



AIRPORT AUTHORITY COOK ISLANDS
RAROTONGA INTERNATIONAL AIRPORT

METHOD OF WORKPLAN

PROJECT ID	MOWP-RAR-20-01		
PROJECT NAME	RUNWAY SLAB REPLACEMENT		
NAME OF AERODROME	RAROTONGA INTERNATIONAL AIRPORT		
PROJECT LOCATION	RAROTONGA RUNWAY		
PROJECT DURATION	07-MONTHS	START:	03-DECEMBER-2020
		END:	30-JUNE-2021
PROJECT MANAGER	IANIS BOAZA, MANAGER, PROJECT MANAGEMENT UNIT		
WORKS SAFETY OFFICER(s)	ATS STAFF: 1) Lorreen Savage, 2) Averil Caffery, 3) Bruce Napa, 4) Manu Puna, 5) Georgia Short, 6) Bronson Warwick		
CONTRACTOR(S)	1. CONCRETE SYSTEMS LIMITED 2. TRIAD PACIFIC PETROLEUM LIMITED		
AUTHORITY	This MOWP is authorised by the Chief Executive of the Airport Authority Cook Islands		
APPROVED BY	JOSEPH NGAMATA, CHIEF EXECUTIVE		



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DOCUMENT CONTROL INFORMATION

REV	REVISION DATE	DESCRIPTION	CHANGED BY	POSITION
00	26-Nov-2020	Initial Copy	Akaiti Pura	Acting QSM Mgr



WORKS INFORMATION

1. BACKGROUND

The AACI has identified a need to replace selected runway concrete slabs due to age and heavy traffic loads over the years since its construction in the early 1970s. In that, cracks on some of the pavement slabs been occurring over the years and remedial works of recent have been in place to prevent and or slow down progress of these cracks injecting epoxy into the under slab. Due to the low current traffic situation this is an opportune time to address these cracks.

2. CONTRACTOR(S) INFORMATION

This is a Joint Venture between the following companies:

- 1) Concrete Systems Limited; and
- 2) Triad Pacific Petroleum Limited

3. SCOPE OF WORKS TO BE CARRIED OUT

This work involves replacing identified cracked pavement slabs on the apron, taxiway and runway. There will be four separate work components including: 1) removal of selected existing concrete slabs; 2) preparation and compaction of sub-base; 3) pouring and laying of new concrete; and 4) joint cutting and sealing.

Contractors are required to replace 12 concrete slabs. Refers to Attachment-01: Slab Location Site maps as follows:

- 04 x on the Apron (page-01)
- 06 x 26-Turning Node (page-02)
- 02 x Taxiway Alpha (page-03)

NOTE: Mixing of concrete for pouring will be carried out off-site. This will be carried out in Arorangi.

4. DISPOSAL OF CONCRETE REMOVED FROM RUNWAY

A specified area (refers to Attachment-02) on the northern side of Runway-26 will be used to stockpile concrete pieces/portions coming off the runway. These will be crushed at a later time and repurposed as sub-base material.

5. MOVEMENT AND CONTROL OF EQUIPMENT AND MACHINERY

The following measures will be used to ensure the safe movement of vehicles and machinery whilst airside (refers to Attachment-01)

1. Entry of machinery and equipment will be via Gate Delta, exiting via Gate Kilo
2. Movement or travel will be via the northern runway shoulder which will be marked-off by orange reflectorized safety cones. These cones will be placed adjacent to every 3rd shoulder light. These will be placed by Avsec before and removed after works for the day or night.
3. Alternatively, for works on the Apron, entry will be via Gate Alpha, exiting via Gate Kilo.



6. UTILITY SUPPLY

Water tanks aboard a trailer, will be placed at various points near to but away from the side of the runway. These tanks will have a pump and a sprinkler system attached to them by hose, to keep the new concrete slabs wet for at least 5 days. A square pipe system with hessian cloth will be placed over the slab and will trickle water to keep the hessian cloth damp.

RFS will conduct 3-hourly patrols at night to ensure water levels in the tank are maintained before the Contractor comes in the next morning for top up.

