel of unoccupied Crown land (of area approximately 30 000 hectares) was identified for potential addition to Western Australia's nature conservation reserve system to offset the land excised. This matter is discussed further in Section 5 of this report.

The area of the airport reserve is 633ha, of which 48ha will be cleared for runways, a facilities area and an access road. The remaining 585ha of the airport reserve is proposed to remain undeveloped (Figure 2) and is bounded on three sides by Kalbarri National Park.

The new airport has been designed to allow for future use by BAE-146 aircraft. However, these larger aircraft are not expected to use the airport in the short to medium term. The largest aircraft likely to use the airport in the short to medium term are the Fokker F50 (46 seats) and the Dash 8 (36 seats), with a maximum of around three services per week.

The second (cross) runway, which is to be used for landing light aircraft under strong east-west wind conditions, is not required for the first few years of the proposal and will be built in the future when demand and circumstances require its construction.

The main characteristics of the proposal are summarised in Table 1 below. A detailed description of the proposal is provided in Section 4 of the CER (Alan Tingay & Associates, 2000)

Table 1 - Summary of key proposal characteristics

Element	Description
Location	Approx. 8kilometres east of Kalbarri on the south side of the Ajana-Kalbarri Road
Airport reserve total area	633hectares
Area of disturbance	48 hectares
Primary airstrip length (initial)	1600metres
Primary airstrip length (final)	1800metres
Cross runway length	1000metres
Primary airstrip bearing	180/360° (true)
Cross runway bearing	85/265° (true)
Facilities area	Approximately 180 x 180metres (3.25 hectares)
Access road dimensions (maximum disturbance width and length)	20metres x 1.4kilometres

Since its release, an error has been discovered in Figure 6 of the CER. The precise location of the airport site, which has now been established through a recent detailed site survey, lies approximately 400 metres south of the location shown in Figure 6 of the CER. The precise location of the airport is shown in Figure 3 of this report. However, this variation will not alter the environmental impacts of the proposal.

3. Relevant environmental factors

Section 44 of the *Environmental Protection Act 1986* (the EP Act) requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and the conditions and procedures, if any, to which the proposal should be subject. In addition, the EPA may make recommendations as it sees fit.

The identification process for the relevant factors is summarised in Appendix 3.

It is the EPA's opinion that the following are the environmental factors relevant to the proposal which require detailed evaluation in this report:

(a) Terrestrial Flora and Fauna:- effect on the conservation of native vegetation communities and related habitats from clearing of the airport site and other potential impacts of environmental weeds, disease and fire;

(b) Declared Rare and Priority Flora:- effect on the priority flora species *Hemigenia pimelifolia*;

(c) Groundwater Quality:- effect on groundwater quality in the unconfined Tumblagooda Sandstone aquifer; and

(d) Aircraft Noise:- effects of noise on residents of Kalbarri and users of the Kalbarri National Park.

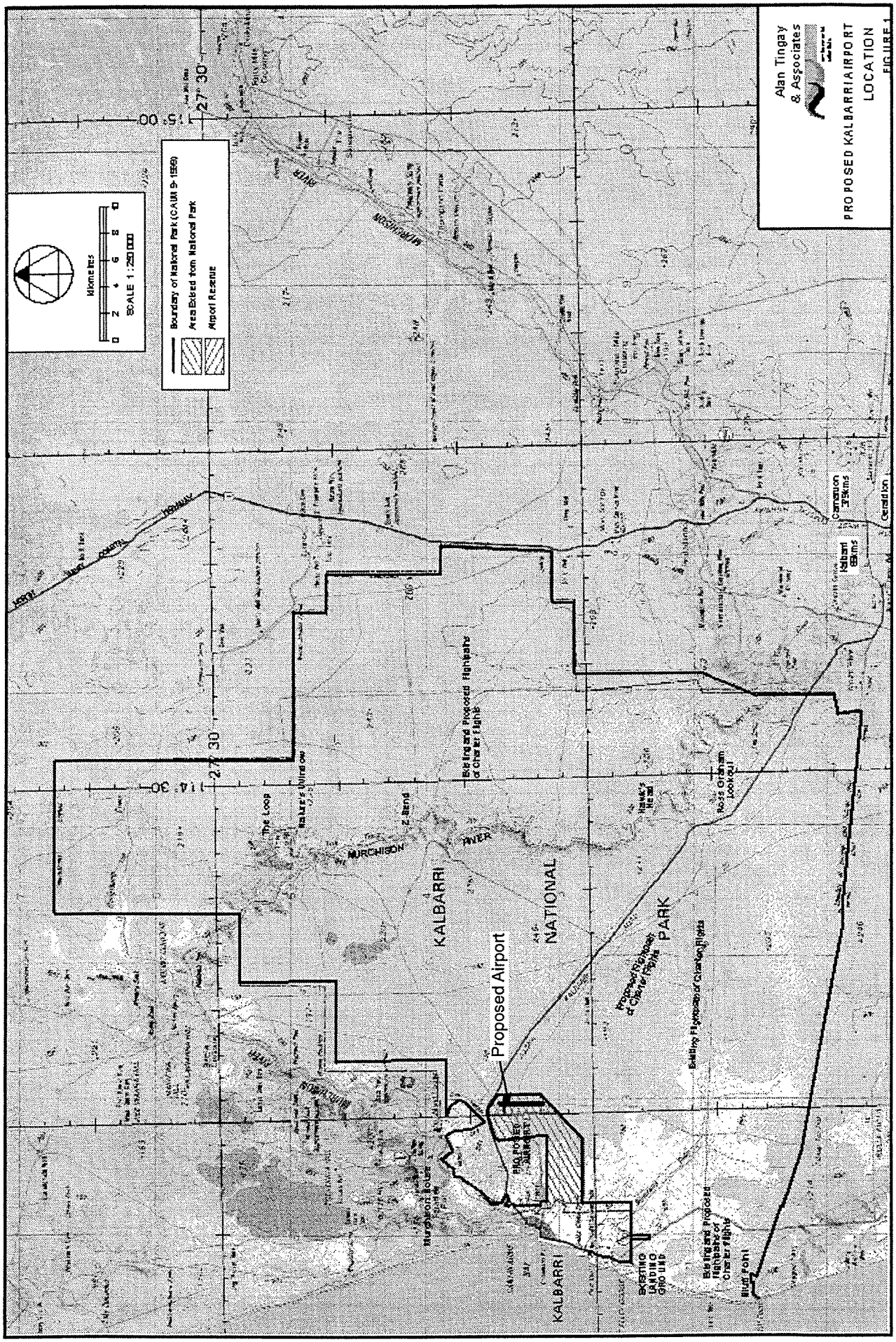

Figure 1. Locality map of the Kalbarri area and the airport site (Source: CER, Fig.1)

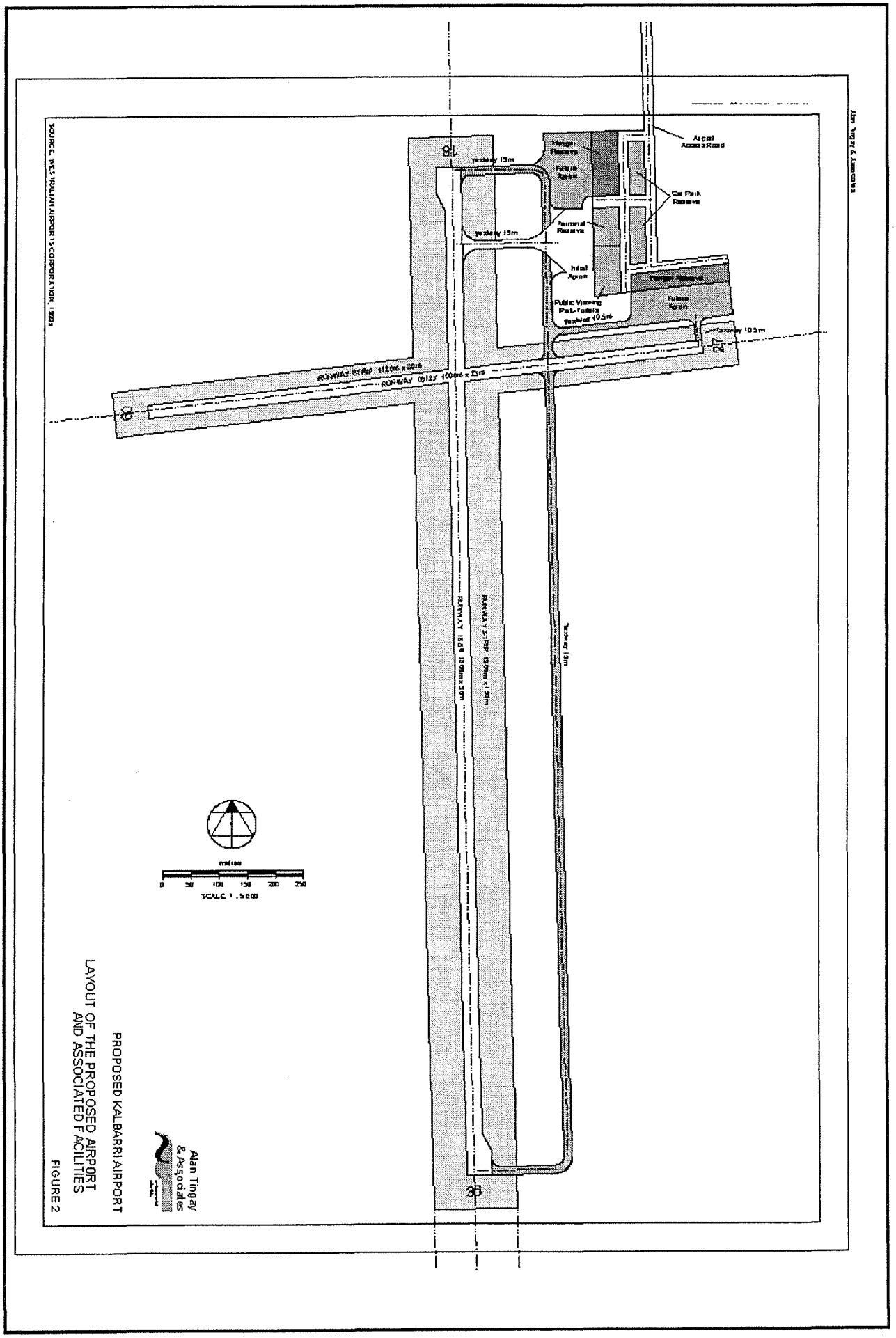

Figure 2. Site plan of the proposal (Source: CER, Fig.2).

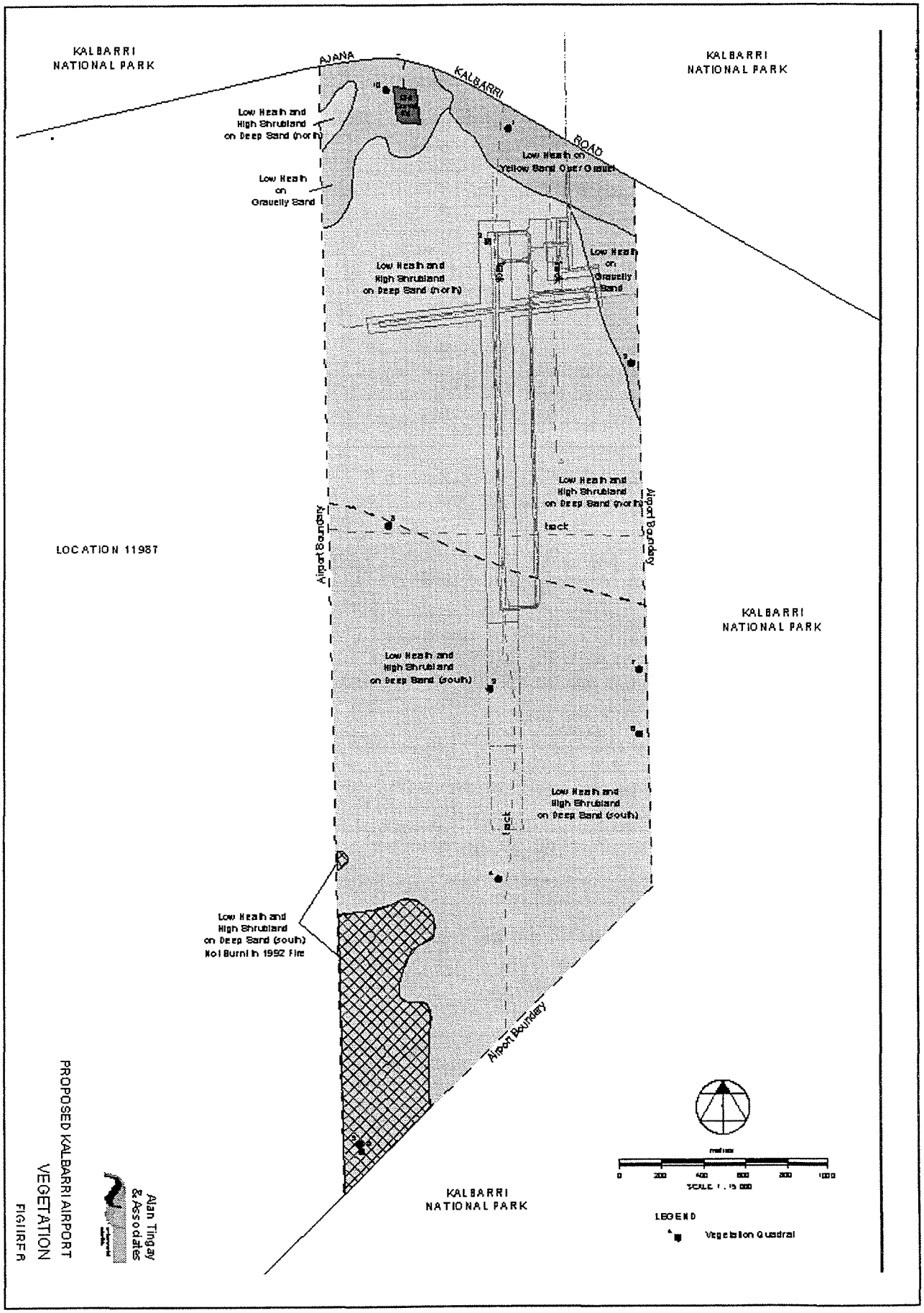

Figure 3. Airport layout and vegetation affected (Source: CER, Fig.6 as amended June 2000).

The above relevant factors were identified from the EPA's consideration and review of all environmental factors (preliminary factors) generated from the CER document and the submissions received, in conjunction with the proposal characteristics.

Discussion of the relevant environmental factors and their assessment is contained in Sections 3.1 - 3.4. The discussion of each factor explains why it is relevant to the proposal and how it will be affected by the proposal. The assessment of each factor explains how the EPA decides whether or not a proposal meets the environmental objective set for that factor.

