


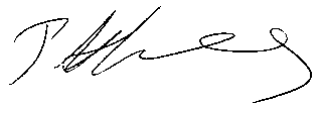
Croom Regional Sporting Complex reconfiguration

Aviation Management Plan

Roads and Maritime Services | March 2018

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Table of Contents

1	Introduction	1
1.1	Context.....	1
1.2	Background.....	1
1.3	Purpose.....	1
1.4	Consultation	4
2	CRSC reconfiguration works.....	6
2.1	Work covered by the MOWP	6
3	Relevant legislation and guidelines	7
3.1	Legislation and regulatory requirements.....	7
3.2	Guidelines and standards.....	7
4	Existing environment	8
4.1	Illawarra Regional Airport	8
4.2	Surrounding environment	8
4.3	Airspace protection.....	9
5	Construction impacts.....	11
5.1	Airspace intrusion.....	11
5.2	Other hazards	11
6	Environmental management measures	12
6.1	Aviation Method of Working Plan.....	12
7	Compliance management	18
7.1	Roles and responsibilities.....	18
7.2	Training	20
7.3	Monitoring and inspections.....	20
8	Review and improvement	21
8.1	Continuous improvement.....	21
8.2	AMP update and amendment.....	21

Tables

Table 1-1:	Conditions relevant to this AMP	2
Table 1-2:	REMMs relevant to this AMP	3
Table 6-1	Aviation management measures.....	13

Figures

Figure 4-1:	Illawarra Regional Airport layout showing obstacle limitation surface.....	10
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Appendices

Appendix A:	Aviation Method of Working Plan – CRSC Reconfiguration Works
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Glossary / Abbreviations

AMP	Aviation Management Plan
APRB	Albion Park Rail bypass
ASA	Airservices Australia
ATC	Air Traffic Control
CASA	Civil Aviation Safety Authority
CCS	Community Communications Strategy
CEMP _r	Construction environmental management process
CoA	The Planning Minister's conditions of approval
CRSC	Croom Regional Sporting Complex
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
ER	Independent Environmental Representative nominated by Roads and Maritime and approved by DP&E
MOWP	Method of Working Plan
NOTAM	Notices to Airmen
OLS	Obstacle limitation surface
Project, the	Croom Regional Sporting Complex reconfiguration
RFFS	Rescue and Firefighting Services
REMM	Revised environmental management measure
Roads and Maritime	Roads and Maritime Services
SCC	Shellharbour City Council
SPIR	Submissions and Preferred Infrastructure Report
SSI	The state significant infrastructure as generally described in Schedule 1 (SSI-6878) of the Infrastructure Approval
WSO	Work Safety Officer

1 Introduction

1.1 Context

This Aviation Management Plan (AMP) has been prepared for the Croom Regional Sporting Complex (CRSC) reconfiguration (the Project), which forms Stage 1 of the Albion Park Rail bypass (APRb) project.

This AMP has been prepared to address the requirements of the conditions of approval (CoA) set out in the Infrastructure Approval (SSI 6878 dated 30 January 2018), the Revised Environmental Management Measures (REMMs) and all applicable legislation relating to management of impacts of construction of the CRSC on aircraft and airport operation at the Illawarra Regional Airport.

1.2 Background

The APRb Environmental Impact Statement (EIS), as amended by the Submissions and Preferred Infrastructure Report (SPIR), assessed the impacts of the CRSC reconfiguration on aircraft and airport operation at the Illawarra Regional Airport.

1.3 Purpose

The key objective of the AMP is to ensure that any impacts on aviation at the Illawarra Regional Airport during the CRSC reconfiguration works are minimised and are within the scope permitted by the Infrastructure Approval through the implementation of an Aviation Method of Work Plan (MOWP). An Aviation MOWP has been prepared for the CRSC works and is appended to this AMP (Appendix A).

The AMP and the MOWP provide:

- controls and procedures to be implemented during construction activities to avoid, minimise or manage potential adverse aviation impacts due to the reconfiguration works
- measures to be implemented to address the relevant CoAs and REMMs
- measures to be implemented to comply with all relevant legislation and other requirements as described in Section 3 of this AMP.

The CoAs and REMMs which apply to the MOWP are listed in Table 1-1 and Table 1-2 below, together with a cross-reference to where the requirements are addressed in this AMP.

Table 1-1: Conditions relevant to this AMP

CoA	Condition Requirements	AMP Ref
E2	The SSI must be delivered and operated to comply with the Code 2 (Runway 08/26) and Code 3 (Runway 16/34) OLS for the Illawarra Regional Airport, except as provided for under Condition E3 and Condition E7.	S6.1
E3	<p>An Aviation Method of Working Plan must be developed for the Illawarra Regional Airport by an appropriately qualified expert in aviation safety in consultation with the airport operator. The Plan must provide details of any proposed works that may impact on airport operations and events. The plan must include:</p> <p>a) Identification of works likely to cause a hazard to or impact on aircraft and airport operations including but not limited to, intrusions into the Code 2 (Runway 08/26) and Code 3 (Runway 16/34) OLS, dust and debris, wildlife hazards, lighting and light spill, glare and reflection, and impacts from plant and equipment on aviation infrastructure (such as communication, navigation and surveillance facilities and structures)</p> <p>b) Identification and consultation with appropriate operators of impacted aviation infrastructure and instrument flight procedures at the airport, and known flight scheduling</p> <p>c) Procedures to ensure that the runways can operate when required</p> <p>d) Procedures to ensure impacts resulting in the closures or restriction of operations at either runway are limited to a duration considered reasonable in consultation with the airport operator</p> <p>e) Mitigation measures for the management of those impacts and hazards to aircraft and airport operations from works and</p> <p>f) Monitoring of the effectiveness of mitigation measures to ensure impacts and hazards to aircraft and airport operations is managed at all times throughout the works.</p> <p>The Plan must be made publicly available prior to the commencement of any works that impact the operation of the Illawarra Regional Airport or within two weeks of any update to the Plan.</p>	<p>AMP S1.4, S5, S6.1 App A</p> <p>AMP S5 App A S2.1</p> <p>AMP S1.4</p> <p>AMP Table 6-1 App A</p> <p>AMP S6 App A</p> <p>AMP Table 6-1 App A</p> <p>AMP S7.1, S7.3 App A S5.2</p> <p>AMP S1.4.4</p>
E4	<p>Should any works have the potential to interfere with aircraft operations, CASA, ASA, the Airport Operator and aircraft operators must be advised at least two weeks in advance of such works.</p> <p>All appropriate notices as may be required of these stakeholders including Notices to Airmen (NOTAM) must be prepared and received 3 days prior to the carrying out of the works.</p>	<p>S1.4.4, S6.1 App A</p> <p>AMP Table 6-1 A05-A09</p>
E5	Works must not impede the running of the Wings Over Illawarra Air Show (nominally the first weekend of May (12:00 am Thursday to 11:59 pm Sunday). This includes the full operation of Runway 16/34 for the duration of the Air Show. Consultation must be undertaken with Shellharbour City Council to address this matter at least two weeks prior to the Air Show.	<p>AMP Table 6-1 A37, A38 CRSC Community Communication Strategy (CCS)</p>

