

## COMMISSIONERS BRIEFING PAPER

**SUBJECT: ACADEMY WEAPONS TRAINING INFRASTRUCTURE**

### BACKGROUND

- This brief provides an update on the BOUW Range Consultants (“BOUW”) inspection and safety audit of the Academy Weapons Training facility, the issues identified in the report, alternative interim training solutions, and potential options available to be further investigated, planned and costed to facilitate the reinstatement of Academy Weapons Training Range operations.

### BACKGROUND

- The Academy Weapons Training Range was designed and constructed by SACON (formerly SA’s Public Buildings Department - “PBD”) in 1993 and is SAPOL’s only multi-lane, indoor range. It is an indoor 25m, 10 lane, linear firing only range, and is used primarily for delivery of Cadet, Police Security Officer and Operational Readiness Qualification (ORQ) training.
  - SRS and STAR members also utilise the range after hours for training, testing and sighting activities.
- The safety baffles, back-stop and bullet trap were engineered solutions in 1993 for which no design documentation exists, making certification of these components and their capabilities impossible.
- Since installation, the volume, type and calibre of ammunition used on the range has changed significantly. These changes, coupled with the increased utilisation of the range in 2023 have resulted in accelerated wear and tear to the range infrastructure. It is estimated that approximately 700,000 rounds are fired per year within this indoor range facility.
- On 10 October 2023, damage at the rear of the Weapons Training Range (“the range”) was identified by PASB. Physical inspection revealed bullet damage to infrastructure as a result of projectiles leaving the range proper and exiting down range into the Extraction Maintenance Room.
  - Range operations were immediately suspended pending investigations by PASB and Firearms Branch. The cause was identified as a detached deflector plate inside the bullet trap and reinstatement works were completed on Wednesday 11 October 2023.
  - Firearms Branch inspected the repairs to the bullet trap and deflector plates confirming the range systems had been returned to their previous standard. The Firearms Branch Range Inspection Report is attached (**Attachment A**) and includes inspection details, and the recommendation to resume shooting operations.
  - PASB had a weapons range safety consultant already engaged to inspect Echunga Training Reserve and on Thursday 12 October 2023 arranged for an urgent visit Monday 16 October to also inspect the Academy range.
    - Despite the repairs, OC Academy & Learning subsequently spoke with Firearms Branch and Physical Assets representatives and viewed the damage to the plant room of the range (not normally accessible by A&L staff). OC A&L advised the Executive Director, PCW she was not comfortable for training to recommence, concerns remaining as to the safety of the range for trainees and instructors, and requested a range inspection by a consultant be brought forward prior to any training recommencing.

- PASB engaged BOUW consultants to complete a safety audit and inspection on 16 October 2023 to confirm the range's safety standards status and provide a review and any recommendations for works to meet current standards for safety.
  - BOUW are an independent Queensland based consultant whose team has worked on over 100 shooting ranges internationally, and recently have been subject matter experts for a number of State Police Services, ADF and NSW Department of Corrections during the design, build and maintenance of their training facilities.
- Following the inspection and assessment of the facility, BOUW have provided their considered advice that:
 

*'the range is currently in a ballistically unsafe condition as clearly evidenced by recent ballistic failures and modification works that are not in accordance with international standard JSP403 for indoor ranges.*