3.1 Terrestrial flora and fauna

Description

The clearing of 48 hectares of native vegetation and construction and operation of the airport has the potential to affect the representation and viability of vegetation communities and associated fauna populations on the airport reserve and the Kalbarri National Park.

Submissions

A number of submissions raised issues relating to the significance of the plant and animal communities on the subject land and the quality of the biological surveys undertaken by the proponent.

A number of submissions also raised issues relating to the potential for the airport to introduce or exacerbate threats such as weeds, plant disease and fire.

Advice provided by the Department of Conservation and Land Management (CALM) suggested that the proponent should be required to use only locally native species for rehabilitation and other planting. However, CALM also advised that in its view the impacts of the airport proposal on flora and fauna and on the adjacent Kalbarri National Park can be managed under the proposed commitments.

Assessment

The area considered for assessment of this factor is the airport reserve and the adjacent portions of the Kalbarri National Park.

The EPA's environmental objectives for this factor are:

(i) to maintain the abundance, species diversity, geographic distribution and productivity of vegetation communities; and

(ii) to ensure that the proposal does not significantly increase the risk of adverse impacts on surrounding flora and fauna from the spread of exotic species, diseases or wildfire.

Clearing Impacts

The proposal will result in the permanent loss of approximately 48 hectares of vegetation which is in very good condition, comprising 3 identified community types within the 'Scrub heath on yellow sand plain' vegetation type (Beard 1976).

The proponent intends to manage the uncleared portion of the greater airport reserve (585 hectares) to protect the flora and fauna values present. The proponent has also provided a commitment to rehabilitate approximately 10 hectares of land which is mapped by Beard as 'Scrub heath on yellow sand plain' on the site of the present airport, for reincorporation into the Kalbarri National Park.

There are approximately 97 000 hectares of the 'Scrub heath on yellow sand plain' vegetation type within the Kalbarri National Park. Although plant communities vary considerably within the vegetation type according to a range of factors, it is likely, based on the results of the

surveys conducted, that the communities affected by clearing for the airport will be well represented within the surrounding airport reserve and the Kalbarri National Park.

This will also mean that the impacts on fauna species associated with the Scrub Heath vegetation are likely to be limited to potential impacts on individual animals (through mortality associated with chance events such as road-kill or opportunistic predation) rather than affecting the viability of populations or the conservation status of species.

Survey Requirements

The EPA has recently published a Position Statement on the general requirements for biological surveys for environmental impact assessment (EIA) in Western Australia (EPA, 2000). This Position Statement, which outlines the EPA's general approach to survey requirements, will shortly be followed by the publication of more detailed guidelines for biological surveys for EIA, in the form of an EPA Guidance. The biological survey Guidance is expected to provide more prescriptive advice to proponents, environmental consultants and other stakeholders in terms of the EPA's preferred approach to matters such as survey timing, sampling intensity, methodology and other considerations, based on input from a range of stakeholders, including conservation organisations, government agencies and environmental professionals.

However until this Guidance is finalised, the EPA will continue to base its judgement of the technical and methodological adequacy of biological surveys for EIA, on advice received from the Department of Conservation and Land Management (CALM) which is the government agency presently charged with the responsibility for the protection of flora and fauna in Western Australia. CALM's advice in response to the CER for this proposal has not expressed any level of dissatisfaction with the standard of the biological surveys conducted. Additionally the fauna survey conducted is in general accord with the requirements of the EPA's Preliminary Position Statement Number 3 (General Requirements for Terrestrial Biological Surveys).

Effects on viability

In order to address the potential impact of the airport on native vegetation through introduction or intensification of threats such as weeds, disease and fire the proponent has provided commitments to:

- prepare and implement a weed and disease management plan;
- select appropriate species and stock for planting;
- prepare and implement a fire management plan; and
- minimise the introduction or promotion of feral animals including rabbits foxes and mice through project design and specifically targeted feral animal control measures.

The proponent has also provided an additional commitment since the publication of the CER to prepare and implement a revegetation plan for the new airport site as well as the current airport site, which is to be rehabilitated. This plan will be to the requirements of CALM and the DEP.

Summary

Having particular regard to :

(a) the relatively small area of clearing associated with the proposal in comparison to the area of the affected communities retained in the airport reserve and the Kalbarri National Park;

(b) the advice of CALM in relation to the potential to manage the impacts of the proposal on flora and fauna and the National Park; and

(c) the proponent's commitments,

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor.

3.2 Rare and priority flora

Description

Clearing of vegetation on the airport reserve will impact on some individual plants of flora species which are listed in CALM's priority flora list, as described in Section 6.2 of the CER.

Submissions

One submission expressed the view that the proponent should be responsible for preparing a recovery plan for the priority flora species *Hemigenia pimelifolia.*

CALM advised that *Hemigenia pimelifolia* has been reclassified to Priority 1 and that the proponent should be required to undertake a detailed survey for this species so that the loss of these plants can be placed into context.

Assessment

The area considered for assessment of this factor is the airport reserve and adjacent Kalbarri National Park.

The EPA's environmental objective for this factor is to protect Declared Rare and Priority Flora, consistent with the provisions of the *Wildlife Conservation Act 1950.*

The proponent provided a commitment in the CER to undertake further surveys of the airport reserve for further populations of the species.

However, CALM has recently advised that *Hemigenia pimelifolia* which was previously listed as Priority 3, has now been reclassified to Priority 1 and that further work should be undertaken by the proponent to ensure that airport proposal does not impact significantly on the species.

Since receiving this advice, the DEP has consulted with the proponent in respect of the CALM advice and the proponent has provided an additional commitment to demonstrate, through further survey work prior to commencing construction, that the airport proposal will not have a significant adverse impact on the conservation status of *Hemigenia pimelifolia.*

Summary

Having particular regard to:

(a) the advice of CALM in relation to the conservation significance of *Hemigenia pimelifolia*; and

(b) the proponent's commitments,

it is the EPA's opinion that the proposal is capable of being managed to meet the EPA's environmental objective for this factor, provided that the further survey work to be carried out as part of the proponent's commitment, locates further populations of *Hemigenia pimelifolia* and the proponent can demonstrate, to CALM's satisfaction, that the airport will not significantly compromise the conservation status of the species.

3.3 Groundwater quality

Description

The construction and operation of the airport proposal has some potential to lead to pollution of groundwater in the Tumblagooda sandstone unconfined aquifer, which lies beneath the airport site and parts of the Kalbarri National Park.

Submissions

The Water and Rivers Commission (WRC) has advised that the potential impact of fuel spills should be addressed by the installation of above ground storage tanks in fully bunded areas. The Commission has also advised that fuel storage should be subject to stringent conditions given the location of this proposal in relation to the Kalbarri National Park and an unconfined aquifer.

One submission expressed the view that underground storage of aviation fuel in the sensitive area of the proposed development and above an unconfined aquifer, which may have connections to karst systems, is inappropriate. This submission proposed that conditions to ensure zero fuel leakage to the environment are essential.

Assessment

The area considered for assessment of this factor is the airport reserve and the Tumblagooda Sandstone aquifer (part of which is used as the town water supply for Kalbarri).

The EPA's environmental objective for this factor is to maintain or improve the quality of groundwater to ensure that existing and potential uses, including ecosystem maintenance are protected, consistent with the draft WA Guidelines for Fresh and Marine Waters and the NHMRC / ARMCANZ Australian Drinking Water Guidelines - National Water Quality Management Strategy.

The EPA notes that the proposal is located above an unconfined sandstone aquifer and that this aquifer is used as the public water supply for the town of Kalbarri. The EPA also notes that the proponent has committed in the CER document to:

- constructing above ground fuel storage to relevant Australian Standards (which requires bunding); and
- installing a septic or package sewage treatment plant (when demand increases) to Health Department WA requirements.

Based on the advice of the WRC and consultation between the proponent and the DEP, the proponent has provided an additional commitment to develop and implement a groundwater protection plan for the airport to the requirements of the DEP, on the advice of the Water and Rivers Commission and the Department of Minerals and Energy.

Summary

Having particular regard to:

(a) the advice of the WRC in relation to potential for impacts on the groundwater aquifer and the need for appropriate management; and,

(b) the proponent's commitments,

it is the EPA's opinion that the proposal is capable of being managed to meet the EPA's environmental objective for this factor provided that a groundwater protection plan is developed and implemented in accordance with the proponent's commitment, to the requirements of the WRC.

3.4 Aircraft noise

Description

The operation of the airport has the potential to increase noise levels from aircraft in the Kalbarri Townsite and in the Kalbarri National Park.

Submissions

A number of public submissions and CALM raised the issue of the potential impact of aircraft flights related to the relocation of the airport on users of Kalbarri National Park.

CALM has advised that development of flying protocols should be given a high priority by the Department of Transport, Air Services Australia and the Shire of Northampton to protect Kalbarri National Park's visitor amenity values.

CALM also advised that:

"The noise generated by aircraft movements over the gorge area within and adjacent to Kalbarri National Park, including Murchison House Station, will have a significant impact on visitors and ground-based tour operators who use this area. Integral to the protection of the National Park's visitor values is the exclusion of the Murchison River Gorge area from flight and approach paths where alternatives are available. The management plan for Kalbarri National Park, currently in preparation by CALM, will consider regulation of scenic flights over the gorge."

Assessment

The area considered for assessment of this factor is the town of Kalbarri, the residence at Murchison House Station and Kalbarri National Park.

The EPA's environmental objectives for this factor are:

(i) to ensure that the LA max does not exceed 75dB (A) for occasional (1 flight per day) large jet aircraft and 65 dB (A) for general aviation aircraft and the Ldn does not exceed 55 dB (A) at any residence; and

(ii) to minimise adverse impacts on the human uses of the Kalbarri National Park.

The DEP has advised that the proposal is capable of meeting the requirements of the Environmental Protection (Noise) Regulations 1997 with respect to construction noise and can be managed to meet the EPA's above objectives.

The EPA notes the advice of the DEP and agrees that based on the predictions and supporting information provided in the CER, the proposal can be managed to meet the EPA's objectives.

The proponent has committed within the CER, to liaising with the Department of Transport, Air Services Australia and CALM in order to develop a 'fly friendly protocol' for publication in the Air Services Australia document 'Enroute Supplement Australia (ERSA).'

Although Enroute Supplement Australia is an advisory document for pilots, the EPA understands that compliance with advice provided in ERSA is generally high and that ERSA instructions apply to all aircraft overflying the Kalbarri National Park, rather than only that traffic originating from Kalbarri Airport.

Summary

Having particular regard to:

(a) the advice of the DEP in relation to noise impacts from the airport; and

(b) the proponent's commitments,

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor.

4. Conditions and commitments

Section 44 of the Environmental Protection Act requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

In developing recommended conditions for each project, the EPA's preferred course of action is to have the proponent provide an array of commitments to ameliorate the impacts of the proposal on the environment. The commitments are considered by the EPA as part of its assessment of the proposal and, following discussion with the proponent, the EPA may seek additional commitments.

The EPA recognises that not all of the commitments are written in a form which makes them readily enforceable, but they do provide a clear statement of the action to be taken as part of the proponent's responsibility for, and commitment to, continuous improvement in environmental performance. The commitments, modified if necessary to ensure enforceability, then form part of the conditions to which the proposal should be subject, if it is to be implemented.

4.1 Proponent's commitments

The proponent's commitments as set in the CER and subsequently modified, as shown in Appendix 4, should be made enforceable.

4.2 Recommended conditions

Having considered the proponent's commitments and the information provided in this report, the EPA has developed a set of conditions, which the EPA recommends be imposed if the proposal by the Shire of Northampton to construct and operate the new Kalbarri Airport is approved for implementation.

These conditions are presented in Appendix 4. Matters addressed in the conditions include the recommendation that the proponent be required to fulfil the commitments in the Consolidated Commitments statement set out as an attachment to the recommended conditions in Appendix 4.

5. Other advice

The EPA notes that the site selected for the proposed airport was one of a number of options considered with reference to economic, aviation safety, environmental and engineering considerations.

The EPA is also aware that the arrangements agreed between parties involved in the discussions leading to 1992 decision of the State Government to allow excision of the airport site from former Kalbarri National Park included the identification of a 30 000 hectare parcel of unallocated Crown land adjoining the eastern boundary of the Kalbarri National Park for future addition to the nature conservation reserve system. The location of this land (which appears to contain vegetation types which do not presently occur in the Kalbarri National Park and are poorly represented in nature conservation reserves generally) is shown in Figure 4.

The EPA is aware that the inclusion of the unallocated Crown land parcel is yet to undergo the formal Government processes required for incorporation into the nature conservation reserve system. The EPA strongly supports the incorporation of the subject land into the conservation reserve system by the Government at the earliest opportunity.