CoA	Condition Requirements	AMP Ref
AE6	All lighting associated with works (including outside standard construction hours) and operation of the SSI, including lighting associated with the Croom Regional Sporting Complex, must comply with Section 9.21 of the Manual of Standards Part 139 – Aerodromes (as updated from time to time) and the National Airports Safeguarding Framework Guideline E ‘Managing the Risk of Distraction to Pilots from Lighting in the Vicinity of Airports.’	AMP Table 6-1 A39, A40
E8	Vegetation and landscaping other than groundcover within the road reserve must not intrude into the Code 2 (Runway 08/26) and Code 3 (Runway 16/34) OLS.	AMP Table 6-1 A41 Landscaping will be carried out in accordance with the CRSC Site Redevelopment Landscaping Package prepared by Taylor Brammer Landscape Architects and the FFMP
E9	Mitigation measures described in section 4 of the Albion Park Rail Bypass SPIR, Appendix B Addendum Aviation Assessment, September 2017, Hyder Cardno Joint Venture, must be implemented, except as required by this approval.	Refer TT02 and TT03 in Table 1-2 below

Table 1-2: REMMs relevant to this AMP

REMM	Management Measure	AMP Ref
TT02	<p>As part of the project a Method of Working Plan, in accordance with the CASA Manual of Standards Part 139, is to be prepared. The Method of Working Plan would set out the arrangements for carrying out all works which may impact on aviation safety, any necessary restrictions to aircraft operations, how these would be implemented, administered and managed to ensure safety.</p> <p>The Method of Working Plan will be agreed with the aerodrome operator (Shellharbour City Council) and subject to consultation with all stakeholders including regulatory agencies (CASA, Airservices Australia) and all aircraft operators at Illawarra Regional Airport prior to the commencement of works which may affect operations at the airport.</p>	<p>Appendices A and B, AMP S1.4, S6.1, Table 6-1</p> <p>AMP S1.4</p>
TT03	Any construction impact on the airspace operational requirements of the Illawarra Regional Airport will be managed in consultation with Shellharbour City Council and incorporated into the construction environmental management plan.	AMP S1.4, S6.1, S6.1 Appendices A and B

1.4 Consultation

1.4.1 Consultation undertaken for the EIS

In order to complete the assessment of impacts on the Illawarra Regional Airport's operational airspace, confirmation of the obstacle limitation surfaces (OLS) which apply was required. The airport operator, Shellharbour City Council (SCC), was consulted during the preparation of the EIS to obtain a copy of the OLS which it seeks to protect from development.

1.4.2 Consultation undertaken for the Aviation MOWP

CoA E3 requires the Aviation Method of Work Plan (MOWP) to be prepared in consultation with the airport operator, SCC. In order to address this requirement, Roads and Maritime provided the draft MOWPs to SCC in March 2018. Matthew Youell, Council's Director of Sustainability, reviewed the Aviation MOWP and associated documentation provided and approved the MOWP on behalf of Council for the Airport in an email to Roads and Maritime dated 16 March 2018.

SCC advised in their email response that *"The MOWPs are live documents and the management details for the operations of the Airport will need to be updated upon return of our Airport Manager, but should not have impact to the Airport Operations with the cooperative management and communication by all responsible parties of the MOWPs. Any disruptions to operations will be managed as outlined in the draft MOWPs and all costs associated with the project reimbursed, where applicable."*

1.4.3 Consultation during construction

During construction the Contractor will be required to undertake liaison with the airport operator (SCC) as outlined in Section 6 of this AMP and detailed in the MOWP.

Notices to Airmen (NOTAM) will be prepared as required during construction to provide details of works with the potential to intrude into airspace (further details in Table 6-1). All appropriate notices including NOTAM will be prepared in advance and the Contractor will ensure that they are received by the stakeholders 3 days prior to the carrying out of the works. Requirements for NOTAM are identified in Section 3.3 of the MOWP.

As required by CoA E4, should any works have the potential to interfere with aircraft operations, CASA, ASA, the Airport Operator and aircraft operators will be advised by the Contractor at least two weeks in advance of such works. The procedures provided in the MOWP and summarised in Table 6-1 below will ensure that the runways can operate when required and that impacts resulting in the closures or restriction of operations at the airport will not be required.

1.4.4 Availability and distribution

This AMP, including MOWP, will be made publicly available via the Project website in accordance with CoA B11. The AMP will be published on the website prior to the commencement of any works that impact the operation of the Illawarra Regional Airport or within two weeks of any update to the AMP.

The MOWP will be distributed to the following organisations prior to the commencement of any works which may impact on the airport:

- General Manager Aviation
- Roads and Maritime Project Manager
- Contractor Project Manager
- Works Safety Officer (WSO)
- CASA Aerodrome Inspector
- Air Traffic Control
- Rescue and Firefighting Services (RFFS)
- Airservices Australia (Canberra NOTAM Office nof@airservicesaustralia.com and Procedures Design Section pds.procs@airservicesaustralia.com)
- any additional stakeholders identified by Shellharbour City Council and the Illawarra Regional Airport.

2 CRSC reconfiguration works

The CRSC works involve the reconfiguration of sporting fields and associated buildings and amenities directly impacted by the extension of the Princes Motorway.

The key features of the CRSC reconfiguration works include:

- a new combined AFL/cricket oval and cricket pitch with associated irrigation, drainage and earthworks
- new practice cricket nets
- six new grass netball courts
- reconfiguring the junior rugby league fields to the south of the present location
- constructing three internal roads, pedestrian/cycle paths, car parking facilities associated with the netball court, cricket, hockey and junior football fields including associated earthworks and supporting infrastructure including stormwater drains
- reconfiguring the existing equestrian area to cater for Pony Club and public usage
- amenity buildings for the AFL/cricket club and the junior rugby league club
- landscaping and establishment of playing field surfaces.

Ancillary site AS10 will be utilised to support the CRSC reconfiguration works and includes:

- an access road off Croom Road to the south of the existing access
- office accommodation
- staff amenities
- light vehicle parking
- equipment, material and chemical storage.

2.1 Work covered by the MOWP

The works to which the MOWP apply are described in Section 2.1 of the MOWP.

The reconfiguration works to which the MOWP in Appendix A applies include the relocation of sporting fields, existing ancillary facilities, the installation of temporary site access from Croome Road and the construction of temporary site compound AS10. The reconfiguration works areas to which the MOWP applies are located in:

- Area C – the portion of works located closest to the southern boundary of the Illawarra Regional Airport
- Area D – the portion of works located south of the existing sports fields
- Area E - the portion of works associated with the 'greenfields' development of new facilities at the CRSC and located south of the existing sports fields.

Annex A of the MOWP shows the location and extent of these work areas.

3 Relevant legislation and guidelines

3.1 Legislation and regulatory requirements

Legislation relevant to aviation includes:

- *Civil Aviation Act 1988*
- Civil Aviation Regulations 1988 (and supporting Civil Aviation Orders)
- Civil Aviation Safety Regulations 1998.

All pilots and aircraft operators must comply with this legislation which defines standards for airworthiness, licensing requirements, rules for the operation of aircraft and maintenance.

In addition, aerodromes may be registered or certified by the Civil Aviation Safety Authority (CASA) under Part 139 of the Civil Aviation Safety Regulations 1998. Registered and certified aerodromes must comply with the applicable Part 139 requirements. Aerodromes with published instrument flight procedures must also comply with certain requirements under Part 173 of these regulations.

CASA regulates the industry for adherence to the various regulations, as well as providing a range of guidance to operators as to how this may be achieved.

3.2 Guidelines and standards

The main guidelines, specifications and policy documents relevant to this AMP include:

- International Civil Aviation Organisation (ICAO) Standards and Recommended Practices
- Manual of Standards Part 139 – Aerodromes (CASA Manual of Standards Part 139)
- National Airports Safeguarding Framework (developed by the National Airports Safeguarding Advisory Group).