*BOUW's recommendation is that the range is immediately closed to live fire usage until the serious safety matters have been identified and addressed.'*
- Academy & Learning, PCW (A&L) have ceased use of the Academy Weapons Training Range at this time, and diverted weapons training activities including static shooting from 5m firing line only to Echunga.
- BOUW advised:
  - it would be appropriate at Echunga to undertake Static shooting only from 5m firing line (no movement or alternative firing lines) – but that targets may be moved between shooting serials;
  - Minor earthworks should be undertaken to reshape the bullet catcher to a more vertical position – PASB completed on 17 October 2023;
  - Use of non-ricochet induced targets and target stands;
  - To ensure documented range safety procedures
  - To plan for medium term works to provide greater utility of the range;
  - To undertake further works to baffles to extend greater than 5m distance – PASB has a current project to finalise 100m range baffles. Further work on additional baffles will be investigated and costed.
- An alternative temporary site, "Adelaide Pistol & Shooting Club" in Mallala has been identified and is available for immediate SAPOL use. This site is currently used by Border Force.
  - PASB and Academy have attended this facility and are in discussion with the operators to determine useable areas of the facility.
  - PASB are finalising the scope of hire which is indicatively agreed as 2 lanes (11 metres wide each) without individual gun boots (effectively two open ranges) under a Hire Agreement which could run potentially for 12 months – separate advice will be provided once an agreement is confirmed with the owner.
  - SAPOL can use the two ranges exclusively along with Border Force who use the lanes 8 times a year.
    - Each lane/range is 25 metres long with a bullnose veranda protecting the shooter with the remainder of the lane being outdoors, with separate entrance to keep SAPOL cadets away from the general shooting public.

- Each lane is capable of conducting 4 metres 10 metres and 25 metres shooting at static targets.
  - The facility would require SAPOL works to install shooting stalls/booths. PASB are currently reviewing supplier availability, pricing and procurement paths. Funding will be required (costs to be advised) for:
    - Shooting Stall/booths – in investigation currently
    - Installation of ballistic protection on one range to provide additional safety and reduce trainer / trainee ratios
    - Purchase of container to enable on site, long term secure storage of equipment
    - Purchase of 2 x fridges, 2 x microwaves for use by SAPOL employees
    - Hire Contract agreement (PASB) to utilise APSC and Southern Vales shooting range
    - PASB Fleet to source a bus to enable transportation of recruits / PSO's to the site from the Academy
- PASB have also identified a NSW based modular weapons range supplier that has an available 40ft modular self-contained firing range, 2 lane, 7-10m compliant with international standard JSP403 used by defence/other police jurisdictions in Australia. A second 2 lane 7-10m range is due for completion end of November 2023.
  - Lease options are available at approximately \$225k for 6 month periods. Lease to own / own options are also available and will be provided shortly. Other minor works may also be needed to commission at Academy, subject to further review.
  - Subject to procurement processes, this potentially provides an immediate option to secure 4 lanes of firing ranges to be placed at Academy to support training activities.
  - There are no suppliers of this nature in South Australia. Two other suppliers in Australia have been identified but none others with availability currently.

## RELEVANT POINTS

- On October 16, 2023 BOUW undertook an inspection and safety assessment of the firing range infrastructure including ballistic baffles and backstop/bullet trap infrastructure and their alignment with relevant standards and an assessment of the range's safety and compliance. See (**Attachment B**): BOUW Report.
- BOUW's inspection found the range to be in a ballistically unsafe condition as clearly evidenced by recent ballistic failures. The following summary of the serious safety concerns were identified using international standard JSP 403 as a reference:
  - Defence zone - failed deflector plate caused potential structural integrity risk to the building concrete with multiple rounds penetrating the Defence zone.
  - Back-plate - There is no evidence of a back-plate in the range that is ballistic rated steel (e.g.AR500) allowing catastrophic damage on bullet trap side walls and behind the bullet trap.
  - Bullet Trap - The bullet trap has exceeded its service life and is no longer serviceable for high rate of firing.
  - Bullet Catcher suffered a catastrophic failure when the deflector plate collapsed due, most likely from reaching end of service life (industry standard service life is typically 10-15 years. The trap as installed has been in service for 30 years).
  - Side walls of the bullet trap have suffered catastrophic failure resulting in penetration and damage to concrete structural wall.