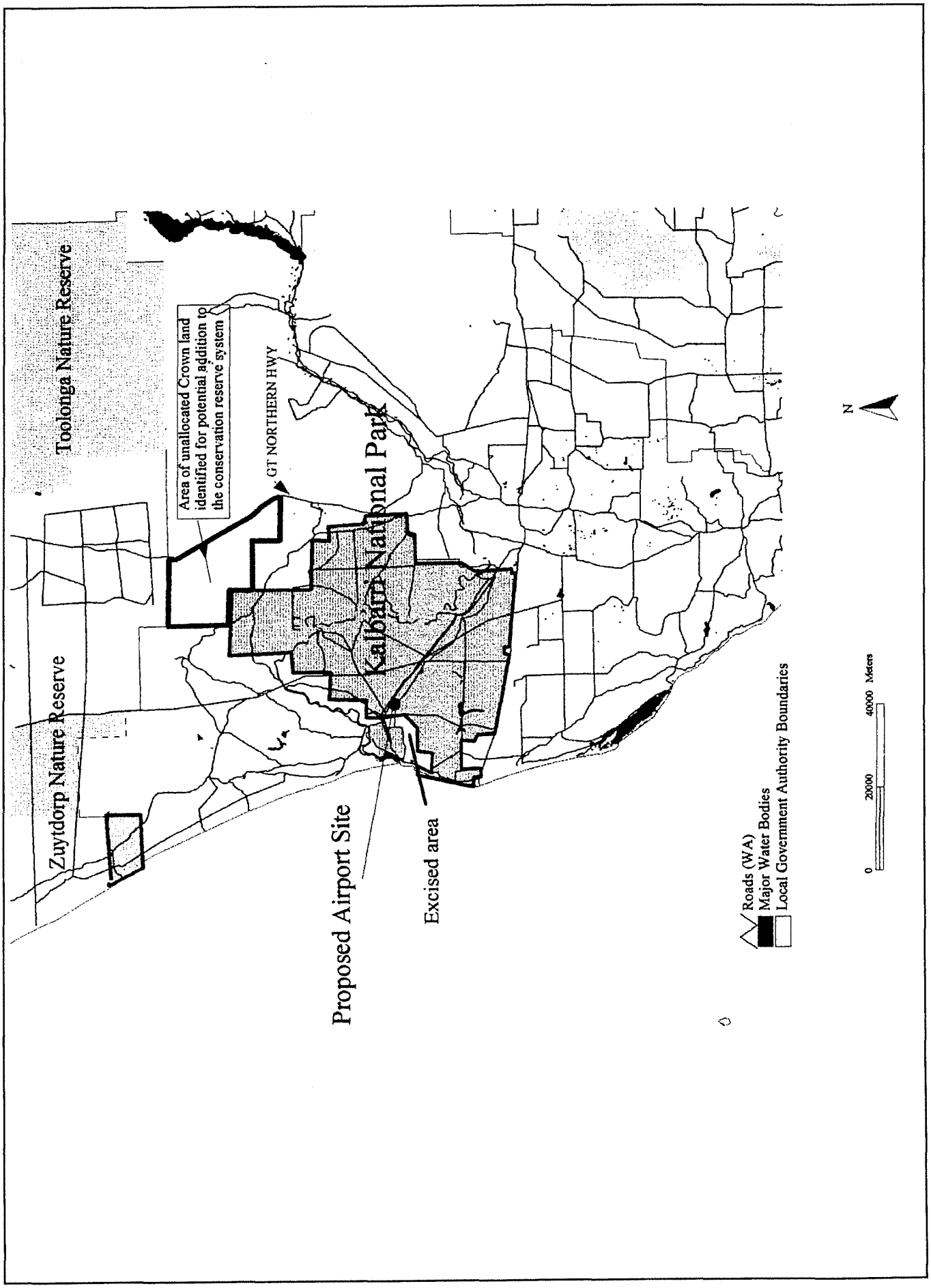

Figure 4. Location of unallocated Crown land identified for future inclusion in the conservation reserve system.

6. Conclusions

The EPA has considered the proposal by the Shire of Northampton to construct and operate a new airport within the airport reserve approximately 8 km east of Kalbarri.

The EPA notes that the site selected for the proposed airport was one of a number of options considered with reference to economic, aviation safety, environmental and engineering considerations, and that the 1992 decision of the Government to allow excision of the airport site from the Kalbarri National Park, included the identification of a parcel of unallocated Crown land adjoining the eastern boundary of the Kalbarri National Park for future addition to the nature conservation reserve system.

The EPA has concluded that the proposal to establish the airport on the selected site is capable of being managed in an environmentally acceptable manner such that it is most unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Section 4, including the proponent's commitments.

7. Recommendations

Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the project being assessed is for the construction and operation of a new airport in the Shire of Northampton's airport reserve 8km east of Kalbarri, to replace the existing airstrip south of the town.
2. That the Minister considers the report on the relevant environmental factors as set out in Section 3;
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4 and summarised in Section 4, including the proponent's commitments;
4. That the Minister imposes the conditions and procedures recommended in Appendix 4 of this report; and
5. That the Minister notes the advice provided in Section 5 of the report in relation to the addition of the identified parcel of unallocated Crown land to Western Australia's conservation reserve system.

Appendix 1

List of submitters

Organisations:

- Air Services Australia
- Australian Heritage Commission
- Conservation Council of Western Australia
- Department of Aboriginal Affairs
- Department of Conservation and Land Management
- Mid-West Development Commission
- Water and Rivers Commission
- Wildflower Society of Western Australia.

Individuals:

Hon Giz Watson MLC

Appendix 2

References

References

Alan Tingay & Associates (2000). *Consultative Environmental Review: New Kalbarri Airport.*

Beard. J.S (1976) *The Vegetation of the Ajana Area Western Australia.* Vegmap Publications.

Environmental Protection Authority (EPA) 1992. *Draft Western Australian Water Quality Guidelines for Fresh and Marine Waters.* EPA Bulletin 711, October 1993.

Environmental Protection Authority (EPA) 2000. General Requirements for Terrestrial Biological Surveys for Environmental Impact Assessment (EIA) in Western Australia *Preliminary Position Statement No 3.*

Environmental Protection (Noise) Regulations 1997

Wallace Emery & Associates (1988). *Kalbarri Aerodrome Investigation.* Unpublished report to the WA Department of Transport and the Mid –West Development Commission.

Appendix 3

Summary of identification of relevant environmental factors

Appendix 3: Summary of Identification of Relevant Environmental Factors

Preliminary Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
BIOPHYSICAL			
Terrestrial Flora and Fauna (Vegetation communities)	The clearing of 48 hectares of native vegetation and construction and operation of the airport has the potential to affect the representation and viability of vegetation communities on the airport reserve and the Kalbarri National park.	CALM has advised that the potential for impact of the proposal on the conservation values of the Kalbarri National Park will be minimal if the proponent's commitments and Ministerial Conditions are implemented. Public submissions have raised issues regarding the adequacy of the flora and vegetation survey and the impact of the proposal on vegetation as a result of increased fragmentation and exposure to degrading processes.	**Considered to be a relevant environmental factor**
Declared Rare and Priority Flora	Clearing of vegetation on the airport site will impact on some individuals of flora species which are listed in CALM's priority flora list as described in Section 6.2 of the CER.	CALM has advised that *Hemigenia pimelifolia* has been reclassified to Priority 1 and that the proponent should be required to undertake a detailed survey of populations of this species so that the loss of these plants can be put into context.	**Considered to be a relevant environmental factor**
Terrestrial Flora and Fauna (cont'd) Environmental weeds, disease and fire	The clearing of 48 hectares of native vegetation and construction and operation of the airport has the potential to introduce or exacerbate effects of these threats on vegetation communities on the airport reserve and in the Kalbarri National Park.	Several submissions, including the submission of the Australian Heritage Commission, have identified impacts on the vegetation in and surrounding the airport reserve which may result from fragmentation (such as weeds, fires and dieback) as a significant issue. CALM has advised that only native species propagated from local stock should be used for landscaping and rehabilitation to reduce the chance of accidental introduction of non-native plants and weeds.	**Considered to be a relevant environmental factor**

Preliminary Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
Terrestrial Fauna (including specially protected fauna)	The clearing of 48 hectares of native vegetation and construction and operation of the airport has the potential to lead to the death of individual animals directly during construction or as a result of temporary habitat displacement.	Several submissions, including the submission of the Australian Heritage Commission, have expressed concern with respect to the intensity of the fauna survey and potential impacts on specific fauna species and fauna generally.	CALM's advice in response to the CER has not highlighted any level of dissatisfaction with the standard of the biological surveys conducted and has indicated that fauna issues raised by the AHC may be based on errors in computerised database information. The fauna survey conducted is in general accord with the requirements of the EPA's preliminary Position Statement on general requirements for terrestrial biological surveys. The area impacted by the proposal is small relative to the area of similar native vegetation available as habitat. **Therefore this is not considered to be a relevant environmental factor.**
Land (Soil erosion)	The clearing of 48 hectares of native vegetation and construction and operation of the airport has the potential to lead to wind and / or water erosion.	One submission questioned whether a Notice of Intent was required for the clearing associated with this proposal and whether this had been submitted.	The Commissioner for Soil and Land Conservation will consider a Notice of Intent for the proposed clearing after the EPA's assessment has been completed. Based on previous advice to the Shire of Northampton from the Commissioner, the land degradation risks from the proposal are manageable and land degradation is unlikely. **Therefore this is not considered to be a relevant environmental factor.**

Preliminary Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
POLLUTION MANAGEMENT			
Groundwater quality	The construction and operation of the airport proposal has some potential to lead to pollution of groundwater (particularly from hydrocarbons) in the Tumblagooda sandstone unconfined aquifer.	The Water and Rivers Commission has advised that the potential impact of fuel spills should be addressed by the installation of above ground storage tanks in fully bunded areas and that fuel storage should be subject to stringent conditions given the location of this proposal in relation to the Kalbarri National Park and an unconfined aquifer. One submission expressed the view that underground storage of aviation fuel in the sensitive area of the proposed development and above an unconfined aquifer, which may have connections to karst systems, is inappropriate. This submission proposed that conditions to ensure zero fuel leakage to the environment are essential.	**Considered to be a relevant environmental factor.**
Aircraft noise **(Effects of noise on residents of Kalbarri and users of the Kalbarri National Park)**	The operation of the airport has the potential to increase noise levels from aircraft in the Kalbarri Townsite and in the Kalbarri National Park.	CALM has advised that development of flying protocols must be given priority by the Department of Transport, Air Services Australia and the Shire of Northampton to protect Kalbarri National Park's visitor values. CALM also advised that: *"The noise generated by aircraft movements over the gorge area within and adjacent to Kalbarri National Park, including Murchison House Station, will have a significant impact on visitors and ground-based tour operators who use this area. Integral to the protection of the national Park's visitor values is the exclusion of the Murchison River Gorge area from flight and approach paths where alternatives are available. The management plan for Kalbarri National Park, currently in preparation by CALM, will consider regulation of scenic flights over the gorge."* Several public submissions raised issues with respect to the impact of aircraft noise on users of Kalbarri National Park.	**Considered to be a relevant environmental factor.**

Preliminary Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
SOCIAL SURROUNDINGS			
Aesthetic **Visual amenity**	The airport site and access road may have visual impacts.	One submission suggested that the proponent should provide a commitment to ensure that the site is not visible from the Meanarra lookout, Ajana Road and the main visitor locations within the National Park rather than stating this in the CER.	The EPA has viewed the site of the proposed airport and is confident that the site will be located so that it is not visible from the Ajana-Kalbarri Road, the main visitor locations within the Kalbarri National Park or Meanarra Hill tourist lookout. **Therefore this is not considered to be a relevant environmental factor.**
Culture and Heritage (Heritage)	The Airport site is listed on the Register of the National Estate.	The Department of Aboriginal Affairs and the Australian Heritage Commission have made specific recommendations with respect to management of the construction phase of the airport.	The EPA considers that the advice of the Department of Aboriginal Affairs can be implemented through the proponent's commitments and the legal requirements of the *Aboriginal Heritage Act 1972*. **Therefore this is not considered to be a relevant environmental factor.**
GENERAL			
Identification of site alternatives	Alternatives to the present proposal were identified in a previous study by Wallace Emery & Associates (1988). Options considered included extending the present airport runway into freehold land.	The Australian Heritage Commission submitted the view that (the Commission) *"is not satisfied that the proponent has explored all feasible alternatives in choosing this site"* and added that *"the Commission suggests that the proponent explore further areas that do not have a significant effect on the flora and fauna of the area"* A number of submissions also expressed concern about the degree to which environmental factors were taken into account in the selection of the airport reserve.	The airport site was selected after consideration of a range of factors including the potential impacts on the Kalbarri National Park. CALM and the National Parks and Nature Conservation Authority (NPNCA) were consulted during the site selection process. The Parliament of Western Australia decided to allow the excision of the land from the National Park, for public purposes in 1994. A large area (30 000 hectares) of unallocated Crown land was identified by the State Government at the time of the decision to allow the excision, for addition to the conservation reserve system, in order to offset the land excised from the National Park. **Therefore this is not considered to be a relevant environmental factor. However this matter is discussed in Section 5 of the EPA's report entitled 'Other advice.'**

Appendix 4

Recommended Environmental Conditions and Proponent's Consolidated Commitments

Recommended Environmental Conditions

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

RELOCATION OF KALBARRI AIRPORT

Proposal: The construction and operation of a dual runway airport within the Kalbarri Airport Reserve, approximately 8 kilometres east of Kalbarri (including the decommissioning of the present airport site south of Kalbarri).

Proponent: Shire of Northampton

Proponent Address: PO Box 61 Northampton WA 6535

Assessment Number: 1252

Report of the Environmental Protection Authority: Bulletin 986

The proposal to which the above report of the Environmental Protection Authority relates may be implemented subject to the following environmental conditions and procedures:

1 Implementation

1-1 Subject to these conditions and procedures, the proponent shall implement the proposal as documented in schedule 1 of this statement.

1-2 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is substantial, the proponent shall refer the matter to the Environmental Protection Authority.

1-3 Where the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

2 Proponent Commitments

2-1 The proponent shall implement the consolidated environmental management commitments documented in schedule 2 of this statement.

2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of conditions and procedures in this statement.

3 Proponent

3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person in respect of the proposal.

3-2 Any request for the exercise of that power of the Minister referred to in condition 3-1 shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the conditions and procedures set out in the statement.

3-3 The proponent shall notify the Department of Environmental Protection of any change of proponent contact name and address within 30 days of such change.

4 Commencement

4-1 The proponent shall provide evidence to the Minister for the Environment within five years of the date of this statement that the proposal has been substantially commenced.

4-2 Where the proposal has not been substantially commenced within five years of the date of this statement, the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment will determine any question as to whether the proposal has been substantially commenced.

4-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement at least six months prior to the expiration of the five year period referred to in conditions 4-1 and 4-2.

4-4 Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years for the substantial commencement of the proposal.

5 Compliance Auditing

5-1 The proponent shall submit periodic Compliance Reports, in accordance with an audit program prepared in consultation between the proponent and the Department of Environmental Protection.

5-2 Unless otherwise specified, the Chief Executive Officer of the Department of Environmental Protection is responsible for assessing compliance with the conditions, procedures and commitments contained in this statement and for issuing formal, written advice that the requirements have been met.

5-3 Where compliance with any condition, procedure or commitment is in dispute, the matter will be determined by the Minister for the Environment.

Schedule 1

The Proposal

The proposal involves the construction of a dual runway airport on the Kalbarri Airport Reserve.

The proposal also includes the decommissioning and rehabilitation of the present Kalbarri airport site, which is within the Kalbarri National Park.

Key Characteristics Table

Element	Description
Location	Approx. 8 kilometres east of Kalbarri on the south side of the Ajana-Kalbarri Road
Airport reserve total area	633 hectares
Area of disturbance	48 hectares
Primary airstrip length (initial)	1600metres
Primary airstrip length (final)	1800metres
Cross runway length	1000metres
Primary airstrip bearing	180/360° (true)
Cross runway bearing	85/265° (true)
Facilities area	Approximately 180 metres x 180 metres (3.25 hectares)
Access road dimensions (maximum disturbance width and length)	20metres x 1.4kilometres

Figures attached

Figure 1 attached shows the locality of the airport relative to the town of Kalbarri and the Kalbarri National Park.

Figure 2 shows the proposed layout of airport facilities including runways, buildings and roads and tracks within the airport reserve.