4 Existing environment

4.1 Illawarra Regional Airport

Illawarra Regional Airport is a security controlled, registered aerodrome under Part 139 of the Civil Aviation Safety Regulations 1998. The airport is owned and operated by SCC. It provides maintenance and engineering services for aircraft ranging from ultralight to medium size turboprop and jet aircraft. The airport also houses the Historical Aircraft Restoration Society museum and workshop. There are currently 25 groups operating out of the airport, of which 15 are commercial operators.

In the 2014/15 financial year, 11,297 flight movements occurred to / from the airport, averaging 941 flights per month. The airport facilities allow aircraft up to 25 tonnes to category 2C standards to operate. This includes all light general aviation aeroplanes, turboprop types such as the Dash 8-300 (50-seat) and several small private jet types such as the Cessna Citation. In October 2017, JETGO Australia commenced offering commercial flights to / from Melbourne and Brisbane six times per week using Embraer ERJ135 twin-engine regional jets (37 seat).

Illawarra Regional Airport has a non-directional beacon owned by Airservices Australia.

There are two operational runways at the airport:

- **Runway 16/34** is the primary runway and is aligned north–south. The runway is 1819 m long, 30 m wide and has lighting to allow night-time operations. A Precision Approach Path Indicator system is provided to both ends of the runway to help pilots follow an accurate approach gradient when landing. In general, the runway meets the code 3C requirements, subject to correction of vertical grading at the northern end and widening of the runway strip within which the runway is located. However, the existing OLS do not meet code 3 standards.
- **Runway 08/26** is a secondary runway aligned east–west. The runway is 931 m long and 30 m wide. It is used when wind conditions dictate the crosswind component for operations on Runway 16/34 exceed the maximum allowable. Due to its length, it is only used by smaller aircraft. There are no night-time operations on Runway 08/26.

The CRSC is located to the south of the Airport. The layout of Illawarra Regional Airport in relation to the CRSC is shown in Figure 4-1.

4.2 Surrounding environment

The existing Princes Highway passes next to the northern boundary of the airport. The roundabout intersection with the Illawarra Highway is some 260 m north of the Runway 16 obstacle limitation surface threshold. The terrain surrounding the airport is undulating, with substantial hills about 3 km south-south-east and 4 km south-south-west. The Illawarra Escarpment is about 10 km to the north.

4.3 Airspace protection

Obstacle limitation surfaces (OLS) are a series of surfaces in the airspace surrounding an airport. They describe the volume and dimensions of operational airspace that must be kept clear of obstacles for the safe operation of aircraft.

The CASA Manual of Standards Part 139 defines the OLS for registered aerodromes such as Illawarra Regional Airport. The characteristics of the OLS are determined with reference to a series of parameters which relate to the physical features and operational capability of the runways at the aerodrome.

The existing Illawarra Regional Airport OLS are based on the standards that apply to Code 2 aeroplanes. This is primarily due to the surrounding obstacle environment, which prevents the standards for larger Code 3 aeroplanes being achieved.

However, Runway 16/34 at the airport already meets or is capable of being upgraded to meet, the physical requirements for Code 3 aeroplanes in several other respects. Therefore, SCC, the operator of the Illawarra Regional Airport, seeks to ensure that new structures remain outside of the OLS that would apply in these upgraded circumstances. This prospective limitation is termed the 'aspirational obstacle limitation surface'. The approximate location of the existing and aspirational OLS are shown in Figure 4-1. The indicative boundary of the Project is shown in red in Figure 4-1.

Two sections of the CRSC reconfiguration works would encroach on the OLS - to the south of the Macquarie Rivulet and at Croome Road. In both of these locations, existing infrastructure and topography already encroach on the OLS.

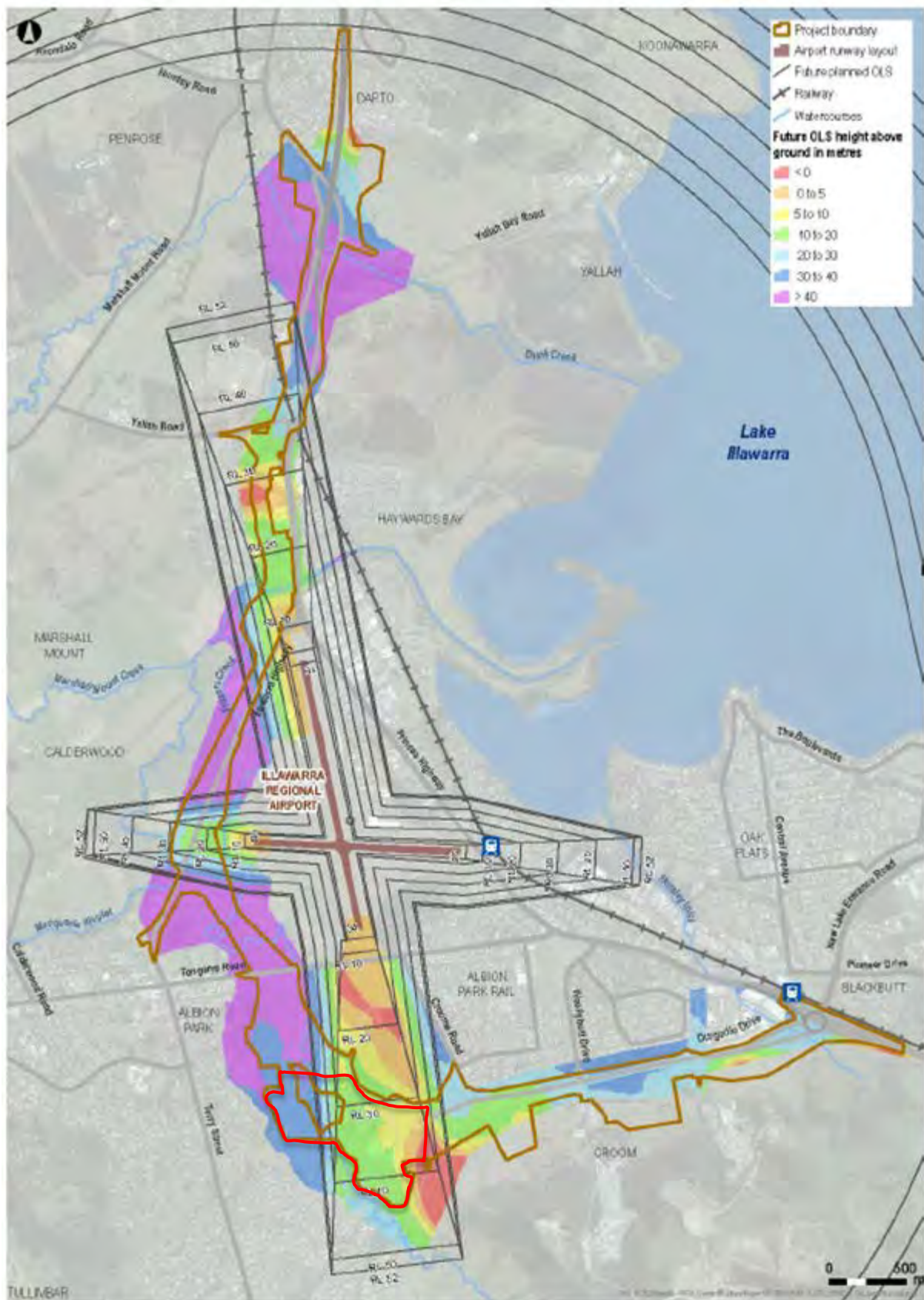


Figure 4-1: Illawarra Regional Airport layout showing obstacle limitation surface

5 Construction impacts

The potential impacts of the CRSC reconfiguration works on the Illawarra Regional Airport fall into two categories:

- intrusion of airspace by construction plant and equipment
- other hazards to aircraft operations as a result of construction activities.

