

18 September, 2020
Our File Ref: B20355AL001
Contact: Ben Hargreaves

AS Residential Property No 1 Pty Ltd
c/- ISPT Operations
Level 11, 8 Exhibition Street
Melbourne, Vic 3000

Attention: Anna Martiniello

**RE: 179-217 CENTRE DANDENONG ROAD, DINGLEY VILLAGE
FORMER KINGSWOOD GOLF COURSE REDEVELOPMENT
AVIATION ASSESSMENT**

1. INTRODUCTION

This letter of advice has been completed by REHBEIN Airport Consulting for the proposed redevelopment of the former Kingswood Golf Course located at 179 – 217 Centre Dandenong Road, Dingley Village (the Site). The letter updates a previous assessment undertaken in 2016 (ref: B15660AL001) and is based on previous information about the Site and the proposed development provided in 2015¹, and information supplied about the new proposal². **Figure 1** below illustrates the proposal.

The proposed development is a rezoning of the subject site from the Special Use Zone (Schedule 1 – SUZ1 Golf Courses) and the General Residential Zone (Schedule 3 – GRZ3) to the General Residential Zone (Schedule 2 – GRZ2) and Development Plan Overlay (Schedule 8 – DPO8) for an approximate 53 hectares infill residential development of approximately 850 new residential dwellings within Dingley Village.

The National Airports Safeguarding Advisory Group has developed the National Airports Safeguarding Framework (**NASF**) to ensure aviation safety requirements are recognised in land use planning decisions through a comprehensive set of guidelines.

REHBEIN Airport Consulting was engaged by AS Residential Property No 1 Pty Ltd to assess and comment on the proposal in relation to the following NASF Guidelines:

- § *Guideline B – Managing the Risk of Building generated windshear and Turbulence at Airports;*
- § *Guideline C – Managing the Risk of Wildlife Strikes in the Vicinity of Airports;*
- § *Guideline E – Managing the Risk of Distraction to Pilots from Lighting in the Vicinity of Airports;*
- § *Guideline F – Managing the Risk of Intrusions into the Protected Operational Airspace of Airports;*
- § *Guideline G – Protecting Aviation Facilities – Communication, Navigation and Surveillance (CNS);*
- § *Guideline H – Protecting Strategically Important Helicopter Landing Sites; and*
- § *Guideline I – Managing the Risk in Public Safety Areas at the Ends of Runways.*

¹ Planning Report, Kingswood Golf Course – Planning Scheme Amendment – Preliminary Strategic Assessment of Proposed Rezoning, prepared by Tract Consultants Pty Ltd on behalf of ISPT Pty Ltd 10 August 2015)

² New Proposal – Former Kingswood Gold Course – 0314-0701-10-U-D012, Sept 2020

DIRECTORS
SENIOR ASSOCIATES

Brendan L Rehbein Ashley P Ruffin Steve A Williams Brent F Woolgar
Melissa L Braun Fred A Gattuso Ben J Hargreaves Martyn D Illingsworth
David A Lenarduzzi Andrew M Pezzutti

BRISBANE • CAIRNS • MELBOURNE

CBD House, Level 3, 120 Wickham Street (PO Box 112) Fortitude Valley, Qld 4006
Telephone: (07) 3250 9000 www.lar.net.au Facsimile: (07) 3250 9001

NASF Guideline D – Managing the Risk to Aviation Safety of Wind Turbine Installations (Wind Farms)/Wind Monitoring Towers is not applicable to the proposed residential development.

The assessments above and findings are set out in this letter. NASF Guideline A - Measures for Managing Impacts of Aircraft Noise has been addressed by others and does not form part of the scope of this assessment.

Figure 1: Proposed Development



Source: Tract Consultants

2. MOORABBIN AIRPORT

Moorabbin Airport is located less than two (2) kilometres due west of the subject site. The airport has five operational runways with the following characteristics:

- § Runway 04/22 – 571m long, 18m wide;
- § Runway 13L/31R – 1,150m long, 30m wide;
- § Runway 13R/31L – 1,060m long, 18m wide;
- § Runway 17L/35R – 1,335m long, 30m wide; and
- § Runway 17R/35L – 1,240m long, 18m wide.