7. FACILITIES AFFECTED:

No aerodromes facilities will be affected by this Project.

8. TIME OF WORKS TO BE CARRIED OUT

Works will be carried out predominantly at night-time, with minimal works carried out a day-time except when work is done at **Section 9 (2)(a) below**. A works schedule will be maintained by the Project Manager in consultation with the Contractor. The most current works schedule will be provided to all Lead Persons involved.

9. PLANNED TIME OF COMMENCEMENT AND DURATION OF PROJECT

1. Airside Project commencement from: **03-December-2020** to **30-June-2021**
2. Duration of each stage and time of completion are as follows:
 - a) On Thursday prior to international flight arrival, all slabs or slab will be cut into 9 smaller sections. This will commence during normal work hours of 8am to 4pm. Duration unknown at this stage.
 - b) On Friday after flight leaves and has gone past point of no-return, removal of the sawn slab sections will commence. (4hrs)
 - c) Compaction of sub-base will commence with the drilling and inserting of dowel bars to follow (5hrs).
 - d) Laying of concrete in the prepared cavity will then commence with the final watering and curing process to be put in place (6hrs)
 - e) Clean-up and a thorough checking of entire work area will then be conducted by contractor and PMU to ensure that this has been conducted to approved standards. (2hrs)
3. The actual date and time of commencement will be advised by a NOTAM.



RESTRICTIONS TO AIRCRAFT AND THE ISSUE OF NOTAM

1. NOTAM action will be put out as a result of the proposed civil works for the RUNWAY SLAB REPLACEMENT PROJECT.
2. Marker Boards and orange cones will be removed for ALL international movements scheduled or non- scheduled. ATS shall monitor operations.
3. Runway length will be fully operational for all international traffic.
4. NOTAM

a) NOTAM for APRON:

- A) NCRG B) C)
- D) MON-SAT 1800-2200 UTC DAILY
- E) Stand ONE unavailable for parking due to slab replacement. This area will be blocked off and marked by orange cones due to contractors. INTL aircraft will be marshalled to Stand TWO

b) NOTAM for TAXIWAY ALPHA

- A) NCRG B) C)
- D) MON-SAT 1800-2200 UTC DAILY
- E) Taxiway Alpha available for taxi but subject to work disruption due to slab replacement. This area will be marked by orange cones to indicate avbl taxi path for DOM acft. INTL aircraft shall land, taxi/backtrack and hold short of taxiway to await to be towed onto the taxiway to the allocated stand.

c) NOTAM for DISPLACED THRESHOLD RWY-26/08

- A) NCRG B) C)
- D) MON-SAT 1800-2200 UTC DAILY

AMEND EFFECTIVE OPR LEN (1:50 GRADIENT)

RWY	TORA(M)	TODA(M)	LDA(M)

5. Works on runway will be carried out in good weather conditions (Visual meteorological conditions). If impending weather conditions on the day are deteriorating such that it is becoming marginal the duty ATCO will give notice to the Works Safety officer that work shall be discontinued and contractors to clear off from site. Full runway length will be restored for landing and departing aircraft.
6. The Works Safety officer will be the liaison officer between the Project Manager and the Control Tower. All clearances & information will be passed through this person. In the event, Works Safety officer has to attend other matters of priority in the course of work requiring him to leave his post, he is to fully brief the next Works Safety officer and advise ATS of this change and confirm that the next Works Safety Officer is fully briefed on the current situation.
7. International and Domestic Aircraft Movements – At present there is only ONE international flight per week on Friday afternoons. Note there may be unforeseen international or military flights that will arrive during these times. The Works Safety officer will keep abreast of all international and domestic aircraft movements daily.