5.1 Airspace intrusion

The plant and equipment to be used for the reconfiguration works and utility works have the potential to intrude into the southern OLS of the airport (refer Figure 4-1), which could potentially impact on the airport operational requirements, increase operational hazards to aircraft and reduce safety. The works which may intrude into airspace are described in Section 5.1.1. These works will be covered by the MOWP provided in Appendices A.

Reconfiguration works outside the areas defined in the MOWP will comply with the Code 2 (Runway 08/26) and Code 3 (Runway 16/34) OLS for the Illawarra Regional Airport

5.1.1 Reconfiguration works

Works undertaken in Areas C, D and E utilising cranes and construction equipment may penetrate the OLS take-off surface associated with runway 16/34.

5.2 Other hazards

The following construction impacts could affect the safety of aircraft operations at the Illawarra Regional Airport:

- **Lighting:** ground lights could confuse or distract pilots as a result of their colour, position, pattern or intensity of light emission above the horizontal plane. Temporary fixed and portable lighting structures will meet the requirements for light control described in Section 9.21 of the CASA Manual of Standards Part 139. This may require modification of standard equipment or shielding.
- **Dust and debris:** construction activities which generate dust and debris may reduce visibility. The air quality measures identified in the CEMPr Air Quality Management Plan will be implemented to address this issue.
- **Wildlife hazards:** wildlife strikes and / or their avoidance can cause major damage to aircraft and reduce safety. There is low potential to offer alternative habitats and sources of food which attract wildlife and change feeding, roosting and flocking behaviours in the vicinity of flight paths and therefore no mitigation measures are required.

6 Environmental management measures

A range of requirements and management measures relating to aviation are identified in the CoAs and REMMs. Details of the requirements to address impacts on aviation are provided in the following sections.

6.1 Aviation Method of Working Plan

The MOWP for the reconfiguration works is provided in Appendix A. The MOWP sets out the arrangements for carrying out works to ensure no impact on aviation safety and operation at the Illawarra Regional Airport.

The MOWP was prepared by Nick Borley, Principal Aviation Consultant of Rehbein Airport Consulting. Rehbein Airport Consulting is a specialist airport and aviation business which provides a wide range of specialist airport and aviation related professional services. Nick Borley is an appropriately qualified expert in aviation safety with over 20 years' experience within the aviation industry, specialising in advice on aviation matters and aerodrome obstacle assessment and management. Nick's qualifications are as follows:

- Bachelor of Science (Computer Science) – ANU, Canberra
- Fixed Wing Commercial Pilots Licence – ARN 418671
- Multi Engine Command Instrument Rating (13 renewals)
- Flight Instructor Rating (Grade II)
- ICAO PANS-OPS Instrument Procedures Design – RAAF, Strategic Airspace
- TERPS / PANS-OPS Procedure Conversion – NavCanada
- ICAO Advanced PANS-OPS – Singapore Aviation Academy
- TP308 Design Criteria – NavCanada
- PANS-OPS, APV/BARO VNAV – Air Navigation Institute, Switzerland.

As required by CoA E3, the MOWP has been issued in accordance with MOS Part 139 under the authority of the Shellharbour City Council as the aerodrome operator. The MOWP was approved by SCC prior to the commencement of works which may affect operations at the airport (refer Section 1.4.2).

Construction impacts on the airspace operational requirements of the Illawarra Regional Airport will be managed in consultation with SCC.

The works likely to cause a hazard to or impact on aircraft and airport operations are described in Sections 2.1 and 5 of this AMP and Section 2.1 of the MOWPs. All works in the in the areas designated in the MOWP will be carried out in accordance with the MOWP.

The approach to managing impacts on aviation safety provided in the MOWP is to identify the appropriate controls for working within the designated reconfigurations works Areas C, D and E. The management measures provided in the MOWP and addressing the requirements of the CoAs and REMMs are summarised in Table 6-1 below.

The procedures provided in the MOWP and summarised in Table 6-1 will ensure that the runways can operate when required and that impacts resulting in the closures or restriction of operations at either runway will be avoided.

Table 6-1 Aviation management measures

ID	Measure / Requirement	Timing	Responsibility	Reference
GENERAL				
A01	Where possible the OLS should be preserved or appropriate risk mitigators applied to ensure ongoing safe operations	Construction	Project Manager	App A S3.1
A02	The Contractor will be required to work on a ten (10) minute recall in which time all equipment will be lowered to a height below the OLS	Construction	Project Manager	App A S4.4
PERMITTED WORK HOURS				
A03	In all stages the work will be carried out during daylight hours between 0700 and 1800 local time, Mondays to Fridays inclusive.	Construction	Project Manager	App A S2.2
EMERGENCIES AND ADVERSE WEATHER				
A04	Where applicable equipment will be lowered to below the restrictive OLS surface in the event of an aircraft emergency or as directed by the WSO	Construction	Project Manager	App A S3.2
NOTAM				
A05	Information for the preparation of a NOTAM must be received by the aerodrome at least 3 days prior to the carrying out of the works.	Pre-Construction	Project Manager WSO	App A S2.2
A06	NOTAM – Works In Progress A) WOLLONGONG AD B) UTC C) UTC E) WIP SOUTH OF RWY 16	Pre-Construction	Project Manager WSO	App A S3.3
A07	NOTAM – Works in Area C - E A) WOLLONGONG AD B) UTC C) UTC E) OBST CRANE xxx ft AMSL BRG x.xx Nm FM ARP INFRINGES OLS.	Pre-Construction	Project Manager WSO	App A S3.3

ID	Measure / Requirement	Timing	Responsibility	Reference
A09	<p>The WSO will:</p> <ul style="list-style-type: none"> ensure NOTAM are in accordance with the MOWP ensure work requiring NOTAM is not conducted unless NOTAM are in place and adequately cover the extent of the works provide a draft of any additional NOTAM requirements to Shellharbour City Council 	Pre-Construction Construction	WSO	App A S5.2
A10	The Contractor's Project Manager will liaise with the WSO to initiate and cancel work related NOTAMS through the NOTAM Office in Sydney	Pre-Construction Construction	Project Manager WSO	App A S5.2
PERSONNEL, EQUIPMENT, SECURITY AND ACCESS				
A11	The Contractor's personnel will be briefed on the MOWPs. All personnel must complete an induction approved by Shellharbour City Council prior to the commencement of works. The induction must remain current for the duration of the works.	Pre-Construction Construction	Project Manager WSO	App A S4.4
A12	All personnel will wear high visibility vests.	Construction	All personnel	App A S4.4
A13	All vehicles and plant not engaged in the works will be parked clear of the works area or below the protected airspace surface.	Construction	Project Manager All personnel	App A S4.4
A14	To ensure the safety of aircraft operations and site personnel, plant, materials and equipment are to vacate within 10 minutes (time-limited works) as directed by the WSO in all work areas and any other areas as directed by the WSO.	Construction	Project Manager All personnel	App A S4.4
A15	All personnel associated with the work will follow any instructions issued by the WSO.	Construction	All personnel WSO	App A S4.4
A16	Vehicle rotating hazard beacons, as required by CASA MOS Part 139 subsections 9.19.1 and 10.9.2 are required to be used to indicate to aircrew and others of the presence of vehicles or mobile plant. Hazard beacons must be mounted on the top of the vehicle, so as to provide 360° visibility. Beacons must be flashing amber	Construction	Project Manager All personnel	App A S4.4
A17	At the end of each work period, all plant and equipment will be parked in a location determined by the WSO.	Construction	Project Manager WSO All personnel	App A S4.4