Moorabbin Airport is Australia's leading flight training airport and one identified by the Australian Government as being strategically important for Australia. The airport is one of the busiest airports in Australia by total aircraft movements, with around 272,000 recorded movements during 2019. The majority of these movements are undertaken by single and light twin piston engine aircraft operating training circuit and 'touch-and-go' operations.

The airport's aviation development plan, as set out in the Moorabbin Airport Master Plan 2015, provides the settings necessary to deliver improved aviation growth and centres on expanding flight training activity. The Airport Master Plan and growth forecasts are due for update in 2021.

Moorabbin Airport Corporation (MAC) has stated publicly that it supports the NASF Guidelines, and has already started using them to guide the consideration of on-airport developments and as the basis of responses to off-airport development proposals. MAC is committed to, and fully supportive of, appropriate regional development in and around Moorabbin Airport. However, MAC believes it is important that development decisions are made in accordance with the NASF guidelines.

3. BUILDING GENERATED WINDSHEAR AND TURBULENCE

NASF Guideline B – Managing the Risk of Building Generated Windshear and Turbulence at Airports addresses the issue of building generated windshear and turbulence in the aviation context.

NASF Guideline B defines a Windshear and Turbulence Assessment Trigger Area around the runway ends as follows:

- § 1,200m or closer perpendicular from the runway centreline (or extended runway centreline);
- § 900m or closer in front of the runway threshold (towards the landside of the airport); and
- § 500m or closer from the runway threshold along the runway.

Figure B20255/01 attached indicates that the Site is located outside the windshear and turbulence assessment trigger area and therefore in accordance with Guideline B no further assessment is required.

4. WILDLIFE HAZARD MANAGEMENT

NASF Guideline C – Managing the Risk of Wildlife Strikes in the Vicinity of Airports provides guidance on managing the risk of collision between wildlife and aircraft at or near airports. *NASF Guideline C* provides advice to help protect against wildlife hazards originating off-airport. Appropriate land use planning decisions and the way in which existing land use is managed in the vicinity of airports can significantly reduce the risk of wildlife hazards. *NASF Guideline C* includes specific advice on land uses with the potential to become high risk wildlife attractants, which is based on advice from the International Civil Aviation Organisation (ICAO).

The subject site is located within the 3 km buffer radius (Area A) from the Moorabbin Airport runways as identified in *NASF Guideline C*, per **Figure B20355/02** attached.

Whilst *NASF Guideline C* does not specifically identify residential land use, certain land uses identified in the guideline may relate to elements inherent within the proposed Site residential subdivision design. These land uses include “Wildlife sanctuary / conservation area – wetland”, which requires mitigation within Area A (i.e. 3 km from an airport runway) to minimise risk of bird attraction.

The proposed redevelopment could alter the wildlife movements between the Site and surrounding area as a result of the following design elements:

- § three (3) large waterbodies areas and open space reserves totalling approximately 10,000m² for fauna habitat;
- § integrating the creation of stormwater retention wetlands to provide additional wetland habitat; and
- § provision of nest boxes for birds across the development.³

The Australian Airports Association *Airport Practice Note 6 – Managing Bird Strike Risk (September 2015)*, provides information on reducing the water attraction to birds.

Proposed planting schedules by Tract Consultants, Landscape Architects for the parkland and retention basin wetland concepts will be in accordance with the Melbourne Water Constructed Wetlands Design Manual. Should a risk of bird strike be deemed to be present, measures should be considered in the design to minimise bird and flying fox attraction on the site such as using non-attractant plant species in landscaping, managing water lakes and detention pond features, and providing closed storage of food scraps until collection.

Clause 20 of *NASF Guideline C* states that it is also essential that new land uses and changes to land zoning within 13 km of the airport property are regularly monitored and have action plans created to mitigate any unacceptable increase in the risk of bird strike should it be determined to exist.

³ Draft Planning Report, Kingswood Golf Course – Planning Scheme Amendment – Preliminary Strategic Assessment of Proposed Rezoning, prepared by Tract Consultants Pty Ltd on behalf of ISPT Pty Ltd (10 August 2015)

It is therefore recommended that a suitably qualified professional experienced in airport wildlife hazards undertake review of the proposed development concept, including the large waterbodies with respect to presence of a wildlife hazard risk to aircraft using Moorabbin Airport to comply with NASF Guideline C.