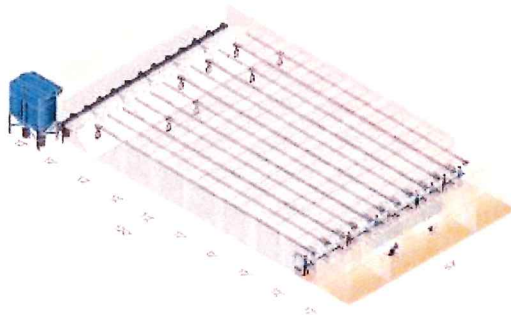
- Mechanical Services (ductwork) have been partly destroyed by projectile impact.
- Mechanical exhaust system is not fitted with appropriate (i.e. HEPA) filters resulting in increased risk of airborne toxic lead particles exiting the facility and entering the outside environment.
- Acoustic foam installed to ceiling and walls in the range has high potential to retain hazardous lead and/or unburnt propellant particles, high fire/ health risk.
- Electrical conduits and cables found damaged behind bullet trap and above baffles.
- BOUW also advised deficiencies in Lead Management plans, requiring a body of work to be undertaken in this respect. A lead management plan will need to be established in consultation with Health, Safety and Wellbeing.
- PASB is undertaking facility testing, investigations and maintenance activities:
  - Comprehensive lead testing on both internal and external range surfaces was undertaken on 24 October 2023, noting PASB and Manager WHS Preventions were onsite.
  - A Structural Engineer is scheduled to attend Academy on 1 November 2023 with Ventia/PASB to review, assess, remediate and certify the structural integrity of the damaged pre-cast wall.
  - A Mechanical Services Consultant will review the extraction system, and assess performance against IS JSP403. If it is determined to retrofit the existing range then further advice will be sought regarding design and specifications for the installation of an extraction system to meet JSP403.
  - On 26 October 2023 the bullet catcher was dismantled for full lead decontamination/ removal, including deep clean of the Bullet Catcher, Bullet Trap and extraction room. Note the Range proper (operational area) surfaces are cleaned daily when in use by Zippy, the contracted cleaner.
  - Preliminary verbal advice from Ventia is that there does not appear to be structural damage to the integrity of the building however the engineer's report will confirm.

## **FUTURE INFRASTRUCTURE OPTIONS (SUBJECT TO FURTHER WORK)**

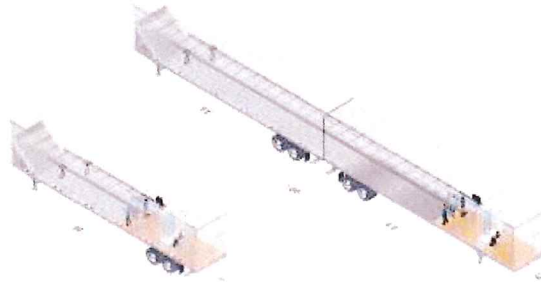
- Several Infrastructure replacement options are under consideration, noting scope definition will need to be undertaken in partnership with A&L, with costings to follow.
- PASB note that the current Academy Weapons Training Range is at capacity and cannot adequately service current training requirements which poses a serious risk to operational policing objectives. Strategic infrastructure considerations for addressing this risk to operations are also included below, for expansion facilities at Academy.
- It is recommended that specialist advice and consultation is undertaken to ascertain what a contemporary range should comprise of with a view to the next 20 years to ensure that what is delivered is future proofed to the maximum extent possible.
- PASB note that some current market products for modular self contained firing ranges also integrate virtual training with live fire capability within their modular firing range solutions. These and other contemporary range options will be assessed in close conjunction with A&L in the next immediate phase of strategic assessment of available options, with a further brief to follow to recommend strategic options to progress.
  - Weapons range infrastructure generally has a 10-15 year lifecycle as advised by BOUW.