ID	Measure / Requirement	Timing	Responsibility	Reference
A18	No personnel are envisaged to require airside access in undertaking the works. Any access airside by personnel will be under the direction and appropriate escort of an approved person.	Construction	Project Manager WSO All personnel	App A S4.4
A19	Any Contractor staff required to work airside will be subject to Shellharbour City Council's Drugs and Alcohol Management Program (DAMP).	Construction	Project Manager All personnel	App A S4.5
A20	Any Contractor staff required to work airside will be subject to the security requirements of Shellharbour City Council and Illawarra Regional Airport. No building, container, vehicle or equipment will be parked/left within 3 m of the airside fence.	Construction	Project Manager All personnel	App A S4.6
A21	<p>Access for the Contractor's work vehicles airside is not envisaged to be required. In cases where access is required vehicles will be escorted by the WSO.</p> <p>Drivers operating airside must obey all signs and, unless otherwise indicated, adhere to the following speed limits:</p> <ul style="list-style-type: none"> • 10 km/hr within 15 m of an aircraft • 25 km/hr elsewhere on an aircraft parking apron and • 40 km/hr elsewhere unless posted otherwise. <p>Access to the applicable work areas will be via public and private thoroughfares. No vehicular access will be required airside.</p>	Construction	Project Manager WSO All personnel	App A S4.7
CRSC RECONFIGURATION WORKS – AREAS C, D, E				
A22	<ul style="list-style-type: none"> • Planned commencement date: 26/3/2018 Planned completion date: 26/9/2019 • Works will not commence until the date specified above or as amended by NOTAM • The actual date and time of commencement of the works will be advised by NOTAM • Works for each area must be completed by the date/time specified above or by agreement with Shellharbour City Council • Works will not commence in each area until approved to do so by the WSO on each day 	Pre- construction Construction	Project Manager WSO	App A S2.2, 4.1

ID	Measure / Requirement	Timing	Responsibility	Reference
A23	The Contractor will notify the WSO of commencement and end of works	Pre-construction	Project Manager	App A S4.2
A24	Information in relation to position, magnitude and duration of penetration for works utilising cranes and construction equipment which may penetrate the OLS take-off surface associated with Runway 16 will be published via NOTAM	Pre-construction	Project Manager WSO	App A S3.1
A25	The Contractor's construction activities must not extend beyond a 20 m radius of any planned component of construction	Construction	Project Manager	App A S4.2
A26	The Contractor will be subject to time-limited works and subject to a 10-minute recall of all plant, equipment, materials and personnel as directed by the WSO in which equipment will be lowered below the OLS	Construction	Project Manager	App A S4.2
A27	Works will only recommence on the direction of the WSO.	Construction	Project Manager WSO	App A S4.2
LOCAL EVENTS				
A37	Reconfiguration works will not impede the running of the Wings Over Illawarra Air Show (nominally the first weekend of May, including full operation of Runway 16/34 for the duration of the Air Show	Construction	Project Manager	CoA E5
A38	The Contractor will undertake consultation with the Illawarra Air Show organisers and SCC at least two weeks prior to the Air Show or any other events likely to be impacted by the Project to minimise disruption to these events.	Construction	Project Manager	CoA E5 CRSC CCS
LIGHTING				
A39	Temporary fixed and portable lighting structures will meet the requirements for light control described in Section 9.21 of the CASA Manual of Standards Part 139.	Construction	Project Manager	CoA's
A40	Floodlighting or any other lighting required for carrying out aerodrome works will be shielded so as not to represent a hazard to aircraft operations.	Construction	Project Manager	App A S5.2

ID	Measure / Requirement	Timing	Responsibility	Reference
LANDSCAPING				
A41	Vegetation and landscaping other than groundcover within the road reserve will not intrude into the Code 2 (Runway 08/26) and Code 3 (Runway 16/34) OLS.	Construction	Project Manager	CRSC Site Redevelopment Landscaping Package prepared by Taylor Brammer Landscape Architects CRSC FFMP
AIR QUALITY				
A42	The air quality measures identified in the CEMPr Air Quality Management Plan will be implemented to ensure that construction activities which generate dust and debris do not reduce visibility.	Construction	Project Manager	CEMPPr AQMP

7 Compliance management

7.1 Roles and responsibilities

The Contractor delivering the CRSC reconfiguration works will be responsible for implementing the requirements of this AMP and the Aviation MOWP.

7.1.1 Contractor's Project Manager

The Contractor's Project Manager will liaise with the WSO for the duration of the works. The Project Manager will also be responsible for liaising with other regulatory authorities (CASA, ASA and Airservices Australia) when implementing the AMP and the MOWP. The Contractor will be responsible for consultation and notifications to SCC, NOTAM, CASA, ASA and consultation with the organisers of the Illawarra Air Show and any other local events.

The Contractor's Project Manager will also be responsible for:

- ensuring that the approved aviation safety management measures are implemented and maintained in accordance with the approved plans
- conducting regular inspections of the measures in the AMP and MOWP to ensure that they are being effectively implemented
- informing the WSO on matters relating to the Project
- liaising with the WSO to initiate and cancel work related NOTAMS through the NOTAM Office in Sydney (tel 02 6268 5063)
- providing training to the Contractor's personnel on the safety precautions required during the works under the AMP and the MOWP
- receiving and responding to queries concerning the MOWP
- amending and updating the AMP to ensure that it remain current as the works progresses
- identifying situations where unsafe conditions are occurring and providing recommendations for improvement
- maintaining current copies of the AMP and MOWP and their controlled distribution
- liaising with Roads and Maritime and other authorities such as the SCC, NOTAM, CASA and ASA on aviation safety management
- facilitating aviation safety awareness and giving toolbox talks to site personnel.

7.1.2 Work Safety Officer

Shellharbour City Council is appointed as the agency responsible for the provision of the WSO for the works. Accordingly, the WSO is responsible directly to Shellharbour City Council for the maintenance of standards and aircraft safety aspects of the works.

The Works Safety Officer (WSO) is the Shellharbour City Council duty WSO. The WSO's responsibilities include:

- use the call-signs "Safety One", "Safety Two" and "Safety Three" etc
- be in contact at all times while work is in progress and maintain radio listening watch
- ensure that work is carried out in such a manner that no hazard to aircraft operations exists at any time
- ensure that the works are conducted in accordance with the MOWP in relation to safe operation of aircraft
- be responsible for the correct positioning of equipment as shown on the MOWP sketches
- provide liaison between the Air Traffic Control (ATC) and construction staff
- liaise with the Contractor's Project Manager and initiate and cancel NOTAMS as required.

The specific functions of WSO are contained within CASA MOS 139 Section 10.12 and include:

- ensure the safety of aircraft operations
- maintain radio communications on the appropriate frequency operating at the time
- ensure NOTAM are in accordance with the MOWP
- ensure work requiring NOTAM is not conducted unless NOTAM are in place and adequately cover the extent of the works
- provide a draft of any additional NOTAM requirements to Shellharbour City Council
- provide daily works updates to ATC and Shellharbour City Council through the Contractor to ensure the safety of aircraft operations
- ensure that temporary obstructions and time limited works are undertaken in accordance with MOS 139 and the MOWP
- ensure that vehicles, plant and equipment are properly marked and lit
- ensure that access routes are clearly identified with suitably controlled access
- protect underground power and control cables, especially to navigation aids, by requiring dig permits
- report immediately to the appropriate authority any incident, accident or damage likely to affect aircraft safety
- remain on call while work is in progress (during standard working hours and any out of hours works) and the aerodrome is open to aircraft operations and remain on standby after hours
- ensure that radio call signs are properly assigned to vehicles
- ensure that the movement area is safe for normal aircraft operations following the removal of vehicles, plant equipment and personnel from the works area

- with time limited works, ensure that the area is properly restored for aircraft operations, within timeframes agreed to by the WSO and ATC, before the time scheduled or notified for an aircraft movement
- ensure that work is carried out in such a way that no hazard to aircraft operations exist at any time
- briefing the Contractor's Project Manager, Superintendent, staff and subcontractors on the safety precautions outlined within this MOWP to ensure safe and timely progress
- ensure that floodlighting or any other lighting required for carrying out aerodrome works is shielded so as not to represent a hazard to aircraft operations.