5. LIGHTING RESTRICTIONS

Pilots are reliant on the specific patterns of aeronautical ground lights during inclement weather and outside daylight hours. Lighting in the vicinity of airports can be a potential hazard by causing confusion, distraction, or glare to pilots in the air. Guidelines for managing the risk of distractions to pilots from lighting in the vicinity of airports are provided in the *NASF Guideline E – Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports*.

The Civil Aviation Safety Authority (CASA) Manual of Standards Part 139, (MOS Part 139) Chapter 9 outlines the requirements for lighting within 6km of a relevant airport. Lighting restrictions are based on four (4) lighting zones (A to D) which surround a runway with the closest zone, Zone A, the most onerous. Chapter 9 also outlines the requirements for lighting within 6 km of a relevant airport.

Part of the proposed residential development falls within the 6 km lighting sensitive area or buffer radius, which is applied from the centre point of each runway. The geometry of the lighting control zones and sensitive area is illustrated in Figure 9.21-1 in Chapter 9 of the CASA MOS Part 139. The proposed development must comply with the lighting sensitive area.

It is recommended that the use of lighting in the Site should ensure suitable screening or shielding of the light sources, including construction lighting and street lighting to minimise light above the horizontal plane to comply with *NASF Guideline E*. Particular attention should be given to any lighting associated with the proposed informal sports and recreation space along Centre Dandenong Road.

6. AIRSPACE

NASF Guideline F – Managing the Risk of Intrusions into the Protected Operational Airspace of Airports provides guidance to address issues of intrusions into the operational airspace around airports. As Moorabbin Airport is a leased federal airport, the Cth. *Airports (Protection of Airspace) Regulations 1996* also apply to any development on the Site.

The Site is beneath the Moorabbin Airport Master Plan 2015 Obstacle Limitation Surfaces (OLS) Inner Horizontal surface which is at an elevation of 58 m above the Australian Height Datum (AHD). Existing and future PANS-OPS protection surfaces are all higher than the OLS over the subject site.⁴

⁴ Refer Moorabbin Airport Master Plan 2015 Figure 11.10 Future OLS and Figure 11.11 Future PANS-OPS

The Plan of Survey prepared by Hellier McFarland (Reference number 9940S/1 version A, dated 29/07/2015) provides the ground levels for the proposed site in Australian Height Datum (AHD). The ground levels range from 20.3m AHD to 31.8m AHD.

We have been advised the proposal seeks to apply the GRZ2 to allow residential development up to a maximum height limit of 11m. It is recommended that the heights of residential buildings, including any permanent structures (e.g. masts, antennae, floodlights or the like), gaseous exhaust plumes, and/or temporary construction equipment should be designed so as to not infringe the OLS surfaces of Moorabbin Airport. Any intrusion, whether temporary or permanent, of the OLS requires approval under the *Airport (Protection of Airspace) Regulations 1996*.

7. COMMUNICATIONS, NAVIGATION AND SURVEILLANCE (CNS) FACILITIES

The purpose of NASF Guideline G – Protecting Aviation Facilities – Communications Navigation and Surveillance (CNS) (November 2016) is to provide land use planning guidance to better protect CNS facilities which support the systems and processes in place by Airservices Australia (Airservices), the Department of Defence (Defence) or other agencies under contract with the Australian Government, to safely manage the flow of aircraft into, out of and across Australian airspace.

The Guideline defines Building Restricted Areas (BRA) which can extend up to 15 km from a CNS facility, in some instances.

In terms of the CNS facilities located on Moorabbin Airport, none of the BRA extents extend outside the airport boundary. Therefore development on the Site will not infringe any BRAs associated with CNS facilities on Moorabbin Airport.

8. STRATEGICALLY IMPORTANT HELICOPTER LANDING SITES (HLS)

NASF Guideline H – Protecting Strategically Important Helicopter Landing Sites (May 2018) provides guidance to State/Territory and local government decision makers well as the owners/operators of identified strategically important HLS in order to protect their operation from incompatible surrounding development.

The Guideline applies only to HLS which are not located on aerodromes and thus is not relevant in relation to Moorabbin Airport. Protection of on-airport HLS is a matter for Moorabbin Airport Corporation through the application of prescribed airspace restrictions under the *Cth. Airports (Protection of Airspace) Regulations 1996*.