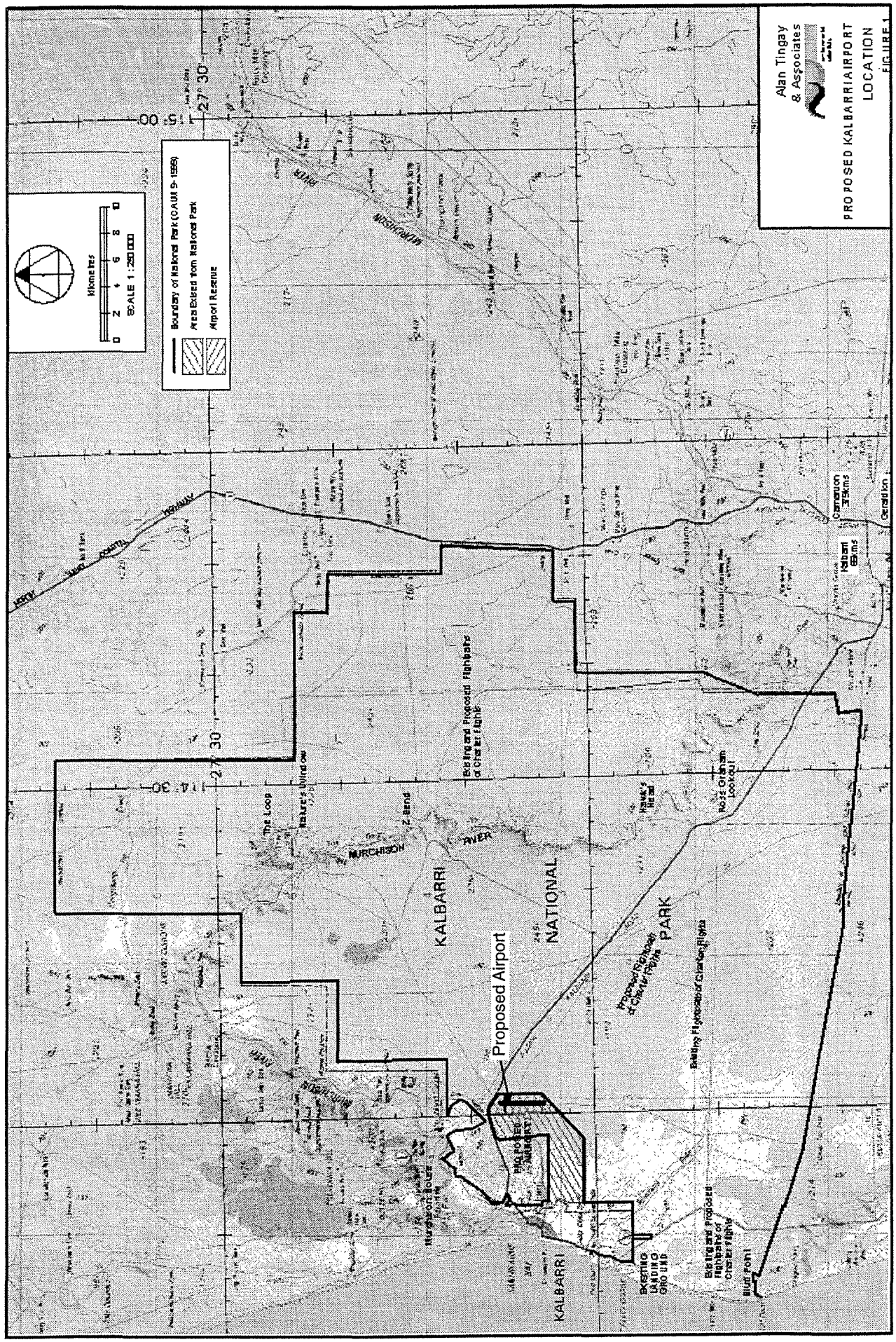

Figure 1. Locality map of the Kalbarri area and the airport site (Source: CER, Fig.1)

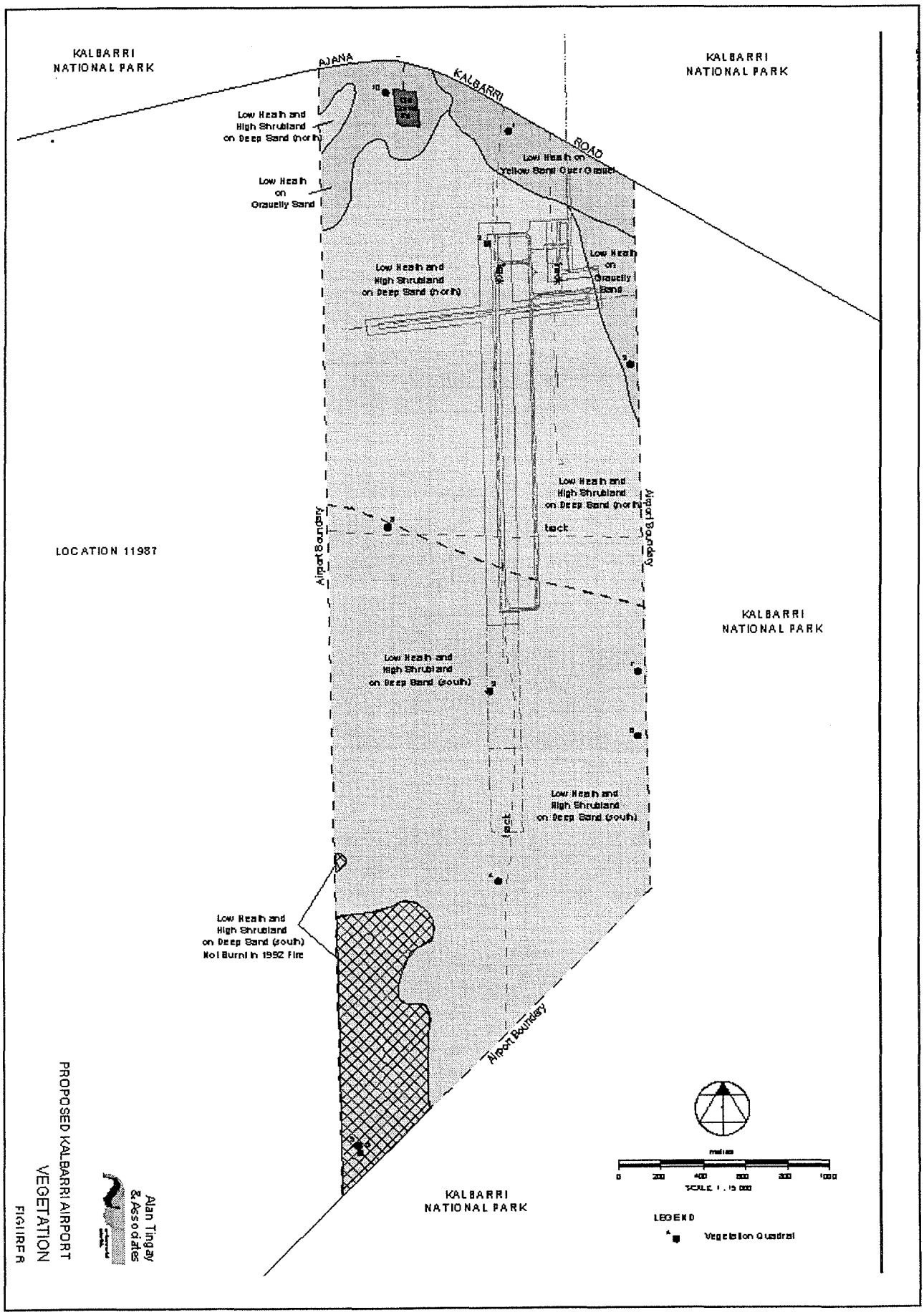

Figure 2. Airport layout and vegetation affected (Source: CER, Fig.6 as amended June 2000).

Schedule 2

Proponent's Consolidated Environmental Management Commitments

July 2000

KALBARRI AIRPORT (1252)

SHIRE OF NORTHAMPTON

KALBARRI AIRPORT - CONSOLIDATED ENVIRONMENTAL MANAGEMENT COMMITMENTS (ASSESSMENT NO. 1252)

(see page 5 for abbreviations)

COMMITMENT	TIMING	OBJECTIVE	ACTION	AREA OF APPLICATION	WHOSE ADVICE	COMPLIANCE CRITERIA/REPORTING
Vegetation & Flora						
1. Minimise clearing	i) Pre Construction	To reduce impact on native vegetation	Define machinery exclusion areas prior to commencement of construction.	Airport Reserve	DEP	CR
			Restrict all clearing and other vegetation disturbance to the areas defined in Figure 6 of the CER (as amended 6 July 2000).	Airport Reserve	DEP	CR
	ii) During Construction	To reduce impact on native vegetation	Implement approved layout.			
2. *Hemigenia pimelifolia* (P1)	Pre Construction	To ensure conservation status of *Hemigenia pimelifolia* (P1) will not be adversely affected by the construction of the airport.	Survey Airport Reserve and, if required, the surrounding area for populations of *Hemigenia pimelifolia* (P1) and establish the likely impact of the airport on the species conservation status in consultation with CALM. Provide additional commitments as necessary to ensure conservation status of *H.pimelifolia* is not adversely affected.	Airport reserve and, if required, surrounding area.	DEP	CR
3. Existing Airport	During Operations	To increase protection of native vegetation	Existing (Old) airport rendered unusable, rehabilitated and added to the National Park	Existing airport site	DEP on advice from CALM	CR
4. Revegetation Plan	i) Prior to Construction	To reduce impact on native vegetation in Airport Reserve and surrounding area	Prepare a Revegetation Plan for existing airport and proposed airport as part of EMP.	Existing and proposed airport sites	DEP on advice from CALM	Approval of Revegetation Plan
	ii) During Construction & Operation	To reduce impact on native vegetation in Airport Reserve and surrounding area	Commence the implementation of the agreed Revegetation Plan within 12 months of the completion of construction.	Existing and proposed airport sites	DEP	CR

COMMITMENT	TIMING	OBJECTIVE	ACTION	AREA OF APPLICATION	WHOSE ADVICE	COMPLIANCE CRITERIA/REPORTING
Environmental Threats (Weeds, Disease, Fire and Feral Animals)						
5. Environmental Management Plan	i) Pre-construction	To minimise environmental impacts on Airport Reserve and Kalbarri National Park.	Prepare an Environmental Management Plan consisting of: ▪ a Revegetation Plan for existing and proposed airport reserves, ▪ Disease and Weed Management Plan, ▪ Fire Management Plan, ▪ Groundwater Protection Plan, ▪ Commitments relating to the Management of Feral Animals.	Airport Reserve	DEP with advice of CALM, WRC, Fire Services WA	Approval of EMP
6. Disease and Environmental Weed Plan	i) Pre Construction	To minimise introduction & spread of weeds and disease in Airport Reserve and surrounding area.	Prepare a Disease & Weed Management Plan as part of EMP.	Airport Reserve	CALM	Approval of Disease & Weed Management Plan
	ii) During Construction & Operation	To minimise introduction & spread of weeds and disease in Airport Reserve and surrounding area	Implement the agreed Disease & Weed Management Plan.	Airport Reserve	DEP with advice from CALM	CR
7. Weed and Disease Free Materials.	During Construction	Minimise the introduction and spread of weeds and disease in Airport Reserve and surrounding area.	Use weed and disease free material in construction of airport.	Airport Reserve	DEP	CR
8. Landscaping	During Operation	To minimise introduction of weeds and to preserve genetic diversity in Airport Reserve and surrounding area	Select appropriate spp and local plant stock for landscaping (esp. Geraldton Wax).	Airport Reserve	DEP with advice from CALM	CR

COMMITMENT	TIMING	OBJECTIVE	ACTION	AREA OF APPLICATION	WHOSE ADVICE	COMPLIANCE CRITERIA/REPORTING
9. Fire Management Plan	i) Pre Construction ii) During Construction & Operation	To minimise risk of fire To minimise risk of fire	Prepare a Fire Management Plan as part of EMP. Implement the Fire Management Plan.	Airport Reserve Airport Reserve	Fire Services WA & CALM DEP	Approval of Fire Management Plan CR
10. Fencing	During Construction	To facilitate control of native animals	Erect a 1.5m partially buried link and barb fence.	Portion of Airport Reserve	DEP on advice from CALM	CR
11. Management of Rubbish	During Operation	To limit food sources for pest animals	Place secure containers and removal of rubbish off-site.	Airport Reserve	DEP	CR
12. Baiting of Feral Animals	During Operation	To control fox populations & minimise predation	Undertake periodic baiting programs. The frequency and intensity of the baiting program will be defined and reassessed on an on-going basis to CALM's requirements.	Airport Reserve	DEP on advice from CALM	CR
13. Control of Rabbits	i) During Construction ii) During Operation	To limit the colonisation of the airport site by rabbits To limit the colonisation of the airport site by rabbits	Flatten spoil heaps and removal or mulching of cleared vegetation to prevent warren establishment. Control exotic grasses and periodic monitoring of site, poisoning and eradication of warrens.	Airport Reserve Airport Reserve	DEP on Advice from AGWA DEP	CR CR
14. Control of House Mice	During Operation	To control house mouse population at the site	Implement a regular trapping and baiting program in the airport terminal & buildings.	Airport Terminal and buildings	DEP	CR
15. Control of Introduced Bees	During Operation	To limit spread of introduced bee species	Apply pyrethrin based sprays to feral bee hives	Airport Reserve	DEP	CR
Soil						
16. Minimise Land Degradation	During Construction	To minimise land degradation	Ensure that construction follows clearing as soon as possible but no later than 6 months following clearing	Airport Reserve	DEP	CR
17. Soil Stabilisation	During Construction	To minimise land degradation	Apply soil stabilisation measures to exposed areas of the site as required	Airport Reserve	DEP	CR