7.2 Training

All employees, contractors and utility staff working on site will undergo site induction training relating to aviation issues and will complete an induction on the MOWP approved by Shellharbour City Council prior to the commencement of works. This induction must remain current for the duration of the works. The induction training will address elements related to aviation management including:

- existence and requirements of this AMP and the MOWP, including any modifications or updates
- relevant legislation
- roles and responsibilities for avoiding impacts on aviation
- response procedure for dealing with aviation incidents.

7.3 Monitoring and inspections

Monitoring and inspections of activities with the potential to cause aviation impacts will occur for the duration of the CRSC works. The monitoring and inspection responsibilities of the Contractor's Project Manager and the WSO are described in Section 7.1.

8 Review and improvement

8.1 Continuous improvement

Continuous improvement of this AMP will be achieved by the ongoing evaluation of performance to identify opportunities for improvement. The continuous improvement process will:

- identify areas of opportunity for improvement and performance
- determine the cause or causes of non-conformances and deficiencies
- develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- verify the effectiveness of the corrective and preventative actions
- document any changes in procedures resulting from process improvement.

8.2 AMP update and amendment

This AMP and MOWP may be revised as required during the Project if required. No variation to the MOWP will be made without consultation with and the approval of Shellharbour City Council.

Copies of any updated AMP and MOWP will be distributed to all relevant stakeholders (Section 1.4.4).

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Appendix A: Aviation Method of Working Plan – CRSC Reconfiguration Works

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METHOD OF WORKING PLAN

MOWP Number:
Issue Number:
Date of Issue:
Amendment Number:
Date of Amendment:

AIRPORT: WOLLONGONG (YWOL)

PROJECT

DESCRIPTION: ALBION PARK RAIL BYPASS - CROOM REGIONAL SPORTING
COMPLEX RECONFIGURATION WORKS

DATES:

Approval of MOWP	TBA
Commencement of works	TBA
Completion of works	TBA
Expiry of MOWP	TBA

CONTENTS

		PAGE
	TITLE PAGE	1
1	INTRODUCTION	2
2	WORKS INFORMATION	2
3	RESTRICTIONS TO AIRCRAFT OPERATIONS	3
4	RESTRICTIONS TO WORKS ORGANISATION	4
5	ADMINISTRATION	6
6	AUTHORITY	9
	ANNEXES	10
	DISTRIBUTION LIST	10

1. INTRODUCTION

The proposed Croom Regional Sporting Complex (CRSC) reconfiguration works are enabling works for the Albion Park Rail bypass project. The proposed works are located to the south of Wollongong Airport in Croom and generally coincident with the extended centreline of runway 16/34.

The works are subject to this Method of Working Plan (MOWP) which provides details on the extent of the works and the work stages.

2. WORKS INFORMATION

2.1. Scope of Works

Works include the relocation of sporting fields, existing ancillary facilities, the installation of temporary site access from Croome Road and the construction of a temporary site compound.

Annex A illustrates the proposed work areas. The works areas have been separated to assist with a smooth construction process along with, as far as practicable, limiting the operational impacts on Wollongong Airport.

Works areas are defined as follows:

- AREA C – The portion of works associated with the reconfiguration of CRSC infrastructure and located closest to the southern boundary of Wollongong Airport;
- AREA D – The portion of works associated with the reconfiguration of CRSC infrastructure and located south of the existing sports fields; and
- AREA E - The portion of works associated with the 'Greenfields' development of new facilities at the CRSC and located south of the existing sports fields.

2.2. Timing

AREA	Planned Date	Commencement	Duration	Completion
C	26/03/2018	26/03/2018	18 months	26/09/2019
D	26/03/2018	26/03/2018	18 months	26/09/2019
E	26/03/2018	26/03/2018	18 months	26/09/2019

The actual date and time of commencement will be advised by NOTAM. Information for the preparation of a NOTAM must be received by the aerodrome at least 3 days prior to the carrying out of the works.

2.3. Permitted Working Hours

In all stages the work will be carried out during daylight hours between 0700 and 1800 local time, Mondays to Fridays inclusive.

3. RESTRICTIONS TO AIRCRAFT OPERATIONS

3.1. Work Areas

Annex A illustrates the works area plans.

The infringement of any obstacle limitation surface increases operational hazards to aircraft and reduces safety. Where possible the surfaces should be preserved or appropriate risk mitigators applied to ensure ongoing safe operations.

The following work areas and procedures have been developed to assist in mitigating the risk.

Works undertaken in AREA – C, D, and E utilising cranes and construction equipment may penetrate the OLS take-off surface associated with runway 16. Appropriate information in relation to position, magnitude and duration of penetration should be published via NOTAM.

All works are subject to a short notice, ten (10) minute, recall in which equipment will be lowered below the OLS.

3.2. Emergencies and Adverse Weather

Where applicable equipment will be lowered to below the restrictive OLS surface in the event of an aircraft emergency or as directed by the Work Safety Officer (WSO).

3.3. NOTAM

NOTAM – Works In Progress

- A) WOLLONGONG AD
- B) UTC
- C) UTC
- E) WIP SOUTH OF RWY 16

NOTAM – Works in Area C - E

- A) WOLLONGONG AD
- B) UTC
- C) UTC
- E) OBST CRANE xxx ft AMSL BRG x.xx Nm FM ARP
INFRINGES OLS.

4. RESTRICTIONS TO WORK ORGANISATIONS

4.1. Commencement of works

Works are not to commence for each area until:

- The date/time specified at section 2.2 Timing of this MOWP or as amended by NOTAM; and
- Approved to do so by the Works Safety Officer (WSO) on each day.

4.2. Works Area

Annex A illustrates the work area plans.

Area C D E

- The work organisation is to notify the WSO of commencement and end of works.
- The work organisation's construction activities must not extend beyond a 20m radius of any planned component of construction.
- The work organisation is subject to time-limited works and subject to a 10-minute recall of all plant, equipment, materials and personnel as directed by the WSO.
- The work organisation is to notify the WSO of commencement and end of works.
- Works may recommence on the direction of the WSO.

4.3. Completion of works

Works for each area must be completed by the date/time specified in section 2.2 Timing of this MOWP or by agreement with Shellharbour City Council.

4.4. Personnel and Equipment

- Works personnel must be briefed on this MOWP. All personnel must complete an induction approved by Shellharbour City Council prior to the commencement of works. This induction remains current for the duration of the works.
- All personnel are required to wear high visibility vests.
- All vehicles and plant not engaged in the works shall be parked clear of the works area or below the protected airspace surface.
- To ensure the safety of aircraft operations and works personnel, plant, materials and equipment are to vacate within 10 minutes (Time-limited works) as directed by the WSO in all work areas and any other areas as directed by the WSO.

-
- All personnel associated with the work shall follow by any instructions issued by the WSO.
 - Vehicle rotating hazard beacons, as required by CASA MOS Part 139 subsections 9.19.1 and 10.9.2 are required to be used to indicate to aircrew and others of the presence of vehicles or mobile plant. Hazard beacons must be mounted on the top of the vehicle, so as to provide 360° visibility. Beacons must be flashing amber.
 - At the end of each work period, all plant and equipment is to be parked in a location determined by the WSO.
 - No personnel are envisaged to require airside access in undertaking these works. Any access airside by personnel will be under the direction and appropriate escort of an approved person.