Off-aerodrome HLS which are considered strategically important (ie hospital) are protected under DDOs within the Victorian Planning Scheme.

9. PUBLIC SAFETY AREAS

NASF Guideline I – Managing the Risk in Public Safety Areas at the Ends of Runways (November 2018) is intended to provide guidance to Australian Government, state, territory and local government decision makers on the assessment and treatment of potential increases in risk to public safety which could result from an aircraft incident or development proposal in areas near the end of an airport runway.

Under the Guideline, residential development is considered to be incompatible within Public Safety Areas (PSAs).

The Moorabbin Airport Master Plan 2015 does not define the Moorabbin Airport PSAs, as it pre-dates Guideline I. It is expected that the PSAs will be defined in the next Master Plan update. Guideline I allows PSAs to be defined in two ways, each of which results in areas that originate at the ends of runways and extend away from the runway on either side of the extended centreline, narrowing with distance from the runway.

Based on Guideline I, the Site is not located in an area that would be expected to form part of any PSAs for Moorabbin Airport.

10. CONCLUSION

This letter describes assessment of the proposed development NASF Guidelines B, C, E and F, G, H and I. With respect to these guidelines the assessment has found that:

- The Site does not fall within the *NASF Guideline B* assessment trigger areas for building generated windshear and turbulence and as such no further assessment is required in accordance with Guideline B;
- The proposed redevelopment of the Site could alter the wildlife movements across the subject site and surrounding area. It is recommended that a suitably qualified professional experienced in airport wildlife hazards assess the detailed proposed subdivision layout, including the large waterbodies, with respect to wildlife hazard risk to aircraft using Moorabbin Airport to comply with *NASF Guideline C*;
- Lighting on the Site should ensure suitable screening or shielding of the light sources, including construction lighting and street lighting, to minimise light above the horizontal plane to comply with *NASF Guideline E* and the applicable Civil Aviation Regulations;
- The heights of residential buildings, including any associated permanent structures (e.g. masts, antennae, floodlights or the like), gaseous exhaust plumes, and/or temporary construction equipment should be designed so as not to infringe the OLS surfaces of Moorabbin Airport to comply with *NASF Guideline F*. The OLS limit over the site is currently 58 m above the Australian Height Datum. Any intrusion, whether temporary or permanent, of the OLS requires approval under the *Airport (Protection of Airspace) Regulations 1996*;

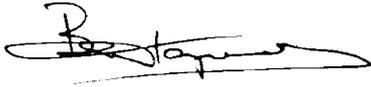
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- Development on the Site will not infringe any Building Restricted Areas associated with CNS facilities on Moorabbin Airport;
- NASF Guideline H is not relevant to Moorabbin Airport Helicopter Landing Sites. Strategically important HLS through Victoria are subject to DDOs under the Victorian Planning Scheme; and
- Based on NASF Guideline I, the Site is not located in an area that would be expected to form part of any Public Safety Area for Moorabbin Airport, within which new residential development would be considered incompatible.