COMMITMENT	TIMING	OBJECTIVE	ACTION	AREA OF APPLICATION	WHOSE ADVICE	COMPLIANCE CRITERIA/REPORTING
Groundwater Quality						
18. Fuel Storage	i) During Construction	To minimise the possibility of contamination of groundwater.	Construct above-ground fuel storage to relevant Australian Standards.	Airport Reserve	DEP on advice from DME	CR
	ii) During Operation	To minimise the possibility of contamination of groundwater.	Below ground hydrocarbon storage will not be used.	Airport Reserve	DEP	CR
19. Groundwater Protection Plan	i) Pre Construction	Minimise the possibility of contamination of groundwater.	Prepare a Groundwater Protection Plan as part of EMP	Airport Reserve	DEP on advice from DME and WRC	Approval of Groundwater Protection Plan
	ii) During Construction & Operating	Minimise the possibility of contamination of groundwater.	Implement agreed Groundwater Protection Plan	Airport Reserve	DEP	CR
20. Protection of Groundwater	During Construction	To minimise the possibility of contamination of groundwater	Install septic or package sewage treatment plant (when demand increases) to Health Department WA requirements	Airport Reserve	DEP on advice from HDWA	CR
21. Stormwater Management	Pre-construction	The protection of groundwater	Ensure maximum infiltration of stormwater and segregation of any areas where there is a risk of contamination.	Airport Reserve	DEP on Advice from WRC	CR
Noise						
22. Aircraft Noise	During Construction	Manage aircraft noise	Implement airport design procedures indicated in CER documents	Airport Reserve	DEP	CR
23. Operational Noise	During Operation	Manage environmental noise	Ensure fixed equipment at the airport comply with noise regulations	Airport Reserve	DEP	CR
24. Fly Friendly Protocol	During Operation	Manage scenic flights in Kalbarri National Park to ensure no undue adverse impacts on users of the Kalbarri National Park	Liaise with CALM, DOT and Air Services Australia to facilitate the preparation and implementation of 'fly friendly' protocols for scenic flights over the Kalbarri National Park for publication in the March 2001 edition of Enroute Supplement Australia	Airport reserve and Kalbarri National Park	DEP on advice of CALM, DOT and Air Services Aust.	CR

COMMITMENT	TIMING	OBJECTIVE	ACTION	AREA OF APPLICATION	WHOSE ADVICE	COMPLIANCE CRITERIA/REPORTING
Visual Amenity						
25. Visual Amenity	Pre-construction	Limit visual amenity impacts	Minimise visual impact of airport from Meanarra Hill Lookout, Ajana-Kalbarri Road and major visitor centres in Kalbarri National Park	Meanarra Hill Lookout, Ajana-Kalbarri Road and major visitor centres in Kalbarri National Park	DEP	Approval of CER Document.
Aboriginal Heritage						
26 & 27. Archaeological Sites	During Construction	Avoid disturbance of archaeological sites	Contractors to receive training in Aboriginal heritage. Stop construction work in event of a site suspected Aboriginal significance is found and consult with an archaeologist	Airport Reserve	DEP	CR
28. Archaeological Sites	During Construction	Avoid disturbance of archaeological sites	If site is positively identified to be of Aboriginal significance, the site will be fenced and the Aboriginal Sites Department of the WA Museum will be notified	Airport Reserve	DEP on advice of WA Museum	CR
29. Sites of Significance	Pre-Construction	Minimise disturbance of sites of significance to Aboriginal people	A third group of Aboriginal people be given the opportunity to visit the site when notification of the composition of the group is received from their legal adviser.	Airport Reserve	DEP	CR

Abbreviations:

DME	Department of Minerals & Energy
DEP	Department of Environmental Protection
EPA	Environmental Protection Authority
CR	Compliance Report to Department of Environmental Protection
CALM	Department of Conservation & Land Management
AGWA	Agriculture Western Australia
CER	Consultative Environmental Review
DOT	Department of Transport

Appendix 5

Summary of Submissions and

Proponent's Response to Submissions

RESPONSE TO PUBLIC SUBMISSIONS ON THE CONSULTATIVE ENVIRONMENTAL REVIEW FOR THE PROPOSED NEW KALBARRI AIRPORT, 8KM EAST OF KALBARRI TOWNSITE

(ASSESSMENT NO. 1252)

1. General Comments on the Proposal

1.1. Such a proposal should only be assessed in the context of the Management Plan for the Kalbarri National Park (in preparation), and should proceed no further until that plan is available.

The proposed Kalbarri Airport site was excised from the Kalbarri National Park in 1994 by the Parliament of Western Australia. As the building of the airport facility is not expected to impact significantly on the Kalbarri National Park, it would be inappropriate to withhold assessment of the proposal until the Management Plan for the Kalbarri National Park is available. Comment was sought from CALM staff in the Midwest and in Perth, including staff responsible for the preparation of the Kalbarri National Park Management Plan during the preparation of the CER.

1.2. The proposal cannot meet the EPA objectives for the conservation of natural ecosystems.

Kalbarri National Park is one of a network of National Parks proclaimed for the purpose of nature conservation. The proposed airport site will disturb an area of 48 Ha of total 633ha previously excised for the purposes of an airport reserve. The remaining 585ha of this reserve and the balance of Kalbarri National Park will not be directly impacted by this proposal. Given the management procedures outlined in the CER and the commitments made by the proponent, the proposal is able to meet all of the Environmental Protection Authority objectives for the protection of natural ecosystems.

1.3. There has not been adequate risk assessment of the potential impacts (eg pollution, introduced species, fire, groundwater contamination) and their consequences on the adjacent National Park given worst case scenarios. Conditions associated with any approval to proceed should only be developed in association with comprehensive risk assessment, and reflect the environmental importance of the area and public concern. Please comment.

The potential impacts of the proposal including potential impacts on the National Park are discussed within the CER. Specific discussion of potential impacts in relation to pollution impacts and impacts on groundwater quality is presented in Section 6.6. Environmental weeds, disease and fire are discussed in Section 6.3 of the CER. The CER also details the management procedures that will be adopted and commitments made by the proponent which are intended to ensure the proposal will be implemented in a manner consistent with EPA objectives.

1.4. *Consultation amongst stakeholders appears to be grossly inadequate. No explanation has been provided for the lack of consultation with local or state based conservation organisations, the Australian Heritage Commission, CALM, the NPNCA and Aboriginal communities who speak for the area. All these groups have a clear and highly developed interest in the area and its management and their views should be sort before environmental assessment can be completed. Furthermore, for the information of the interested public, the views of these organisations should be made public in the CER.*

An extensive community consultation program was undertaken early in the study in order to identify the issues of potential concern to the community, which is detailed in the CER (pages 22-24 and 50-52). The consultation included discussions with CALM staff in the MidWest and in Perth, the Australian Heritage Commission and Aboriginal groups. The CER contains a summary of the views of key stakeholders.

1.5. *Concern has been expressed that there is inadequate justification of the necessity for the development. Particular concerns include:*

- *There is no evidence presented that there are social and economic imperatives which outweigh the potential environmental impacts, particularly in this sensitive location (excised national park, on the Register of the National Estate);*
- *There is no written comment from the Royal Flying Doctor Service in support of the proposal although the CER states that the RFDS 'considers the existing airport at Kalbarri less than its recommended minimum standard and is strongly supportive of the proposed airstrip';*
- *Statements such as 'ideally the airport should be within 15-20 minutes drive of Kalbarri' and 'the cost of earthworks could be very high and the site should be chosen to minimise these costs as far as possible' are used to limit the options for a new airstrip site and being economic factors, should not be considered in an environmental assessment; and*
- *Cost is the main factor presented for not extending the existing airstrip, however the existing airstrip could be extended with minimal further environmental impact.*

The CER details the need for the proposed development, the environmental impacts of the proposal, the management procedures that will be adopted and commitments made by the proponent which are intended to ensure the proposal will be implemented in a manner consistent with EPA objectives.

The Royal Flying Doctor Service provided comments on the existing and proposed Kalbarri Airport in a telephone discussion between Dick Tippett (RFDS) and Martine Scheltema (Alan Tingay & Associates) held on the 26 August 1999.

Selection criteria were developed by Wallace Emery & Associates Pty Ltd in order to assess the relative engineering, social and environmental impacts of alternative sites for the Kalbarri Airport. The selection criteria, which are detailed in Section 3 of the

CER, included runway alignment, obstacle limitations, drainage, proximity to town and town planning, impact on Kalbarri National Park and earthworks (longitudinal slope, rate of change of slope and site distance).

The existing airport is located on hilly terrain. Extensions to the north and south of the existing runway were possible, but the ground falls away rapidly from both ends of the existing runway. As detailed in the CER (Section 3), the existing airport and the area east of Meanarra Hill were subjected to a ground survey by Wallace Emery & Associates and the Northampton Shire on 26 February 1988. In the ground survey the length of possible runway/runway extension was tranversed, in-situ soil bearing strength tests were conducted, the approaches and obstacle limitations considered and the extent of earthworks required assessed. As a result of these assessments Wallace Emery & Associates recommended the site to the east of Meanarra Hill. It is therefore incorrect to state that cost was the main factor for not extending the existing airstrip.

1.6. In the context of Point 1.4, there is minimal evidence that alternative sites have in fact been adequately canvassed and fully assessed. The proponent should be required to fully assess the environmental impacts of extending the existing airstrip. The assertion at the bottom of page 52 that " there are no alternative sites to the proposed site." is indefensible, unscientific and professionally reprehensible.

As outlined in Section 3 of the CER, potential sites for the Kalbarri Airport ***including the existing airport***, were assessed using selection criteria developed by Wallace Emery Pty Ltd that included runway alignment, obstacle limitation, drainage, proximity to town and town planning, impact on the Kalbarri National park and earthworks (longitudinal slope, rate of change of slope and sight distance).

Notwithstanding, the quotation cited in the public submission is incomplete and makes selective use of the text to diminish the studies undertaken in the identification of the preferred site. The complete extract is provided below:

> ***As outlined in Section 3, there are no alternative sites to the proposed site for Kalbarri Airport that comply with Royal Flying Doctor Service recommendations. However, of the 633ha of the airport reserve, only 48ha will be disturbed for the construction of the strip, access road, taxiway and terminal and associated buildings. As is evident in the proponent commitments, the remaining 585ha will be managed to minimise disturbances resulting from the construction and operation of the airport. The proponent commitments will also ensure the proposed airport has minimal impact on the natural values of the Kalbarri National Park.***

The statement describing the site selection as *indefensible, unscientific and professionally reprehensible* is inconsistent when considered relative to the full extract.

1.7. In relation to further proposals for the site, the CER notes that the 3000ha excision was also "(...for a variety of purposes including future town growth

and rubbish disposal)." This is another example of the "mobile national park" policy and represents poor planning for a short-term solution. Considering the possible cumulative impacts of this proposal with future uses, any planning should be looking at the long-term (50 – 100 years) and all future proposals should be subject to formal assessment.

This statement presents an opinion on the process used to assess proposals within Western Australia.

The objectives of the EPA, as set out in the Environmental Protection Act (the Act), are very brief. They are simply that the EPA is to use its best endeavours to:

(a) protect the environment; and
(b) prevent, control and abate pollution.

In relation to future impacts attributable to possible future uses of the balance of the excised site, these have yet to be determined and accordingly it is unreasonable for any consideration of the combined impact to be made at this stage. Any future developments on this site will require referral to the EPA for consideration of Level of Assessment, and accordingly any assessment as prescribed by the EPA in the knowledge of the potential impacts.

1.8. Ministerial conditions should be set that reflect the ecological significance of the site and the degree of public interest in such a proposal in an area of excised National Park.

The proponent recognises the environmental values of the area. The management procedures outlined in the CER and the commitments made by the proponent are intended to ensure the proposal will be implemented in a manner consistent with EPA objectives. At the completion of the EPA's determination on this proposal, the Minister for the Environment may place upon the project any conditions as she sees fit to protect the environment.

1.9. A previous assessment by Wallace Emery and Associates should be included as an appendix to the CER for scrutiny as environmental impacts were not carried out in this assessment.

The site assessment report conducted by Wallace Emery and Associates on behalf of the Western Australian Department of Transport was a technical assessment of the landscape relative to the physical requirements (runway length, taxiways, aprons, landing approaches, wind direction and obstacle limitation surfaces that dictate aircraft safety and operability. This document has been referred to and paraphrased where relevant in the CER document. This information has been utilised in the assessment of the environment impacts of the proposal as presented in section 6 of the CER, but the document in its entirety not reproduced for (relative) brevity The environmental impacts of the proposal on vegetation communities, declared rare and priority flora, environmental weeds, disease, fire, terrestrial fauna, soil, groundwater

quality, aircraft noise, visual amenity and heritage are addressed in the CER. In addition, the impact of the proposal on the National Estate values is also addressed.

1.10. The CER asserts that the new airstrip will not increase the frequency of flights over sensitive areas of the National Park, however there is a forecasted increase in passenger movements of between 2.2% and 24.6% (Page 13). Further studies are required to investigate the impacts of increased this visitation as a result of the new airstrip on the National Park. Disturbance of wildlife as a result of increased low flying charter flights in the Abrolhos Islands has been sited as an example of potential impacts.

Scenario 2 (a stimulus of the base traffic and the attraction of Perth traffic through Geraldton) is thought to be the most likely level of growth that will be realised at the new Kalbarri Airport (Westralia Airports Corporation, 1999a) (Section 2, CER).. The passenger level of 2,800 predicted by Scenario 2 in year 2009 will be provided for in two return services a week on a 14 seat aircraft (eg a Cessna 208 Caravan) at a 65% load, with a smaller aircraft (10 seat or smaller) being used in the immediate to mid term. Passenger movements would need to grow to around 4,500 (Year 2004 in Scenario 3) for a daily return service on a smaller aircraft type and around 3 services a week with a larger 19 seat aircraft (eg Fairchild Dornier Metro 23, Beechcraft 1900).

Flight paths for aircraft using the airport will be determined in the future. Nevertheless with the north-south alignment of the runway, approaches to the airport will be either from the north or the south, depending on the prevailing winds. Aircraft are likely to track to the east of the runway in lining up for their approach, due to the presence of Meanarra Hill to the west of the runway. The north-south alignment of the runway will minimise potential impacts on users of the National Park. The main places of human interest within the National Park are the coastal cliffs, the river gorges and walking trails (CALM, 1999). The closest points of interest within the National Park to the airport are the coastal cliffs 12km to the south-west, and a few well defined tracks approximately 20km to the east of the airport.

Light aircraft currently fly over the gorges in the Kalbarri National Park, using the existing airport to the south of the town. The number of scenic flights by light aircraft over flying the gorges in the Kalbarri National Park is not expected to change as a result of the relocation of the airport from the existing site to the south of the town. The number of scenic flights is dependent on demand from visitors for flights, rather than airport location.

The potential for birds to be killed or injured as a result of flights especially during take-off and landing is considered low. It is unlikely that any birds have major flight paths in the area and there are no nearby adjacent wetlands to attract waterbirds, nor significant trees that provide suitable sites for nesting. Riverine habitats supporting larger water birds and birds of prey are located several kilometres away from the proposed airport site. Seasonal migratory paths of small insectivorous birds is typically concentrated further inland where the habitat includes more substantial areas of *Eucalypt* and *Banksia* woodlands.

1.11. The proponent's commitments are not strong enough and are not fully reflected in Table A2. Qualifying statements such as "as much possible" are not acceptable and are unauditable.

The proponents commitments are given in full in Section 7 of the CER. The commitments in Table A2 are presented in summary form. The commitments do not use the words 'as much as possible' and are auditable.

1.12. There has been no attention to the potential impacts of illegal rubbish dumping and four wheel driving on the site. These issues must be addressed.