- Buildings generally have a 50 year lifecycle before significant deterioration occurs – the current building has an estimated 20 years of lifecycle remaining from a general use perspective. BOUW raised concerns in the report that the structural integrity of the building should be assessed. Ventia have since visited the site on 26/10/23 with the structural engineer who has verbally indicated unlikely to be any structural damage to the integrity of the building – formal report to follow within an estimated 2 weeks.
- For all of the below options, SAPOL review to occur for all management plans, Range Standing Orders, maintenance program, range use, management procedures and governance documentation as detailed in the attached BOUW report.
  - Option 1: Reinstatement of existing Academy weapons training range infrastructure
    - PASB undertake building structural repairs including damaged concrete.
    - Range Infrastructure Remediation project required to identify scope and design requirements of the weapons training infrastructure solution, procure and deliver a full range upgrade to comply with JSP403 including Range Defence zone, back-plates and extraction system, new back-stop, bullet trap, range baffles and acoustic treatments and new target retrieval system (RTS). Commission and recertify range as safe for use.
      - On 26 October 2023 BOUW provided PASB a further quote to return for a second inspection on 1 November 2023 to assess redevelopment works and costings more fully, and included consultancy costs as Range Planner for two phases of advice: Planning phase and Delivery phase (**Attachment 4**).
        - Planning phase - \$85,592 plus GST
        - Delivery Phase - \$35,793 plus GST
      - PASB are currently reviewing the details of this quote further, and will investigate other consultancy advisors of this nature for procurement purposes. The BOUW quote indicates resourcing should comprise a Project Manager (SAPOL), Design Manager (SAPOL/consultant), Range Planner (BOUW) and other architectural /consultants.
      - No order of cost for the actual works has been provided yet to understand budget impact for remediation works.
    - This path requires further review.
    - This option does not accommodate an expansion of the existing range capacity, or address proximity to the new residents in the adjoining development from June 2024.
  - Option 2: New Academy weapons range facility construction
    - Construct new range facility at an alternative site at the Academy, such as on the current rear, grassed car park location. A multi-storey build combining the range and car park may be an option, alternatively underground options can be considered subject to cost impacts and engineering advice. This will ease current significant weapons training pressures and allow for future growth, and decommission the existing 30 year old weapons training building.

- Note relocating the range to another part of the site will resolve concerns regarding noise from weapons discharge in the current facility in relation to new housing construction within metres of the firing range. Residents are expected to commence onsite in the adjacent development mid 2024.
- The existing range can be repurposed for additional/alternate training purposes.
- Option 3: Modular pre-fabricated range facility at Academy.
  - Multiple suppliers are currently being investigated, noting one NSW supplier has a 40ft container 2 lane modular firing range in stock at Albury, and another 2 lane 40ft modular unit ready end of November 2023.
  - Other Modular ranges from 2-3 20m lanes up to 14 lanes / 100m are available from the United States of America (USA) – these are pre-fabricated with self-contained air filtering infrastructure, bullet trap facilities and acoustic fitout, built to current standard.
  - These will need to be reviewed by A&L to determine whether there is sufficient line of sight for instructors prior to progressing.



- The Barracks relocation project is incorporating a 20m, 2 lane modular self-contained firing range, at a cost of approximately \$1.6m, to facilitate Armoury operations. This is a Modular live-fire range delivered in full compliance with industry standards and the UFC specification (adopted range specification for US Defence – considered the highest-level specification).
- These solutions are worth considering for Academy with potential to assist in easing current training pressures, and any future increases in sworn numbers. PASB are currently investigating lead times, lifecycle and costings to inform considerations.
- This solution can work in combination with Options 1 and 2 to provide an earlier leadtime and then expansion capacity once construction on permanent building facilities are completed.
  - Mobile 3 lane solutions are available which can be used initially at Academy while the current range is closed, and then once works for the Academy Weapons Training Range are completed, be sent off to support regional training requirements. Solutions up to 10 lanes would be required to service the training need, which could be a combination of static and mobile modular units.