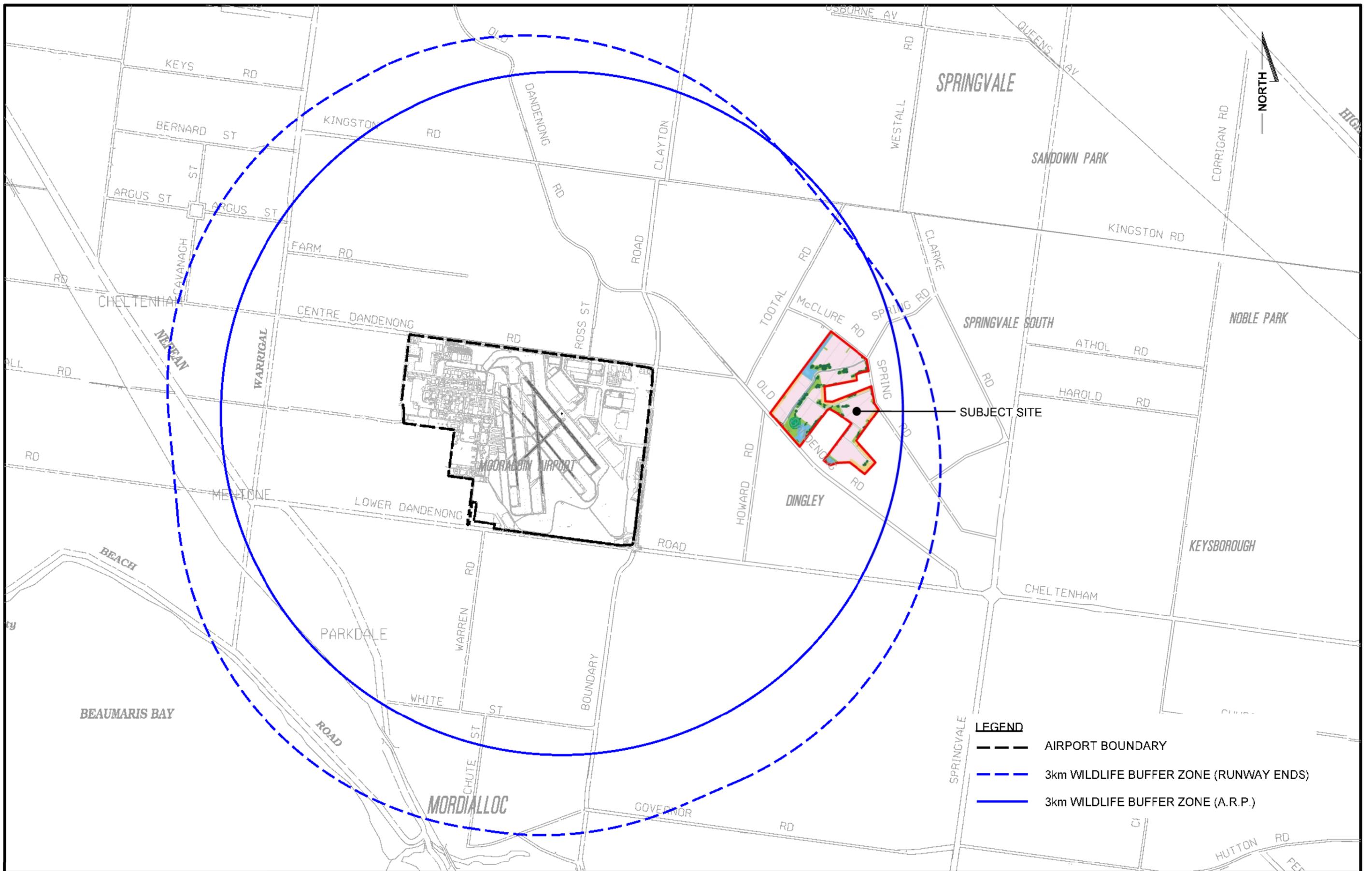
For further information in relation to this matter please contact the undersigned.

Yours faithfully
For and on behalf of
LAMBERT & REHBEIN (SEQ) PTY LTD



B.J. HARGREAVES M.Eng, M.Sc, C.Eng MICE, MIEAust, CPEng
NATIONAL MANAGER – AVIATION
SENIOR ASSOCIATE

Enc: Figure B20335/01
Figure B20355/02



LEGEND

- AIRPORT BOUNDARY
- - - 3km WILDLIFE BUFFER ZONE (RUNWAY ENDS)
- 3km WILDLIFE BUFFER ZONE (A.R.P.)