Illegal dumping of rubbish is a management issue faced by a wide range of land managers, and will not be restricted to the proposed Kalbarri Airport. Historically this activity occurs on unmade and secluded tracks. The major impact of illegal dumping of rubbish is the potential for spread of weeds and disease. The Proponent has made a commitment to prepare and implement a Disease and Weed Management Plan for the airport reserve in consultation with CALM. The plan will be prepared prior to construction and will be to the requirements of CALM.

Four Wheel driving around the site has the potential to increase disturbance and hence may result in increased weed invasion. Access to the reserve will be restricted except for fire management. A Fire Management Plan will be prepared in conjunction with the local branch of the Fire and Emergency Services, the Shire of Northampton and CALM. The plan will be prepared prior to construction and will be to the requirements of FESA and CALM. (Commitment 6) Fencing will be erected around disturbed areas, which will limit access to operational areas. (Commitment 7).

1.13. The proposal that the existing airport be added to the Kalbarri National Park is supported by CALM, but the area should first be fully rehabilitated. A commitment from the proponent to assume responsibility for achieving a standard of rehabilitation agreed by CALM, at the proponent's expense, would also be acceptable. An agreed standard would have to be achieved before the proponent is released from any commitment.

The desire to achieve full rehabilitation of the existing airport, in conjunction with the operation of that identified in this proposal is noted. The Shire of Northhampton will have responsibility for the management of both sites. Accordingly a further commitment is made to the effect that

A rehabilitation plan will be prepared for the existing airport in consultation with CALM. The implementation of the rehabilitation plan will be to the satisfaction of CALM.

1.14. The current proposal to rehabilitate the existing airport by ripping to promote regeneration is not considered satisfactory by CALM.

A rehabilitation plan will be prepared for the existing airport in consultation with CALM. The implementation of the rehabilitation plan will be to the satisfaction of CALM.

1.15. Prescriptions for the rehabilitation of the existing airport will need to include seeding with local provenance and weed control.

Procedures for the rehabilitation of the existing airport will be detailed in the rehabilitation plan, which will be prepared and implemented to the satisfaction of CALM.

1.16. CALM conducts baiting for foxes within Kalbarri National Park as part of its Western Shield program and maintains significant areas of protective non-baited buffers surrounding Kalbarri townsite. Non-baited buffer widths are established to minimise the risks to straying domestic animals and CALM would need to consider possible risks associated with any encroachment into existing buffers as a result of this proposal. CALM is willing to liase with the Shire of Northampton on this matter.

The Shire of Northampton has made a commitment (Commitment 9) to undertake periodic fox baiting in conjunction with CALM, in the airport reserve surrounding the airport site and, if necessary, within the operational areas to manage fox populations and minimise predation within the adjoining National Park. The Shire is willing to liaise with CALM on this matter.

1.17. The proposal does not fully address the EPA Guidelines. These require the CER to properly describe:

- *the full area of expected impact on the park, including future degradation from edge effects and introduction of foxes and weeds etc, not just the immediate area to be cleared. 'the proponent has a responsibility to address in the environmental public review document the nature of the impacts and the significance of the impacts on the proposal area and adjacent areas and land uses;*
- *how it is possible for the environmental impacts to be fully contained within the area of the proposal, as required by the EPA guidelines;*
- *how a full public consultation process has been conducted which identifies public expectations in relation to uses of National Parks; and*
- *how those expectations will not be compromised by the proposal.*

The CER details the need for the proposed development, the environmental impacts of the proposal, the management procedures that will be adopted and commitments made by the proponent which are intended to ensure the proposal will be implemented in a manner consistent with EPA objectives. The public consultation process undertaken as part of the preparation of the CER is detailed in Section 3 of the CER

An assessment of the environment impacts of the proposal and the management of those impacts within the site and in adjoining areas is presented in section 6 of the CER. The environmental impacts of the proposal on vegetation communities, declared rare and priority flora, environmental weeds, disease, fire, terrestrial fauna, soil, groundwater quality, aircraft noise, visual amenity and heritage are addressed in the CER. In addition, the impact of the proposal on the National Estate values is also addressed.

The management measures identified in the CER will ensure the proposal will have minimal impact on the balance of the excised area and the National park. The management measures described in the CER are consistent with the management measures adopted by CALM in the management of Parks and Reserves elsewhere in the State.

2. BIOPHYSICAL FACTORS AND ISSUES

2.1 Terrestrial Flora

Vegetation Communities

2.1.1. The Wildflower Society of Western Australia has major concerns regarding this proposal, and considers that the impacts on the bushland (which was originally National Park) to be environmentally unacceptable.

The nature of the Wildflower Society's concerns are not specified.

The impacts are assessed in the CER as having a moderate impact on the vegetation at the local level and a minor local impact on one Priority 3 species *Geleznowia verrucosa*. Kalbarri National Park is one of a network of National Parks proclaimed for the purpose of nature conservation. The proposed airport site will disturb an area of 48 Ha of total 633 Ha previously excised for the purposes of an airport reserve. The remaining 585 Ha of this reserve and the balance of Kalbarri National Park will not be directly impacted by this proposal. Based on an assessment of the vegetation directly affected by the construction of the airport, should it be approved and implemented, a conclusion has been drawn that the proposal can be managed to meet the EPA's objectives with respect to vegetation communities and Declared Rare and Priority Flora.

The Minister for the Environment on ~~technical~~ advice from the EPA will determine whether the impacts on the bushland are environmentally acceptable or not, and make her determination accordingly.

2.1.2. Significant plant communities could be affected. The vegetation mapping by Beard (1976) is at a broad scale and is not sufficient to recognise rare plant communities.

The CER acknowledges that Beard's Scrub Heath Unit is likely to be floristically diverse. The vegetation survey carried out for the CER was at a finer level than Beard's vegetation mapping system and identified three floristic community types (FCTs). These FCTs were assessed as occurring within proposed undeveloped parts of the airport reserve as well as within the Kalbarri National Park. The proposed airport will therefore not lead to any extinction of community types.

2.1.3. The CER reports that survey quadrats chosen from aerial photographs "cover the full variation in vegetation and soil types", however it is noted that ground investigations revealed that some communities "cannot be identified from aerial photographs". This contradiction indicates the need for a more comprehensive flora study and that more vegetation types than can be identified on aerial photographs are present.

The statement in the submission that the survey quadrats were chosen from aerial photographs referred to is incomplete. The CER states that quadrats were chosen

after a preliminary site inspection and examination of aerial photographs and not just on aerial photographs alone. The floristic survey of the site is therefore considered sufficient for the purposes of the CER.

2.1.4. Conducting a vegetation survey in July and August would result in the omission of many species, including a suite of early summer-flowering species would have been missed. Extensive and scientifically defensible seasonal surveys are necessary to assess diversity, occurrence and importance of species in the area.

Concerns in relation to the most appropriate time to survey vegetation populations are noted, but difficult to resolve in relatively low rainfall areas. Flowering can be stimulated in response to single climatic events, and accordingly the selection of the most appropriate time made difficult. However the collection of flowers is not essential for the identification of most species in the study area. All sterile material (ie. non-flowering) was collected and identified as far as possible. Very few specimens were unable to be identified to the species level during the field survey, and the majority of those remaining identified during subsequent laboratory examination.

Eight taxa were not able to be identified to species level. Of these three (*Darwinia* spp. aff. *sanuinea*, *Acacia* ? *subtessaragona* and *Lepidosperma ?augustatum*) had affinities to known species while six (*Stipa sp.*, *Eucalyptus sp. Pittosporum sp.*, *Dryandra sp.* and *Rulingia sp.*) had insufficient flowering material to assist in identification.

All but one of the tax were recorded in areas outside the areas to be disturbed for the airport. The *Pittosporum* specimen was only recorded from one site (site 2), which will be cleared for the main runway. Further efforts will be made to identify the specimen which may require additional fieldwork to collect material and determine its distribution.

All specimens with sufficient flowering material will be lodged in the Perth Herbarium and made available for further taxonomic review.

2.1.5. It is not sufficient to suggest that "from the limited work done in the National Park it is considered that the area extent for each (vegetation) type are likely to be significantly greater than their occurrence in the airport reserve.

Ideally the assessment of areal extent of each floristic community type would be based on a thorough assessment of the Scrub Heath vegetation unit in Kalbarri National Park. However, this unit covers around 970km^2 within the National Park. In taking a probabilistic approach, a detailed and time consuming survey over the whole area was considered unnecessary as a result of the field assessment of the vegetation in the National Park, South and East of the airport reserve.

2.1.6. It can be seen from the vegetation description of each of the 15 quadrats there is very little overlap in the species layer. There may be some similarity in soil type, buy there is great diversity of the dominant species. Please comment on the significance of these statements in relation to potential impacts from site-specific and National Park perspectives.

Examination of the table on Page 25 of the CER would in fact show that there is considerable overlap in dominant species apart from sites 14 and 15 which were located in the National Park 15km south-east of the airport reserve.

In general the term mixed low heath is probably more accurate a description as there is often very little dominance of any particular species. The floristic analysis has shown that sites soil types might have different dominant species but have similar species composition. This could in some circumstances have implications for fauna utilisation due to changes in species dominance within the one floristic community type. The results of the fauna survey suggest that there would be no significant difference in faunal composition attributable to changes of species dominance within the same floristic community type (soil type).

2.1.7. The whole of the airport, from the edge of the buildings and runways, should be managed to the standard of a flora reserve. This is the very least that should be done in view of the likely impacts on flora including six priority species.

Agree. Experience indicates that many of the best stands of remnant vegetation remaining in areas developed intensively for agricultural, pastoral or urban uses (such as the wheat belt) remain in road and railway reserves, or as buffers to other pieces of public infrastructure. Commitments in the CER set out to attain this level of management for the non-operational components of the airport

2.1.8. The new airport poses minimal threat to flora and fauna through controlled clearing and soil disturbance and contingency plans to control perceived risks.

Agree. Commitments in the CER set out to attain this level of management for the non-operational components of the airport.

2.1.9. The commitment to "Minimise clearing operations to reduce the impact on native vegetation" could be strengthened to include fencing of the area to be cleared. It is noted that fencing is considered in Section 6.4.4. Unless operational areas are clearly defined, control of the area is difficult to confine during construction.

Commitment 7 refers to fencing of all operational areas to the requirements of the DEP.

2.1.10. The Environmental Protection Authority's (EPA) position Statement No. 2 (EPA, 1988) "Environmental Protection of Native Vegetation in Western Australia" states on page 7 that: 'Now all existing remnant vegetation is important, and it should be managed to ensure its retention.' Further to this, under Section 4.2 Clearing in the Agricultural Region for High-Value land Use a list of requirements is given which must be met for land clearing. The proposal to develop a new airstrip at Kalbarri contravenes requirements 2, 3, 4 and 7 and is therefore incompatible with the EPA's position on land clearing in the agricultural region.

The EPA's Preliminary Position Statement No 2, released in December 1999, discusses clearing of native vegetation in the agricultural region for agricultural purposes, in the agricultural region for high value land uses and clearing in other areas of WA. The Airport site is located outside of the agricultural region as defined in the Position Statement. Therefore the EPA's position in relation to clearing in other areas of WA is applicable.

The Shire of Northampton recognises the environmental values of the site and has made commitments to ensure the level of management of the non-operational components of the reserve is to the standard of a flora reserve. The proponent has also committed to rehabilitate the existing airport reserve to the satisfaction of CALM. The existing airport reserve (32.4ha) will be added to the Kalbarri National Park. The impacts are assessed in the CER as having a moderate impact on the vegetation at the local level and a minor local impact on one Priority 3 species *Geleznowia verrucosa*. It is acknowledged that the proposal will impact on a population of *Hemingia pimelifolia*, a Priority 3 species. The proponent has undertaken (Commitment 2) to conduct further surveys of the airport reserve to identify additional populations of *H. pimelifolia*. The proposal can be managed to meet the EPA's objectives with respect to vegetation communities and Declared Rare and Priority Flora.

The proposal complies with the elements outlined under Section 4.3 (Clearing in Areas of WA) of the EPA's Draft Position Statement No 2.

- *A comparison of development scenarios or options to evaluate protection of biodiversity at the species or ecosystem level.* There are no alternative options to the proposed location of the airport.

- *No known species of plant or animal is likely to become extinct because of the proposal, and the risks to threatened species are considered to be acceptable* The proposal will have a minor local impact on the Priority 3 species *Geleznowia verrucosa* and will impact on a population of *Hemingia pimelifolia*, a Priority 3 species. The proponent has undertaken (Commitment 2) to conduct further surveys of the airport reserve to identify additional populations of *H. pimelifolia)*

- *No association or community of indigenous plants or animals will cease to exist as a result of the project.* The proposal will result in the disturbance of 48ha of the airport reserve. The remainder of the airport reserve (585ha) will not be directly impacted by the proposal and will be managed to provide protection for flora and fauna and buffer any impacts from the airport on the surrounding National Park. The loss of 48ha of habitat is unlikely to affect the conservation status of any of

the fauna or flora recorded or likely to occur on the site. All of the species recorded or likely to occur on the site are expected to occur within habitats available within Kalbarri National Park. The Park supports extensive areas of similar habitat to that found within the airport reserve.

- *There is comprehensive, adequate and secure representation of scarce or endangered habitats within the project area and/or in areas which are biologically comparable to the project area, protected in secure reserves.* The proposal will result in the disturbance of 48ha of the airport reserve. The remainder of the airport reserve (585ha) will not be directly impacted by the proposal and will be managed to provide protection for flora and fauna and buffer any impacts from the airport on the surrounding National Park. All of the species recorded or likely to occur on the site are expected to occur within habitats available within Kalbarri National Park. The Park supports extensive areas of similar habitat to that found within the airport reserve.

- *If the project area is large (in the order of 10 to 100ha or greater, depending on where in the State) the project area itself should include a comprehensive an adequate network of conservation areas and linking corridors whose integrity and biodiversity is secure and protected* The portion of the airport reserve not directly impacted by the proposal (585ha) will be managed to provide protection for flora and fauna and buffer any impacts from the airport on the surrounding National Park. In addition, the proponent has also committed to rehabilitate the existing airport reserve to the satisfaction of CALM. The existing airport reserve (32.4ha) will be added to the Kalbarri National Park

- *The on-site and off-site impacts of the project are identified and the proponent demonstrates that these impacts can be managed.* The potential impacts of the proposal including potential impacts on the National Park are discussed within the CER. The CER also details the management procedures that will be adopted and commitments made by the proponent which are intended to ensure the proposal will be implemented in a manner consistent with EPA objectives.

Declared Rare and Priority Flora

2.1.11. The impacts on flora are unacceptable, The lack of orchids (1 species), only one Verticordia species and the fact that no members of the Asteraceae family have been recorded point to a highly inadequate flora survey.