- These Modular Firing Ranges comprise:
  - Armoured floor, ceilings, and walls with ballistic armour
  - Complete acoustic treatment throughout the range
  - Anti-ricochet lining system from 20m to 3m
  - Integrated lighting package
  - Plug and play electrical package (only electrical services required access to single and three phase power on site for connection)
  - Compliant for FMJ large calibre rifle use (5.56mm and 7.62mm) and up to 0.50 CAL if bench mounted.
  - Action Target Steel Decelerator Bullet Trap (SDBT) with 1.2inch ballistic plates
  - In operation with Queensland, Victoria, and NSW Police Standalone lead/heavy metal projectile waste collection system for simple retrieval and recycling.
  - Standalone Dust Collection System for bullet trap exhaust of hazardous dust and airborne particulates - 99.97% HEPA filtration system to outside air
  - Design and integration (with project team input), manufacture, preliminaries, project management, logistics, local delivery, set down and commissioning of the range is included.
- Timelines are under further investigation.
- Resourcing considerations: the work to develop and deliver this project requires support of an ASO7 Senior Project Manager within PASB, which cannot be absorbed in existing resources. PC&W can provide advice as required from range instructors to input into the process.
- Your approval is sought to the creation of a 12-24 month ASO7/ASO8 Senior Project Manager position in PASB to undertake strategic consultation / scope definition activities for a future proofed weapons training solution at Academy, followed by project management activities for Academy Weapons Training infrastructure replacement and salary budget provision of up to \$425k (\$137k in 2023/24, \$196k in 2024/25 and \$98k in 2025/26 subject to program timeline).
- This resource will develop the project scope in consultation with Academy & Learning and consultant advisors, concept/cost estimates, funding business case and approvals, procurement and project delivery activities. Note this also includes allowance for initial agency staff costs, IT, travel and administrative overheads.
- The resource would work also to support the Echunga Training Reserve Masterplan review / consultation and development of that Infrastructure Business Case to ensure synergy particularly between the two live fire training facilities, and SAPOL's future strategic planning objectives.

## **ATTACHMENTS**

- Attachment A: Firearms Branch report 10/10/2023
- Attachment B: BOUW Consultants Academy Range inspection
- Attachment C: Sample – Zeroed Modular Range Facilities
- Attachment D: BOUW Consultants Range Remediation

## **RECOMMENDATIONS**

It is recommended that you:

- Note the attached consultant report from BOUW regarding safety recommendations to close the Academy Weapons Training range due to deterioration pending consideration of project works;
- Note that PC&W has provided separate advice regarding range closure impacts.
- Approve for A&L to utilise suitable alternative Weapons Training sites and redirection of Commissioner's Reserve as required once hire costs are finalised with the range(s) to support commercial facility rental until infrastructure solutions are completed, commissioned and certified safe at Academy;
- Approve for PASB to investigate immediately available modular firing range solutions to supplement training requirements with the intent to procure on a leased or owned model subject to due diligence;
- Consider the options for future infrastructure solutions outlined within subject to longer term strategic considerations, note that PASB will undertake further options development and indicative costings;
- Approve redirection from Commissioner's Reserve for provision of Project Management salary funding to PASB of up to \$425k (\$137k in 2023/24, \$196k in 2024/25 and \$98k in 2025/26 subject to program timeline) and approve to create a new position of 24 month ASO7 Senior Project Manager role in PASB for unavoidable and critical infrastructure replacement activities for Academy Weapons Training Range;
- Note that PASB will work in close collaboration with A&L at Academy to define the future requirements, and continue to utilise experienced firing range consultants to design, cost, develop and document the agreed redevelopment works package to meet SAPOL's operational objectives;



- Note: Failure to undertake timely works will have an ongoing risk impact to the following SAPOL operational activities:
  - Disruption to pistol course training (in 2023: 220 cadets and 68 PSOs)
  - Disruption to ORQ training

**PCO: 2023/2956**

Endorsed:



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 Karen Kochergen  
**Director, Infrastructure & Assets**  
 27 / 10 / 2023

Recommended/Not Recommended:



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 Stephen Johninke  
**ED Business Service**  
 27 / 10 / 2023

Recommended/Not Recommended:

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 Stephen Howard  
 Chief Superintendent  
 People, Culture and Wellbeing  
 Coordination.

Kim Sherie-Summers  
**ED People, Culture & Wellbeing**  
 27 / 10 / 2023

Recommended/Not Recommended:



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 Linda Williams  
**Deputy Commissioner of Police**  
 30 / 10 / 2023

Approved/Not Approved:



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 Grant Stevens  
**Commissioner of Police**  
 31 / 10 / 2023