4.5. Drugs and Alcohol

Any staff required to work airside shall be subject to Shellharbour City Council's Drugs and Alcohol Management Program (DAMP).

4.6. Security

Any staff required to work airside shall be subject to the security requirements of Shellharbour City Council and Wollongong Airport.

No building, container, vehicle or equipment shall be parked/left within 3 m of the airside fence.

4.7. Access

Access for work vehicles airside is not envisaged to be required. In cases should access be required vehicles are to be escorted by the Works Safety Officer.

Drivers operating airside must obey all signs and, unless otherwise indicated, adhere to the following speed limits:

- 10 km/hr within 15m of an aircraft;
- 25 km/hr elsewhere on an aircraft parking apron; and
- 40 km/hr elsewhere unless posted otherwise.

Access to the applicable work areas is via public and private thoroughfares. No vehicular access is required airside.

5. ADMINISTRATION

Appointment	Name	Agency	DH Phone	Mobile and/or AH	Radio Call sign
Project Manager (Contractor)					
Works Safety Officer (WSO)					SAFETY ONE
Works Safety Officer (WSO)					SAFETY TWO
Works Safety Officer (WSO)					SAFETY THREE
Works Organiser					
AD Manager					
Project Manager (Principal)					
Project Officer (Complaints/ Contract)					
Project Officer (Operations)					
Project Electrician					

5.1. Co-ordination of Work

The Project Manager for the implementation of this MOWP is:

Nominated Project Manager (Principal) – Roads and Maritime Services Matt Dawson

Nominated Project Manager (Contractor) – Tapp Lautasi, Cleary Bros (Bombo) Pty Ltd

All queries concerning this MOWP shall be directed to the Project Manager.

The Project Manager will brief the WSO on matters relating to the project.

The Project Manager will liaise with the WSO for:

- Initiating and cancelling work related NOTAMS through the NOTAM Office in Sydney. (Tel 02-6268 5063)
- Briefing the Works Organiser and contractors on the safety precautions required during the works.

5.2. Works Safety Officer

The Works Safety Officer (WSO) shall be the duty WSO (*Contact Number*), C/- Shellharbour City Council.

The WSO will use the call-signs “Safety One”, “Safety Two” and “Safety Three” etc during the works.

The WSO will:

- Be in contact at all times while work is in progress. He/she will maintain radio listening watch;
- Ensure that work is carried out in such a manner that no hazard to aircraft operations exists at any time;
- Ensure that the works are conducted in accordance with this MOWP in relation to safe operation of aircraft;
- Be responsible for the correct positioning of equipment as shown on the attached sketches;
- Provide liaison between the Air Traffic Control (ATC) and construction staff; and
- Liaise with the project manager and initiate and cancel NOTAMS as required.

Although all the functions of the WSO are not applicable to this MOWP, the specific functions of WSO are contained within CASA MOS 139 Section 10.12, and are summarised as follows:

- Ensure the Safety of ACFT operations;
- Maintain radio communications on the appropriate frequency operating at the time;
- Ensure NOTAM are in accordance with the MOWP;
- Ensure work requiring NOTAM is not conducted unless NOTAM are in place and adequately cover the extent of the works;
- Provide a draft of any additional NOTAM requirements to Shellharbour City Council;

-
- Provide daily works updates to ATC and Shellharbour City Council through the Contractor to ensure the safety of aircraft operations;
 - Ensure that temporary obstructions and time limited works are undertaken in accordance with MOS 139 and the MOWP;
 - Ensure that vehicles, plant and equipment are properly marked and lit;
 - Ensure that access routes are clearly identified with suitably controlled access;
 - Protect underground power and control cables, especially to navigation aids, by requiring dig permits;
 - Report immediately to the appropriate authority any incident, accident or damage likely to affect ACFT safety;
 - Remain on call (*insert contact number*) between 0700-1530 while work is in progress and the aerodrome is open to ACFT operations. Remain on standby after hours;
 - Ensure that radio call signs are properly assigned to vehicles.
 - Ensure that the movement area is safe for normal aircraft operations following the removal of vehicles, plant equipment and personnel from the works area.
 - With time limited works, ensure that the area is properly restored for ACFT operations, within time frames agreed to by the WSO and ATC, before the time scheduled or notified for an aircraft movement.
 - Ensure that work is carried out in such a way that no hazard to ACFT operations exist at any time.
 - Briefing the Contractor's Project Manager, Works Manager, staff and sub-contractors on the safety precautions outlined within this MOWP to ensure safe and timely progress; and
 - Ensure that floodlighting or any other lighting required for carrying out aerodrome works is shielded so as not to represent a hazard to aircraft operations.

Shellharbour City Council is appointed as the agency responsible for the provision of WSO for the works. Accordingly, regardless of any sub-contractual arrangement for the engagement of the WSO, the WSO is responsible directly to Shellharbour City Council for the maintenance of standards and aircraft safety aspects of the works.

5.3. Variation of Work from MOWP

No variation to this Method of Working Plan shall be made without the approval of Shellharbour City Council.

6. AUTHORITY

All works will be carried out in accordance with this MOWP.

This MOWP is issued in accordance with MOS Part 139 under the authority of the Shellharbour City Council as the Aerodrome Operator.