RESTRICTIONS OF WORKS ON THE RUNWAY

1. Currently, there are up to 35 personnel involved in this project including those who have management roles and labour/machine operator roles.
2. Personnel and Equipment will be able to carry out work during domestic traffic movements due to displaced threshold.
3. All personnel and equipment will vacate work site prior to landing and take-off of International aircraft.
4. Where marker boards are placed on the runway to reduce landing length, orange cones will be set back 120m (2 RWY edge lights) from the marker boards.
5. The Works Safety Officer will be on site at ALL times to monitor and will be the liaison officer with Air Traffic Control at ALL times on VHF radio 121.9MHz frequency. Staff mobile phones will be used as a backup means of communication.
6. ACCESS – For workers and machinery access to and from the runway will be via the following points. Refer to "Schedule of Works" appended to this MOWP for details on the expected use of the following access points:
 - Gate Alpha
 - Gate Mike
 - Crash Gate Bravo
 - Crash Gate Echo
7. When work is being carried out within 660m on either side of the runway mid-length point, personnel, machinery and equipment will be required to move on and off the runway by Air Traffic Services. The runway will not be displaced but workers, machinery and equipment will move on when runway is clear and will move off prior to arriving domestic aircraft movements. The Works Safety Officer(s) and ATS will continuously monitor operations during works.

The PROTECTION OF ELECTRICAL SERVICES AND CABLES

1. Aerodrome Electrical Personnel will ensure ALL electrical services are cleared of work site.
2. If any Electrical services are found to be in the work site, they will be marked and identified and electrical staff will be on site while works are in progress.
3. ALL Electrical services will remain operational at ALL times

SPECIAL REQUIREMENTS

OCCUPATIONAL HEALTH AND SAFETY

1. Personal Protective Equipment (PPE) must be worn as required. These are detailed in the Works Safety Officer Instructions at Appendix B herein.
2. A first-aid kit will be available at the work site at all times.
3. Portable toilets will be available.
4. Smoking and break-out areas will be made available as required.

ACCESS CONTROL

1. All works personnel and machinery will be subjected to airport ID card and airside permit requirements. A list of names and vehicles shall be submitted to the Chief Airport Security



Officer for this purpose who will arrange for necessary security/safety passes to be issued and safety/security training to be conducted – prior to commencement of works.

2. Access points will be monitored by airport security officers to ensure authorized and safe entry of works personnel and equipment. Controlled access and egress of vehicles and equipment will be as follows:

ENTRY	EXIT	Control measure
Gate Delta	NO EXIT	Checks and inspection of personnel, machinery and vehicles Gate will be secured by Avsec after use
Gate Kilo	EXIT ONLY	Visual checks of personnel, machinery and vehicle egressing. Gate will be secured by Avsec after use
Gate Alpha	Gate Alpha	Checks and inspection of personnel, machinery and vehicles Gate is manned by RFS 24/7
Gate Mike	Gate Mike	Restricted to Project Management team moving between Concrete Lab and work-site(s). Gate is subjected to inspections during day-time and night-time mobile and foot patrols by both Avsec and RFS.

COMMUNICATIONS AND INFORMATION

1. The Project Manager and Works Safety Officer will ensure that a daily briefing in the morning with the Contractor, Avsec and RFS – is carried out prior to commencement of works operations on the runway. The venue will be at Airport House-04
2. There will be no parking of works equipment, machinery and vehicles when idle or when works is completed at the end of day. The Contractor will be responsible for safe storage of these at their respective facilities. If deemed necessary or if desired – parking will be at the Stock-Pile area.
3. Communication Equipment: For the purposes of communication, the Works Safety Officer or designate will be equipped with a vehicle and radio for two-way communication with Air Traffic Control. Mobile phone will also be a back-up means of communication. Refer to **Appendix C** herein for Communications Chart.
4. When work is complete at the end of the day, the runway portion affected will be inspected for any debris. This inspection will be conducted by the Works Safety Officer or designate.