The main survey was conducted in August, to maximise the chances of recording ephemeral species such as orchids, daisies, lilys, etc. The flowering period appeared to be optimal as during the survey period some other parts of the Kalbarri-Shark Bay region abounded with everlastings. The under-representation of Asteraceae and Orchidaceae species from the airport reserve was commented on in the CER. If present these species would have been recorded.

2.1.12. Further surveys for Hemingia pimelifolia should be conducted in the area to confirm or deny previous CALM records. In recognition of its rarity in the area a recovery plan should be put in place and be the responsibility of the proponent.

Agreed. Commitment 2 refers to the proponent conducting further surveys of the airport reserve to identify additional populations of *Hemigenia pimelifolia.*

Environmental Weeds, Disease and Fire

2.1.13. The commitments to stop weed and disease introduction are inadequate. As the area is reported to be in pristine condition, a disease and weed management plan should be prepared prior to access being granted to the site. It is not possible to assess the potential impacts of weeds and disease without this plan being available for public comment, as it should be in the CER. The plan should not be finalised without a period for public comment.

These concerns will be addressed through Commitment 4 which refers to the development of a Disease and Weed Management Plan to the requirements of CALM prior to construction. Technical documents such as Management Plans, such as those developed to manage plant diseases and weeds, are not generally developed with a view to public review. CALM, through its extensive experience in Parks, Reserve and Forest management, is well placed to be able to provide expert direction and comment on plans of this nature.

2.1.14. The CER has not addressed the potential for the introduction of weeds through the movement of soil. This needs to be considered in any weed plan and follow up management plans that should be produced.

Noted. Commitment 4 refers to the development of a Disease and Weed Management Plan to the requirements of CALM prior to construction.

2.1.15. The CER fails to provide adequate information on weed and disease issues and impacts of increased visitation to the area.

These concerns will be addressed in Commitment 4 that refers to the development of a Disease and Weed Management Plan to the requirements of CALM prior to construction.

2.1.16. It is problematic that the CER does not address the source of construction materials. The assessment of environmental impacts should fully consider the effects (eg introduction of weeds, other exotic species and disease) of extracting and transporting gravel to the proposed development.

These concerns will be addressed in Commitment 4 which refers to the development of a Disease and Weed Management Plan to the requirements of CALM prior to

construction. Construction materials will be identified from disease free and weed free sources and managed using accepted protocols.

2.1.17. Only local species propagated from local stock and no lawn should be used in any landscaping of the site to reduce the risk of accidental introduction of non-native species and the threat of weed infestation into Kalbarri National Park.

Commitment 5 refers to the use of local native species in landscaping work. There will be no grassed (lawn) areas as part of the development.

2.1.18. A Ministerial condition should be made that the gravel necessary for the construction of the proposed new airstrip be sourced from outside the National Park and be free of dieback.

The CER identifies (Section 4.11) that gravel for the airport will be sourced from a gravel pit located on private cleared farm land at Ajana, outside the National Park.

2.2 Terrestrial Fauna

2.2.1. Several issues of concern regarding inadequacy of the 4 day winter fauna survey conducted for the CER have been raised, particularly:

2.2.2. A 4-day survey is insufficient to record the diversity of fauna present and assess the likely impacts.

As detailed in the CER, the methodology for the fauna assessment included an assessment of habitats present on the site, development of a list of species predicted to be present based on the available habitat, previous surveys, and available information on species requirements and distribution and a four night fauna survey.

A five day (four night) fauna survey was conducted for the CER., Four-night surveys are standard practice for fauna surveys. It is acknowledged that a four night survey is unlikely to record all species present. To achieve this, exhaustive surveys would be required over several seasons and in different years.

The impacts of the proposal were assessed on the basis of the entire list of species potentially occurring at the site, rather than just those recorded during the fauna survey.

2.2.3. Appendix 3: 1.1 Introduction notes 'The timing of the survey during winter is not optimum to record vertebrate fauna present, particularly reptiles which are generally not active at this time of year and seasonal or migratory birds.';

It is acknowledged that winter sampling is not expected to record all of the species that utilise the area. Many reptiles are inactive at the time the survey was undertaken and therefore are more difficult to detect. Seasonal or migratory birds are not necessarily present (or detected) in the winter months. Bird numbers and species diversity are likely to be higher during the most prolific flowering seasons. The list of species predicted to use the site identified a large number of species that were not detected during the sampling. The assessment of the impact of the proposal on terrestrial fauna was however, based on the list of species predicted to use the area, rather than the species identified during the fauna survey.

2.2.4. *The bird survey did not include mist netting;*

It is not generally standard practice to incorporate mist netting as part of a fauna survey, as misting netting can result in injury to trapped birds and bats.

2.2.5. *Appendix 3: 1.4.2 Bird Survey states that 'A single short field trip in winter is unlikely to record the majority of bird species that utilise the site.'; The document should properly list the limitations of the survey conducted and explain why the proponent has disregarded the biological values of the area and why an adequate level of detail was not undertaken, given that the proposal is in a National Park. If the proponent shows this low level of regard for the environment in collecting baseline data , how is it possible to assume that monitoring and management of impacts will be satisfactorily implemented*

Many migratory and seasonal birds are unlikely to be recorded during a single winter period. Faunal values for the area have been assessed using standard survey techniques and a review of the literature to determine important habitat characteristics and the significance to fauna. While the species diversity is lower than that which could be expected during more productive seasons such as spring, the baseline data relied on for the assessment encompasses the results of the field survey, the habitat assessment and the literature review.

The proposed Kalbarri Airport site was excised from the Kalbarri National Park in 1994 by the Parliament of Western Australia. It therefore is not in a National Park.

2.2.6. *Concern has been raised that the time allowed for the fauna survey was compromised because it is stated in Appendix 3 that 'The survey was undertaken at this time to coincide with other planning and environmental studies for the proposed airport.*

Ideally a more productive period such as Spring should be selected to conduct vertebrate fauna surveys to maximise the species diversity detected. Surveys conducted during winter may provide a lower species diversity than that that actually utilises the site. However, the list of species predicted to occur at the site includes all species likely to occur at the site at some stage during the year.

2.2.7. More extensive and scientifically defensible seasonal surveys (over at least 12 months) are necessary to assess diversity, occurrence and importance of species in the area.

Long term seasonal surveys at the site would undoubtably record additional species at the site. The list of species predicted to occur at the site includes all species likely to occur at the site at some stage during the year. This list was used to assess the potential impact of the proposal. It is likely that all of the species known or expected to occur on the site will also occur within the Kalbarri National Park.

2.2.8. How can management plans be developed to ensure that impacts are fully contained within the site, as required by the EPA, if adequate baseline information and an understanding of the existing environment has not been properly demonstrated?

Fauna surveys undertaken on the proposed site of the new Kalbarri Airport utilised accepted industry practice and are consistent with the assessment of development sites. Management plans will be developed to manage the environmental impacts of the proposal.

2.2.9. The consultant should be made to obtain an independent peer review of the methodology to support the adequacy of the information presented.

Standard fauna survey techniques and methodology were used to undertake the assessment of fauna. The vertebrate fauna assessment included a systematic trapping program, habitat assessment, literature review and search of the CALM database. Although no formal peer review has been undertaken, the results of the survey have been considered by technical specialists in a number of Government Departments in consideration of the CER document, including the DEP and CALM.

2.2.10. The fencing structure proposed is unlikely to be successful in excluding feral animals (foxes and cats) or larger animals, such as kangaroo and emus, from the airport area. If the aim is to stop animal movement onto the airport area and to reduce the risk of collision with aircraft, a more substantial structure would be required.

Fencing will be constructed to the requirements for aviation safety. The fence will be designed to exclude kangaroos and emus which may present a safety hazard. Fencing will be constructed using chain mesh and barb wire and will be partially buried. The final design of the fence will be determined in consultation with CALM.

2.2.11. The fence specification should be such that the risk of animals, particularly kangaroos and emus, getting caught up and "hanging" in the fence is to be avoided.

Agreed. The final design of the fence will be determined in consultation with CALM.

2.2.12. The commitment under 6.4.3 concerning management of feral bees should be extended to require that all water sources at the proposed facility be "closed" to access by bees. This should include water tanks and toilets.

The CER states (Section 6.4.3 page 38) that [as] feral bees require water for their hives, the provision of artificial sources of water within the airport will be avoided.

2.3 Soil

2.3.1. The CER does not state whether a Notice of Intent to clear has been lodged with the Commissioner for Soil Conservation or whether advice has been received from the Commissioner on this proposal. In the absence of this advice, it is not possible to assess whether this development is acceptable. Upon receipt of advice from the Commissioner, it should be made public for comment before the EPA prepares its report and recommendations.

The DEP, in providing its advice on Level of Assessment, requires that no Decision Making Authority can cause to implement any approval that may allow a proposal undergoing a formal assessment to be implemented prior to a determination by the Minister for the Environment.

A Notice of Intent to clear will be lodged with the commission for Soil and Land Conservation after the Minister has made her determination.

3. POLLUTION MANAGEMENT

3.1 Stormwater

3.1.1. How will stormwater from the tarmacs be disposed of in a way that will guarantee no groundwater pollution or degradation of surrounding vegetation by hydrocarbons or introduced weeds washing into the vegetation. What monitoring and remediation procedure will be put in place?

Aircraft fuels are highly volatile and evaporate readily. The loss of oil from aeroplane engines contravenes air safety regulations and is accordingly unlikely. Fuel storage will be managed under the Explosives and Dangerous Goods Act and Regulations administered by the Department of Minerals and Energy. Above ground bulk storage areas are fully lined and bunded.

It is proposed that runoff from the runways will be conducted down spoon drains running the length and around the perimeter of the runways. These will be unlined to enable runoff to enter the ground, as soils on the site have good free draining characteristics. The drainage design will ensure maximum infiltration of stormwater and segregation of any areas where there is a risk of contamination. The drainage design will be prepared prior to construction to the requirements of DEP and WRC. Control of weeds will be addressed in the Disease and Weed Management Plan (Commitment 4).

3.2 Groundwater quality

3.2.1. Underground storage of aviation fuel in the sensitive area of the proposed development and above an unconfined aquifer, which may have connections to karst systems, is inappropriate. Conditions to ensure zero fuel leakage to the environmental are essential.

As detailed in Section 6.6.2 of the CER, the risk of contamination of the groundwater under the proposal area will be minimised by designing and constructing the fuel and oils storage area to Australian Standards, primarily Australian Standard 1940-1993 "The Storage and Handling of Flammable and Combustible Liquids". In addition all bulk fuel storage tanks will be designed in accordance with the requirements of the Department of Minerals and Energy Dangerous Goods Division and the *Explosives and Dangerous Goods Act.* The facility will therefore be bunded sufficient to hold in excess of the maximum amount of fuel stored. The tanks will be designed to avoid leakage and with incorporation of leak detection devices. This will avoid contamination issues.. Oil interceptor traps will be provided at refuelling areas to avoid any possibility of hydrocarbon contamination of surface or groundwaters. Underground storage tanks will not be used.

3.2.2. The potential impact of fuel spills should be addressed by the installation of above ground storage tanks in fully bunded areas. Fuel storage should be subject to stringent Ministerial conditions given the location of this proposal in relation to the Kalbarri National Park and an unconfined aquifer.

Noted. See response to 3.2.2

3.2.3. The management of waste oil by removal to Kalbarri should not be encouraged as there is currently no dedicated collection facility in the town. The tank and collection bund at the Kalbarri commercial fishing jetty is in place to recover free product from an existing contamination issue. The use of this facility for waste oil has not been formalised and is often unsuitable. How will waste oil be managed? A commitment should be made to ensure that waste oil from the proposed development should be collected by a waste oil contractor and transported to a dedicated facility (eg Geraldton).

Oil interceptor traps will be provided at refuelling areas to avoid any possibility of hydrocarbon contamination of surface or groundwaters. The quantity of waste oil generated at the proposed new Kalbarri Airport will be minimal. Several waste oil recycling Companies operate collection services periodically in the Mid-west Region, but it is highly unlikely that the quantity of oil generated at the facility will warrant specific collection by the contractors

To ensure timely removal of waste oils, those collected will be stored at Kalbarri for recycling, as is currently undertaken by the Kalbarri fishing industry.

3.3 Sewage and Solid Waste Disposal

3.3.1. The disposal of sewage by septic tank is not acceptable above an unconfined aquifer and alternatives facilities such as composting toilets should be installed.

Commitment 18 states that effluent disposal will [initially] be via a septic tank system. This may be upgraded to an on-site package sewerage system as demand increases. All effluent will be stored and treated in accordance with the Health Department of WA requirements (Timing: during construction; to the requirements of DEP, HDWA and WRC).

It is likely that average depth to groundwater is greater than 25m over the entire site. The risks of nutrient input from sewerage effluent is minimal based on the predicted numbers of passenger movements (Westralian Airports Corporation, 1999a). The addition of nitrogen to the site is likely to be 36kg/yr and phosphorus 7kg/yr (using the assumption that an average household contributes approximately 18kg/N/yr and 3.5kg/P/yr). Hence, based on the relatively deep water table and the low annual nutrient input, impacts from nutrients to groundwater are not significant . Studies have demonstrated that at least 1m of unsaturated soil beneath the septic tank is adequate to purify effluent of bacteria and viruses (Brouwer & Bugeja, 1983). Based on these findings and the absence on development in the areas of high water table, it is considered that there is no potential impact of septic effluent with regard to microbial contamination.

3.4 Dust

3.4.1. The CER should address dust control during construction activities. This could be best achieved through an agreed Dust Management Plan for Construction. This issue is of particular relevance to construction during dry summer months.

Control of dust (soil erosion) is addressed in Section 6.5.3 and 6.5.4 of the CER. Accepted industry practices will be used to manage any dust during construction. Soil stabilisation measures shall be undertaken on cleared and exposed areas of land to minimise the erosion of soil and the potential transport of soil to the drainage system. Stabilising agents, such as mulches from the cleared vegetation, will be used on areas of cleared land as required to prevent dust lift off and destabilisation. In addition, erosion control structures, such as spur drains and check banks, will be used to minimise erosion where necessary.

3.5 Aircraft Noise

3.5.1. What will be the true implications of this proposal for those who cherish the park for its wilderness value? What additional aircraft noise will we expect both from charter flights and from landing aircraft? How often will aircraft noise intrude into the gorges and shatter the tranquillity of the park? CALM should fully oppose this proposal on the grounds that it is not compatible with their management plan and objectives.