Project
PROPOSED REDEVELOPMENT
179-217 CENTRE DANDENONG RD

0 300 900 1500m

Client
AS RESIDENTIAL PROPERTY No.1 PTY LTD

Title
MOORABBIN AIRPORT
WILDLIFE BUFFER ZONE

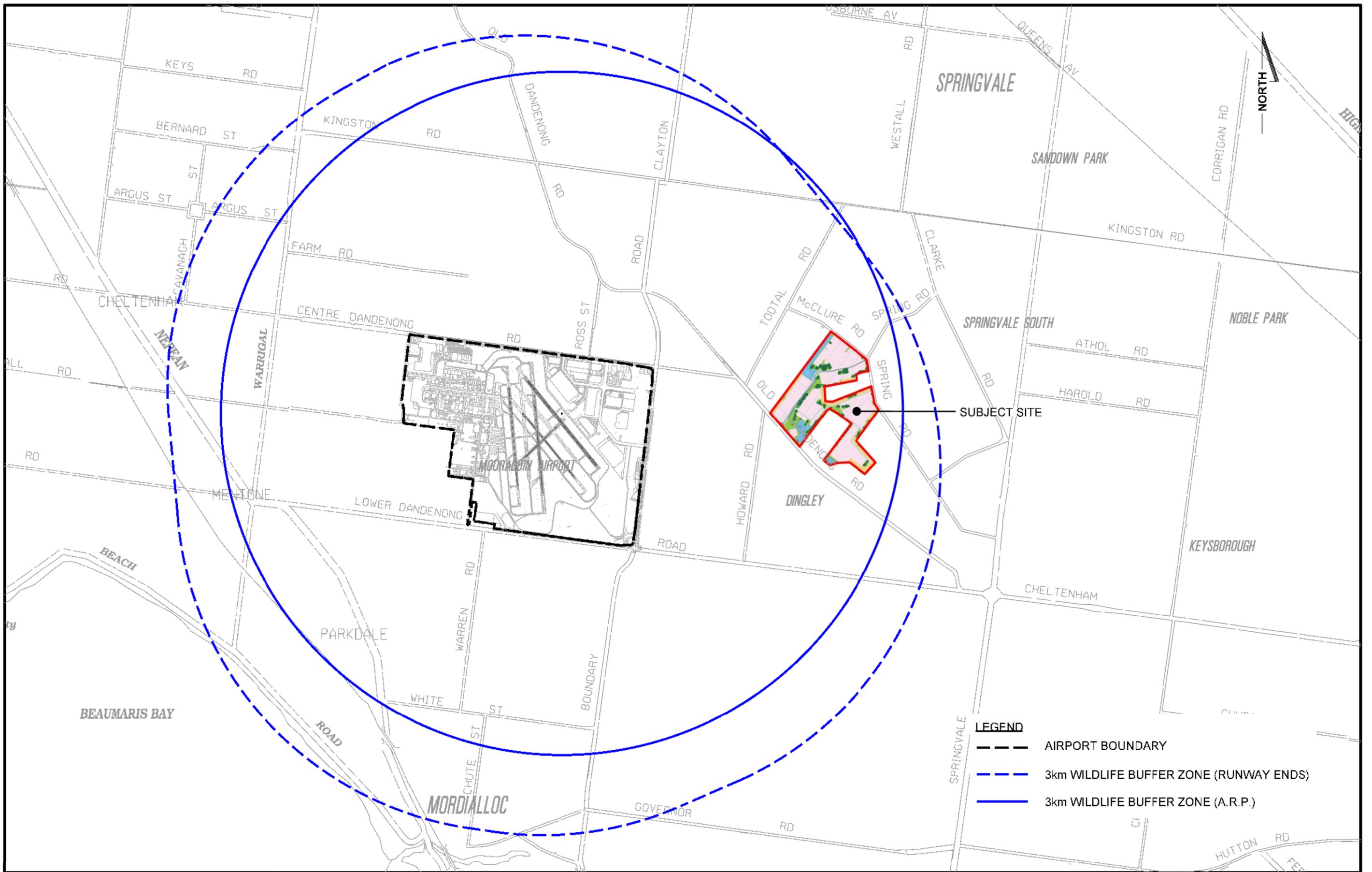
REHBEIN Airport Consulting

The Association of Consulting Engineers Australia

CBD HOUSE, Level 3
 120 WICKHAM STREET
 FORTITUDE VALLEY QLD 4006
 A.C.N. 126 939 768
 TELEPHONE (07) 3250 9000
 FACSIMILE (07) 3250 9001
 EMAIL mail@ar.net.au

Drawn: CMF Checked: BJH Approved: BJH

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- AIRPORT BOUNDARY
 - - - - 3km WILDLIFE BUFFER ZONE (RUNWAY ENDS)
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CBD HOUSE, Level 3
 120 WICKHAM STREET
 FORTITUDE VALLEY QLD 4006
 A.C.N. 126 939 768
 TELEPHONE (07) 3250 9000
 FACSIMILE (07) 3250 9001
 EMAIL mail@ar.net.au

Drawn: CMF Checked: BJH Approved: BJH

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