EMERGENCIES AND ADVERSE WEATHER

1. If impending weather conditions on the day are deteriorating such that it is becoming marginal the duty ATCO will give notice to the Works Safety officer that work may have to be discontinued and workers and machinery to clear off from the runway. Full runway length will be restored for landing and departing aircraft. Weather trend will be monitored and Works Safety Officer shall be updated by the controller.
2. In the event of continued adverse weather conditions (Instrument Meteorological conditions), the Tower will notify the Works Safety officer that work shall cease and be cancelled for the day. Runway will be restored to full length.
3. Aircraft emergencies: In the event of an aircraft emergency, all work will cease immediately and be cancelled for the day. Workers and machinery will move to the allocated area (refer item 4 Special requirements) and be escorted by the Works Safety Officer. In the event of a "local standby", workers and machinery will move off and await for any further instruction from the Works Safety Officer.
4. **Worksite Accidents:** all incidents or accidents resulting in injury to personnel, the Works Safety Officer shall immediately call the Rescue Fire Service who will render assistance and/or notify the hospital and/or Police as applicable.

ADMINISTRATION

TITLE	NAME	DESIGNATION	PHONE	EMAIL
Project Manager	Ianis Boaza	Manager, Project Management Unit	54-767	ianisboaza@airport.gov.ck
Works Safety Officer-01	Manu Puna	Air Traffic Controller	53-352	mpuna@airport.gov.ck
Works Safety Officer-02	Bruce Napa	Air Traffic Controller	79-577	bnapa@airport.gov.ck
Works Safety Officer-03	Georgia Short	ATS Assistant	80-359	jeorgias@hotmail.com
Works Safety Officer-04	Bronson Warwick	ATS Assistant	81-144	bronsonpaku@gmail.com
Works Safety Officer-05	Averil Caffery	Supervisor, ATS	52-719	acaffery@airport.gov.ck
Works Safety Officer-06	Lorreen Savage	Manager, ATS	71-439	savage@airport.gov.ck



AUTHORITY

All works will be carried out in accordance with the Method of Work Plan.



Joseph Ngamata
Chief Executive

26-November-2020

date



Ianis Bocza
Project Manager

26-November-2020

date



APPENDICES

APPENDIX-A: DISTRIBUTION LIST

APPENDIX-B: WORKS SAFETY OFFICER INSTRUCTIONS

APPENDIX-C: COMMUNICATIONS CHART

APPENDIX-D: GLOSSARY OF TERMS AND ABBREVIATIONS



APPENDIX A: DISTRIBUTION LIST

This MOWP is distributed to the following persons:

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Chris Vaile Director	Triad Pacific Petroleum Limited	57-910 petrol@triad.co.ck
Joseph Ngamata Chief Executive	AACI	55-890 jngamata@airport.gov.ck
Tony Wearing Director of Operations	AACI	55-466 twearing@airport.gov.ck
Lorreen Savage Manager Air Traffic Services	AACI	71-439 savage@airport.gov.ck
George Nicholls Manager, Rescue Fire Service	AACI	54-330 gnicholls@airport.gov.ck
Oscarlina Story-Tapoki Chief Airport Security Officer	AACI	54-309 otapoki@airport.gov.ck
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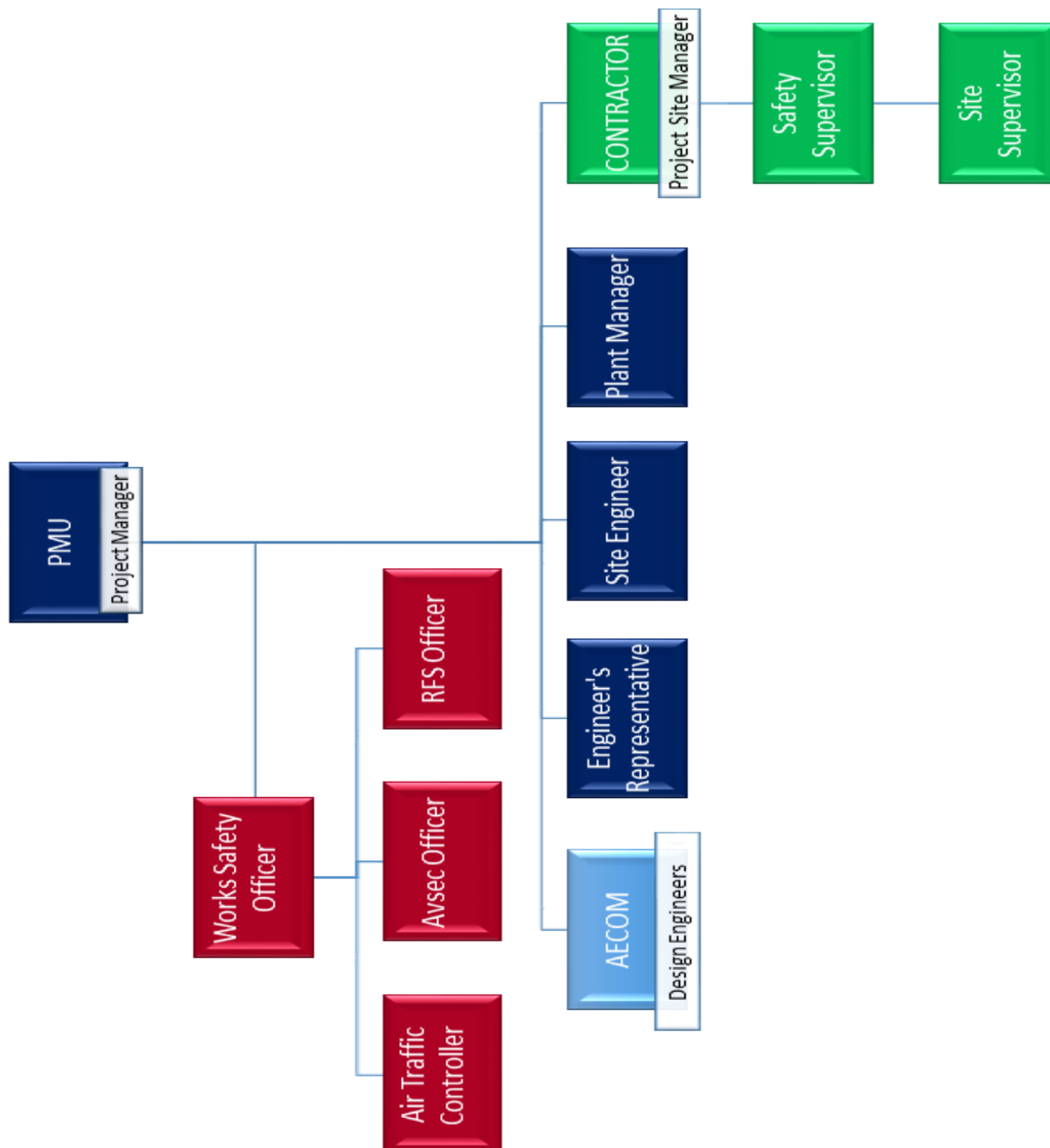


APPENDIX B: WORKS SAFETY OFFICER INSTRUCTION

1. Ensure all works personnel and all other personnel involved in the works undergo security and safety briefing to be conducted by the Airport Security Service – prior to the initial commencement of works;
2. Ensure personal protective equipment (PPE) are worn by works personnel and all other personnel involved. These include, but not limited to: hard-hats, safety work boots, hi-viz vests, safety gloves, ear-muff and safety glasses/goggles
3. Ensure the safety of aircraft operations in accordance with the standards for aerodrome works and the applicable MOWP;
4. Ensure that sufficient information is on hand with regards to aircraft movement during the period of works. However, the Works Safety Officer shall confirm movements and schedules on a daily basis with Air Traffic Services officer, as these could change;
5. Ensure that, where applicable, the aerodrome works are notified by issue of a NOTAM and that the text of each NOTAM is exactly as set out in the applicable MOWP and in accordance with the nature of the works;
6. Supply the air-traffic controller, on a daily basis, with whatever information is necessary to ensure the safety of aircraft operations;
7. Discuss with the workers, on a daily basis, any matters necessary to ensure the safety of aircraft operations;
8. Ensure that unserviceable portions of the movement area, temporary obstructions, and the limits of the works area are correctly marked and lit in accordance with this MOWP;
9. Ensure that the vehicles, plant and equipment carrying out aerodrome works are properly marked and are under works safety officer supervision or within properly marked and lit works area;
10. Ensure that all other requirements of the directions and MOWP relating to vehicles, plant, equipment and materials are complied with;
11. Ensure that access routes to work areas are in accordance with this MOWP and clearly identified and that access is restricted to these routes;
12. Report immediately to Air Traffic Services and the responsible manager of the Airport Authority Cook Islands any incident, or damage to facilities, likely to affect air-traffic control services or the safety of aircraft;
13. Remain on duty at the works area while work is in progress and the aerodrome is open to aircraft operations;
14. Ensure that Air Traffic Services is kept informed of the radio call signs of the vehicles used by the works safety officer;
15. Require the immediate removal of vehicles, plant and personnel from the movement area where necessary to ensure the safety of aircraft operations;
16. Ensure that the movement area is safe for normal aircraft operations following removal of vehicles, plant, equipment, tools and personnel from the works area. This will be ensured by conducting an inspection of worksite before vacating or leaving area.