Scenario 2 (a stimulus of the base traffic and the attraction of Perth traffic through Geraldton) is thought to be the most likely level of growth that will be realised at the new Kalbarri Airport (Westralia Airports Corporation, 1999a) (Section 2, CER).. The passenger level of 2,800 predicted by Scenario 2 in year 2009 will be provided for in two return services a week on a 14 seat aircraft (eg a Cessna 208 Caravan) at a 65% load, with a smaller aircraft (10 seat or smaller) being used in the immediate to mid term. Passenger movements would need to grow to around 4,500 (Year 2004 in Scenario 3) for a daily return service on a smaller aircraft type and around 3 services a week with a larger 19 seat aircraft (eg Fairchild Dornier Metro 23, Beechcraft 1900).

Flight paths for aircraft using the airport will be determined in the future. Nevertheless with the north-south alignment of the runway, approaches to the airport will be either from the north or the south, depending on the prevailing winds. Aircraft are likely to track to the east of the runway in lining up for their approach, due to the presence of Meanarra Hill to the west of the runway. The north-south alignment of the runway will minimise potential impacts on users of the National Park. The main places of human interest within the National Park are the coastal cliffs, the river gorges and walking trails (CALM, 1999). The closest points of interest within the National Park to the airport are the coastal cliffs 12km to the south-west, and a few well defined tracks approximately 20km to the east of the airport. The noise modelling undertaken indicated that the noise levels at the closest points of interest would be less than 35 dB(A). A noise level of 35dB(A) equates with the typical noise level inside a private office [40dB(A)] or inside a bedroom [30dB(A)].

Light aircraft currently fly over the gorges in the Kalbarri National Park, using the existing airport to the south of the town. The number of scenic flights by light aircraft over flying the gorges in the Kalbarri National Park is not expected to change as a result of the relocation of the airport from the existing site to the south of the town. The number of scenic flights is dependent on demand from visitors for flights, rather than airport location.

The Shire of Northampton through the Kalbarri Airport Management Committee will liaise with CALM, the Department of Transport and Air Services Australia (the Commonwealth regulatory body) to develop flying protocols for scenic flights over the Kalbarri National Park for publication in the 'Enroute Supplement Australia, an advisory document distributed to all pilots by Air Services Australia.

3.5.2. *Development of flying protocols must be given priority by the Department of Transport, Air Services Australia and the Shire of Northampton to protect Kalbarri National Park's visitor values.*

The Shire of Northampton has made a commitment (Commitment 22) to liase with CALM, the Department of Transport and Air Services Australia to develop "Fly Friendly" protocols for scenic flights over the Kalbarri National Park for publication in the "Enroute Supplement Australia". The Fly Friendly Protocols will be developed during operation of the proposed airport and will be to the requirements of DEP, CALM, DOT and Air Services Australia.

3.5.3. *The noise generated by aircraft movements over the gorge area within and adjacent to Kalbarri National Park, including Murchison House Station, will have a significant impact on visitors and ground-based tour operators who use this area. Integral to the protection of the national Park's visitor values is the exclusion of the Murchison River Gorge area from flight and approach paths where alternatives are available. The management plan for Kalbarri National Park, currently in preparation by CALM, will consider regulation of scenic flights over the gorge.*

Light aircraft currently fly over the gorges in the Kalbarri National Park. A "Fly Friendly" protocol will be developed for scenic flights over the Kalbarri National Park for publication in the "Enroute Supplement Australia".

Flight paths for aircraft using the airport will be determined in the future. Nevertheless with the north-south alignment of the runway, approaches to the airport will be either from the north or the south, depending on the prevailing winds. Aircraft are likely to track to the east of the runway in lining up for their approach, due to the presence of Meanarra Hill to the west of the runway. The north-south alignment of the runway will minimise potential impacts on users of the National Park. The minor east west runway will only be used by single and light twin engine aircraft when the cross winds on the main north south runway are greater than 15 knots (8m/sec). When using the east west runway, aircraft will take off and land into the prevailing wind.

3.5.4. *The noise footprint for aircraft taking of and landing to and from the north is present as being 55 to 70 dB over the gorge and Murchison House as modelled with the receiver point at the edge of town. Would this noise level be any greater if the model used a receiver point at the gorge or Murchison House? Additional noise modelling should be conducted to answer this question.*

The noise footprint is independent of individual receiver points. The noise footprint is the calculation of resultant noise levels at infinite receiver points and is based on the noise source of aircraft taking off and landing at a specific location ie from the north. A receiver point is a separate and independent calculation, still based on a noise source at a specific location but only determining the resultant noise level at a specific receiver point. The two calculations are therefore not related as such. However, given the same noise source and same specific receiver point the resultant noise levels are identical whether taken from a point on a noise contour or calculated as a single receiver point.

The LA_{max} noise contours running through Murchison House are 60dB(A) for takeoffs to the north with an easterly wind, or less than 60dB(A) for planes taking off to the north with a north-easterly wind, or taking off to the south (Figure 7). The noise level at Murchison House due to large commercial planes during takeoff therefore complies with the Department of Environmental Protection Criteria.

The location of the gorge referred to is not known and we therefore are not able to comment as to whether the 55 – 70 dB(A) stated in the submission is the correct level.

3.5.5. *It is stated that the noise levels meet DEP criteria of 55 dB when it is indicated to be 60 dB at Murchison House (Figure 7, Case 1 and 2).*

The EPA Objective for Noise is to ensure that the LA_{max} does not exceed 75dB(A) for occasional (1 flight per day) large jet aircraft and 65dB(A) for general aviation aircraft and the Ldn does not exceed 55dB(A) at any residence. The LA_{max} noise contour running through Murchison House are 60dB(A) for takeoffs to the north with an easterly wind, or less than 60dB(A) for planes taking off to the north with a north-easterly wind, or taking off to the south (Figure 7). The noise level at Murchison House due to large commercial planes during takeoff will also comply with the Department of Environmental Protection Criteria.

3.5.6. *Figure 8 showing the ANEF contours is not legible making interpretation of this figure difficult.*

Figure 8 is also described on page 45 of the CER. ANEF contours are a method of determining land use compatibility in the vicinity of airports. For residences, schools, hospitals and public buildings the ANEF contour should be less than 20 to prevent land use conflicts. Figure 8 shows the ANEF 25 and 30 contours are contained within the reserve, and the ANEF 20 protruding for a short distance into the national park, both to the north and south of the runway. The town is approximately 8km from the

ANEF 20 contour and therefore, the proposed airport would not infringe on the amenity of the Kalbarri residences.

3.5.7. *There is a statement concerning aircraft taking off and landing using a "prevailing" easterly wind on the east/west runway however there is no evidence to support this statement of an easterly "prevailing" wind. Please provide supporting data (eg wind rose).*

Light aircraft (ie single engine or light twin) will use the (main) north south runway to take off and land unless the cross wind is greater than 15 knots (8m/sec). When the cross wind is greater than the aircraft's tolerance, the light aircraft will take off and land into the prevailing wind using the (minor) east west runway. Data from the Bureau of Meteorology (Nov 1998) indicates that strong westerly winds (>20km/hr) occur 1% or less of the time.

3.5.8. *In the situation of a westerly wind on take off and with the initial climb to the west, the noise impact on Kalbarri would be much greater. Additional modelling of aircraft noise with a westerly wind should be included.*

Flight paths for aircraft using the airport will be determined in the future. Nevertheless with the north-south alignment of the (main) runway, approaches to the airport will be either from the north or the south, depending on the prevailing winds. Aircraft are likely to track to the east of the runway in lining up for their approach, due to the presence of Meanarra Hill to the west of the runway.

The (minor) east west runway will only be used by single and light twin engine aircraft when the cross winds on the main north south runway are greater than 15 knots (8m/sec). When using the east west runway, aircraft will take off and land into the prevailing wind.

3.5.9. *Minimum cross-wind operations and noise attenuation will be achieved by siting the runway away from built-up areas.*

Agreed. The north south runway will be the main runway. Wind useability figures (Westralian Airports Corporation, 1999a) indicate a second runway is required to satisfy useability criteria and therefore a cross runway (the east west runway) has been incorporated into the proposal. The second runway is not required at this stage, however it will be built in the future when demand and circumstances require its construction. Noise modelling undertaken for the (main) north south runway and the (minor) east west runway indicated the proposed site complied with the EPA noise objectives for the proposal.

3.5.10. Low flying in the gorge areas will need to be negotiated and agreed with appropriate organisations.

Light aircraft currently fly over the gorges in the Kalbarri National Park.

The Shire of Northampton has made a commitment (Commitment 22) to liase with CALM, the Department of Transport and Air Services Australia to develop "Fly Friendly" protocols for scenic flights over the Kalbarri National Park for publication in the "Enroute Supplement Australia", an advisory document distributed to all pilots by Air Services Australia. Fly Friendly protocols have been developed for other sensitive locations as a means of alerting pilots to observe procedures when flying over sensitive areas. . The development of a fly friendly procedure within ERSA will have the effect of alerting not just the pilots using the proposed airport but all pilots irrespective of the airport used, of the appropriate protocols for flying over the Kalbarri National Park.

The Fly Friendly Protocols will be developed during operation of the proposed airport and will be to the requirements of DEP, CALM, DOT and Air Services Australia.

4. SOCIAL SURROUNDINGS

4.1 Visual Amenity

1.1.1. The proposed management of visual amenity in Section 6.8.3 states that the airport will be located so that it is not visible from the Ajana-Kalbarri Road, the main visitor locations within the national park or Meanarra Hill Lookout. Yet the commitment in Section 6.8.4 only proposes to "minimise visual impacts" from these locations. The commitment should strengthened to state that the airport will not be visible from these key tourist locations.

The wording of Commitment 23 is thought to be appropriate.

4.2 Culture and Heritage

4.2.1. Reports detailing the archaeological survey and ethnographic consultations have not been lodged with the Aboriginal Affairs Department.

The reports will be lodged with the Aboriginal Affairs Department.

4.2.2. Consultation with aboriginal groups with an interest in the area is confusing. The documentation provided in the CER indicated there was remaining uncertainty that all interested groups had been fully consulted and were satisfied with the clearance procedure. Please clarify.

The Nanda Working Party has been consulted. In its consideration of the proposal, the entire Nanda Working Group resolved that the two sub groups who had inspected the

site had been adequately consulted, but that a third sub group should also be allowed to carry out an inspection. Despite several verbal and written requests since November 1999, the Nanda Working Party's legal adviser has not yet advised of the composition of the third sub-group. The two groups who together make up the Nanda Working Group of the Yamatji Land and Sea Council did not identify any sites of significance. It is concluded that the study area does not contain any sites of significance.

4.2.3. The development should not proceed until the Nanda Working Group has been consulted and confirm that no sites with Aboriginal significance will be impacted.

See response to 4.2.2.

4.2.4 The commitment to a contingency plan in the event sites of cultural significance are discovered during construction is strongly supported

Acknowledged.

RESPONSE TO AUSTRALIAN HERITAGE COMMISSION SUBMISSION ON THE KALBARRI AIRPORT CER

The Australian Heritage Commission raised several issues in its submission, which are addressed below.

FAUNA

The Long Billed or Baudin's Black Cockatoo (*Calyptorhynchus baudinii*), classified as a Schedule 1 species in WA, does not occur north of the Perth region (Johnstone and Storr, 1998).

There are two subspecies of the Western (Long billed) Corella (*Cacatua pastinator*). *Cacatua pastinator* Cp butleri, listed as Schedule 1 in WA occurs between Northam and Dongara. *C. pastinator* Cp pastinator is confined to a small part of the sub humid south west interior. Neither subspecies occurs north of the Dongara region. It is therefore unlikely the species would be present at the site.

The range of the Regent Parrott (*Polytelis anthopeplus*) extends north to Kalbarri but the species does not occur close to the coast at Kalbarri. Its habitat of lightly to moderately wooded country was not present on the site. The species is not listed as a Scheduled or Priority species in WA.

The Osprey (*Pandion haliaetus*) is not listed as a Scheduled or Priority species in WA. It feeds mainly on fish and uses tall trees or structures for breeding platforms. Suitable habitat for the Osprey within the Kalbarri National Park occurs adjacent to the river and coastal cliffs. There is no suitable habitat within the site, which is located approximately 5km from the Murchison River and 10km from the coast and is thus distant from the preferred feeding areas. The construction of airport facilities may create artificial breeding nesting sites. However this is considered unlikely due to the distance to the river and the coast and the availability of habitat within Kalbarri National Park.

The Barking Owl (*Ninox connivens*) occurs in WA in the Kimberlies, Pilbara and the South West. It is not recognised by Johnstone and Storr (1998) as occurring in the Kalbarri region. It breeds in hollow trees within forest areas. Suitable breeding habitat for the Barking Owl therefore does not occur within the site.

The Rock Parrot (*Neophema petrophila*) is not listed as a Schedule or Priority species in WA. Its preferred habitat is rocky coastlines. It would therefore be expected to occur along the coastal section of Kalbarri National Park and adjoining areas if it is present in the region. It is unlikely to occur on the site due to an absence of suitable habitat.

It is acknowledged that the Mallee fowl is considered vulnerable at a National level as well as being protected in WA. However, as stated in the CER, the preferred habitat for this species is not present in the survey area and the species is therefore unlikely to occur within the study area.

The blind snake *Ramphotyphlops leptosonia* is endemic to WA. Its range extends from north of Shark Bay peninsular south to Geraldton. It was identified in the CER as a species likely to occur within the study area. It is not currently listed as a schedule or priority taxa in WA.

Flora

It is acknowledged that the proposal will impact on a population of *Hemingia pimelifolia*, a Priority 3 species. The proponent has undertaken (Commitment 2) to conduct further surveys of the airport reserve to identify additional populations of *H. pimelifolia*.

Disturbance/Loss of Habitat

The proposal will result in the disturbance of 48ha of the airport reserve. The remainder of the airport reserve (585ha) will not be directly impacted by the proposal and will be managed to provide protection for flora and fauna and buffer any impacts from the airport on the surrounding National Park.

The loss of 48ha of habitat is unlikely to affect the conservation status of any of the fauna recorded or likely to occur on the sire. All of the species recorded or likely to occur on the site are expected to occur within habitats available within Kalbarri National Park. The Park supports extensive areas of similar habitat to that found within the airport reserve as well as a variety of other habitats.

Selection of Alternative Sites

Selection criteria were developed by Wallace Emery & Associates Pty Ltd in order to assess the relative engineering, social **and environmental** impacts of alternative sites for Kalbarri Airport. The selection criteria, which are detailed in Section 3 of the CER, included runway alignment, obstacle limitations, drainage, proximity to town and town planning **impact on Kalbarri National Park** and earthworks (longitudinal slope, rate of change of slope and sight distance).

Recognition of Aboriginal Heritage Sites

With respect to the AHC's comment about the recognition of Aboriginal sites during construction, the CER states (Section 6.9.5) that contractors will receive training in the recognition of Aboriginal Heritage material or sites.