Matt Youell, Director Council Sustainability

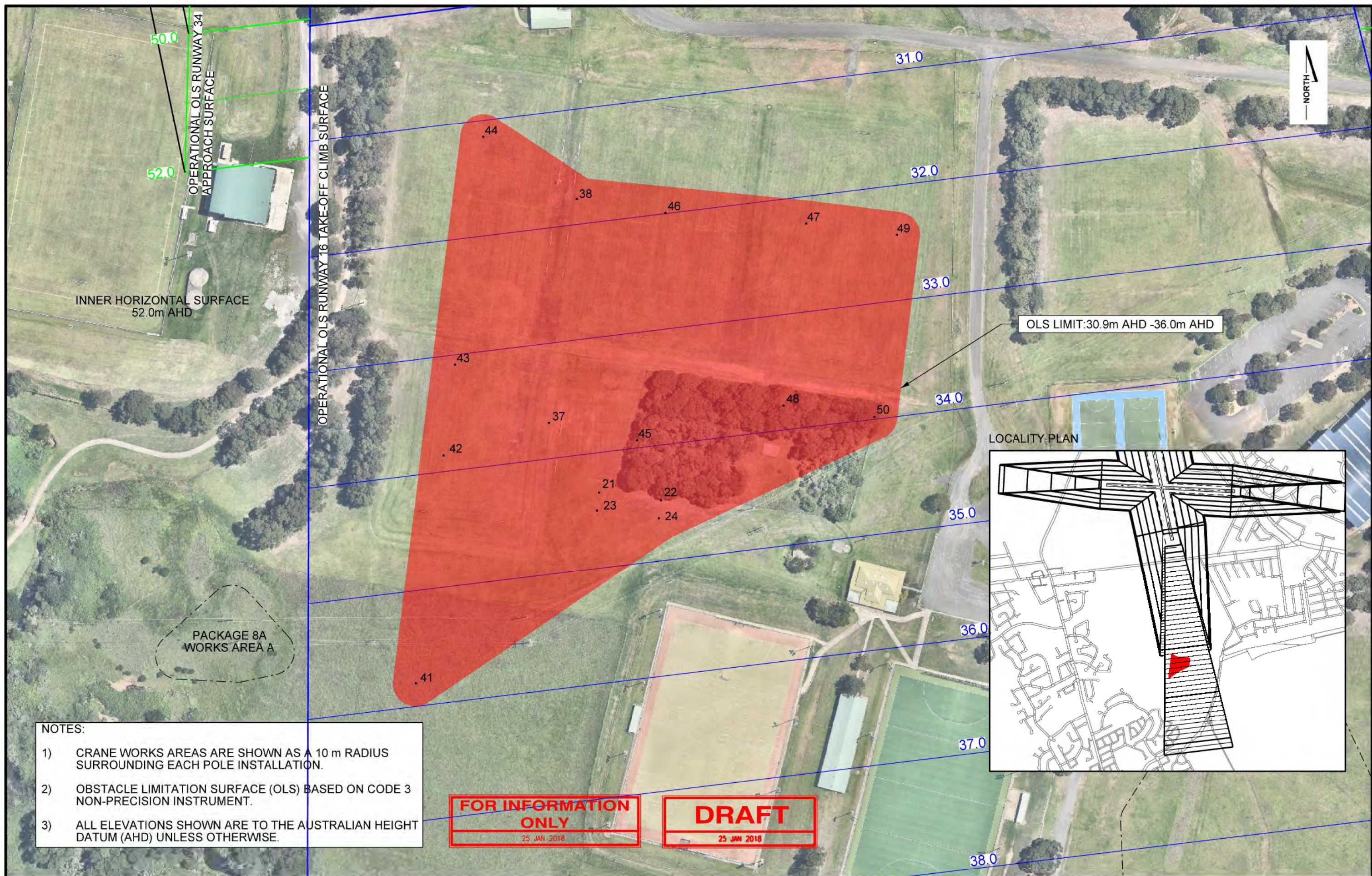
ANNEXES

Annex A – Work Area Plans

DISTRIBUTION

General Manager Aviation
Project Manager (Principal)
Project Manager (Contractor)
Works Safety Officer
CASA Aerodrome Inspector
Air Traffic Control
RFFS



Airservices Australia (Canberra NOTAM Office, nof@airservicesaustralia.com and
Procedures Design Section, pds.procs@airservicesaustralia.com)

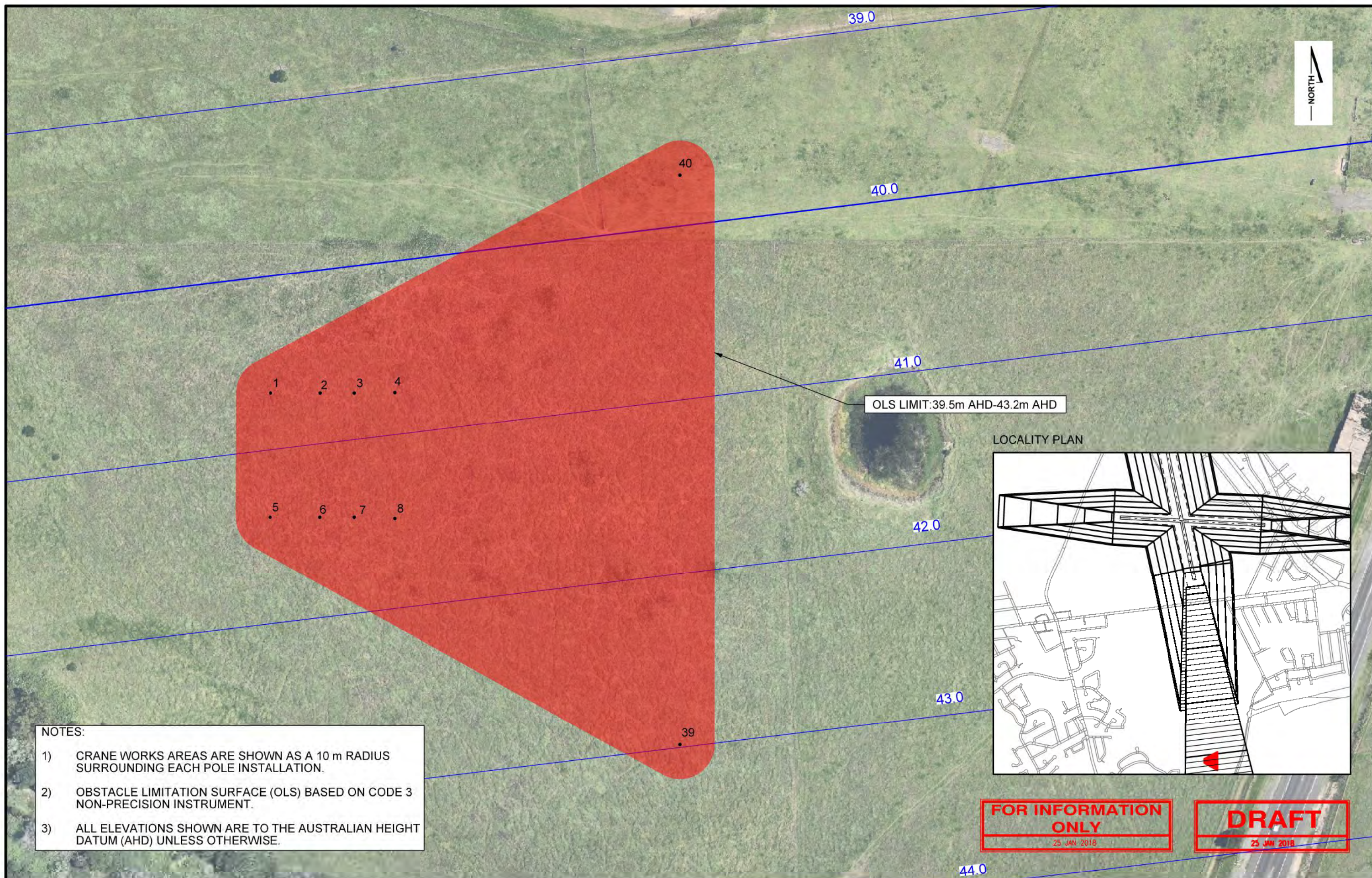


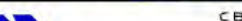

- NOTES:
- 1) CRANE WORKS AREAS ARE SHOWN AS A 10 m RADIUS SURROUNDING EACH POLE INSTALLATION.
 - 2) OBSTACLE LIMITATION SURFACE (OLS) BASED ON CODE 3 NON-PRECISION INSTRUMENT.
 - 3) ALL ELEVATIONS SHOWN ARE TO THE AUSTRALIAN HEIGHT DATUM (AHD) UNLESS OTHERWISE.

FOR INFORMATION ONLY
25 JAN 2018

DRAFT
25 JAN 2018

Project	ALBION PARK RAIL BYPASS Croom Regional Sporting Complex Reconfiguration Works	Client	ROADS AND MARITIME SERVICES		 	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@rah.net.au	Figure No	B17218/08		Scale 1:1500	A3
		Title	CROOME RESERVE - CRANE WORKS AREA C OPERATIONAL OBSTACLE LIMITATION SURFACES					0	25 01 18		
		Drawn EF	Checked NB	Approved XX				Rev	Date		



Project	ALBION PARK RAIL BYPASS Croom Regional Sporting Complex Reconfiguration Works	Client	ROADS AND MARITIME SERVICES	<div><div>REHBEIN</div><div> Airport Consulting</div></div> <div><div> The Association of Consulting Engineers Australia</div><div>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@air.net.au</div></div>			Figure No		B17218/10
			Title		CROOME RESERVE - CRANE WORKS AREA E OPERATIONAL OBSTACLE LIMITATION SURFACES				
					0	25 01 18	Scale 11000		
					Rev	Date	File Ref B17218		



www.rms.nsw.gov.au/apr



1800 708 727



Customer feedback
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March 2018