APPENDIX C: COMMUNICATIONS CHART



APPENDIX D: GLOSSARY OF ABBREVIATIONS AND TERMS

ABBREVIATIONS	DESCRIPTION
ABBREVIATIONS	
AACI	Airport Authority Cook Islands, a Part 139 Certificate Holder
ATS	Air Traffic Service, a section of the AACI
ATCO	Air Traffic Control Officer
Avsec	Airport Security Service, a section of the AACI primarily responsible for maintaining aviation security and safety standards at the airport.
LDA	Landing Distance Available
MWOP	Method of Work Plan
NOTAM	"NOTice to AirMen". A notice containing information to alert aircraft pilots of potential hazards; establishment, condition or change in aeronautical facility (e.g. runway) service or procedure
PMU	Project Management Unit, a section of the Airport Authority Cook Islands. This section includes the Project Manager, Engineer's Representative, Site Engineer, Plant Manager.
RFS	Rescue Fire Service, a section of the AACI responsible for maintaining safety and security of the airport.
RWY	Runway – a part of the aerodrome used for the landing and taking off of
RWY-26	Eastern-end of the runway
TODA	Take Off Distance Available – The take-off run available plus the length of any remaining runway or clearway beyond the far end of the take-off run available
TORA	Take Off Roll Available – the runway length declared available and suitable for the ground run of an aircraft taking off
VHF	Very High Frequency



TERMS	
Air Traffic Control Officer	A member of ATS – responsible for maintaining the safe, orderly and expeditious flow of air traffic and movement of ground vehicles operating within the manoeuvring area
Avsec Officer	Airport Security Officer - the person appointed by Principal to ensure that the conduct of the works on the aerodrome, insofar as it affects the security of the aerodrome, is in accordance with the requirements of the Civil Aviation Act and Regulations, the Civil Aviation Rules, this Method of Work Plan and otherwise to maintain the security of aircraft operations, the passengers and the Public in relation to such Site
Contractor	Joint Venture between Concrete Systems Limited and Triad Pacific Petroleum Limited
Control Tower	Tall building/facility at an airport from which the movement of air traffic are controlled
Egress	The action of going out or leaving an area or place
Lead Persons	Managers from PMU, ATS, Avsec, RFS and the Works Safety Officer
Local Standby	Aircraft is suspected to have developed some defect but not to the extent of being able to carry out a safe landing
Manoeuvring Area	The part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons
Marker Boards	These indicate the displaced runway threshold and are normally yellow in colour.
Method of Work Plan	A document issued by AACI, being a Part 139 Certificate Holder – setting out specific detailed provisions for the conduct of work
RFS Officer	Rescue Fire Service Officer – a member of the Rescue Fire Service.
VHF radio frequency 121.9Mhz frequency	Two-way radio system used between ATS and those operating or moving about on the manoeuvring area. This will be frequency used for coordination purposes between the Project Manager and Works Safety Officer.
Works Schedule	Planned hours of work over a period of time which includes dates and times and number of hours of work.
Works Safety Officer	An ATS staff scheduled to work during the “project hours”. His/her role is to coordinate and facilitate the safety, works site access and communications requirements of the works being carried out. Further, this role includes the inspection of the work site, runway and other areas affected by activities related to the works.