

**Science Advisory Council
to the
Environmental Management Commission
Building 1805, West Outer Road
September 30, 2025
6:00 p.m.
Meeting Minutes**

SAC Members:

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EMC Staff:

Leonard Pinaud	<u>Organization:</u> EMC	<u>Telephone:</u> 617-694-2644	<u>E-Mail:</u> Leonard.pinaud@mass.gov
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Attendees:

Alex McDonough	<u>Organization:</u> MA ARNG	<u>Telephone:</u> 774-286-1373	<u>E-Mail:</u> Alexander.v.mcdonough.mil@army.mil
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Rosemary Carey		201-841-5171	rosemary@copyrose.com

Handouts Distributed at Meeting:

1. Science Advisory Council Draft Meeting Minutes, September 19, 2024
2. Science Advisory Council Draft Meeting Minutes, May 1, 2025
3. Environmental Management Commission Environmental Officer Update, September 2025
4. Camp Edwards Update, 30 September 2025
5. Camp Edwards Natural Resources Update Fall 2025
6. Camp Edwards Approved Munitions List (AML), 30 September 2025
7. Environmental Performance Standards Revisions, September 2025
8. Operations, Maintenance and Monitoring Plan Revisions, September 2025

Agenda Item #1: Welcome and Agenda – Mr. Paul Cavanagh, SAC Chair

Science Advisory Council (SAC) Chair Paul Cavanagh welcomed everyone to the SAC meeting and introduced two new SAC members: Ms. Lombard and Mr. Faherty.

Agenda Item #2: Review of SAC Minutes and Approval - Mr. Paul Cavanagh, SAC Chair/SAC Members

- September 19, 2024 draft minutes: Mr. Gschwend asked that on page 3 the word “recommendations” be removed. Mr. Cavanagh made a motion to accept the meeting minutes as

amended, and Mr. LeBlanc seconded the motion. Mr. Faherty, Ms. Lombard, and Mr. Cavanagh abstained. All others were in favor.

- May 1, 2025 draft minutes: The draft meeting minutes provided at today's meeting reflect adjustments made by Mr. Pinaud after the initial version was circulated to SAC members; the draft minutes will be considered at the next SAC meeting after members have been able to review those adjustments.

Agenda Item #3: Environmental Officer Update – *Mr. Leonard Pinaud, EMC Environmental Officer*

Mr. Pinaud provided an update:

- Two new members were appointed to the SAC; there are three vacancies left to fill. The Community Advisory Council (CAC) has six new members, with two positions still open: one for a Joint Base Cape Cod (JBCC) family member and one at-large seat. Efforts are ongoing to fill the remaining vacancies. An orientation for the new SAC and CAC members was held on September 18, which included a tour of Camp Edwards and a presentation on the Open Meeting Law
- Mr. Pinaud is working with Camp Edwards to reduce the number of exceptions to policy by modifying the Operations, Maintenance and Monitoring Plans, the Approved Munitions List, and the Environmental Performance Standards (EPSs).
- Camp Edwards final public tour of the season will be held on October 17.

Agenda Item #4: Camp Edwards Update – *Mr. Alex McDonough, Base Operations Manager*

Mr. McDonough provided a Camp Edwards update.

- Mr. McDonough announced he is now the Base Operations Manager on the full-time side and Deputy Commander on the military (M-day) side. This follows COL Matthew Porter's transition to the role of JBCC Executive Director, replacing Brig. Gen (ret) Chris Faux. Due to a hiring freeze, the Deputy Base Operations Manager and Director of Facility Engineers positions are currently vacant, with Mr. McDonough covering these duties.
- The public Camp Edwards tour program has been popular and is at capacity. He noted seats are always reserved for SAC and CAC members.
- Camp Edwards is working to establish a Memorandum of Agreement (MOA) with the Mashpee Wampanoag tribe. Initial discussions include their potential participation in the First Responder/Military controlled hunt day on December 5.
- \$1 million in federal funding has been secured for a comprehensive National Academy of Science (NAS) consensus study on small arms ranges at Camp Edwards, focusing on contaminant fate and transport, migration, and monitoring efforts. A key deliverable will be a consolidated executive summary and an updated conceptual site model. The study is expected to take 16-19 months. The process will be inclusive, with opportunities for input from the SAC, CAC, and EMC. The goal is to produce a report that is understandable to both technical experts and the general public.
- Vadose Zone Study: A new study will be initiated to collect water samples from the vadose zone (the area between the ground surface and the water table) to address a long-standing data gap. This study will not include PFAS analysis, as PFAS is handled by a different program.
- Camp Edwards continues to support mobilization and demobilization efforts; supporting three units mobilizing, including the 26th Maneuver Enhancement Brigade to Africa.
- Major Events: Camp Edwards hosted several major events, including “Regional Cooperation 2025” (a tabletop exercise with international partners), the Garrison Commanders Leadership Course, and an Air Assault course.

- An electrical upgrade is in the design phase for Sierra Range so new, standardized Army target lifters can be installed. The underground wiring will be updated; there is no change to the range's footprint or use.
- The new Range Operations Control Area (ROCA) buildings are complete.
- Range sampling is scheduled to begin shortly.

Agenda Item #5: Natural Resources Update – *Mr. Jake McCumber, Natural Resources and Training Lands Manager*

Mr. McCumber gave presentation on Natural Resources a Camp Edwards.

- Flora Projects: a paper on *Triosteum* genetics was recently published; the genome was mapped for *perfoliatum* and *aurantiacum* and confirmed the state endangered plant is found on Camp Edwards. Vegetation surveys were conducted throughout the base. Algonquin/Enbridge consultants were out twice during the summer completing surveys for the project, surveying habitat conditions for wildlife around the project.
- Fauna: The program completed bat acoustic surveys, box turtle monitoring and bird surveys along with periodical cicada surveys. The program hosted bird tours, a butterfly walk and lead a barrens management walk at Crane Wildlife. The fall hunt season has begun; the youth deer hunt was held recently with 15 hunters taking four deer.
- Prescribed fire: during the spring, three burns were conducted in the grasslands totaling 108.5 acres and seven burns were conducted in the Pine Barrens totaling 702.5 acres. There are no fall burns planned. The Integrated Wildland Fire Management Plan is in finalization. Extensive fire trainings include aviation, ignitions, introduction to wildland fire, Incident Commander 3 & Task Force Leader, and national level instruction in Florida and Oregon.
- Restoration and training lands: the Battle Position (BP) 14/16 Landing Zone expansion is mostly complete with seeding to be conducted this fall; BP 1 is in a rest/recovery year.
- iNaturalist: An on-line project where observations of flora and fauna on JBCC can be uploaded to the website; more than 2,000 species have been identified and many photos have been uploaded. The website is publicly available: <https://www.inaturalist.org/projects/fauna-and-flora-of-jbcc>

Agenda Item #6: Proposed Approved Munitions List Revisions – *Mr. Alex McDonough, Base Operations Manager, and Mr. Leonard Pinaud, EMC Environmental Officer*

Mr. McDonough provided a presentation on proposed revisions to the Approved Munitions List.

- The Approved Munitions List is generated by requirements set forth by Camp Edwards 350-2 Range Regulations and the Environmental Performance Standards, which identifies an approved list of munitions for use at Camp Edwards. The list is jointly reviewed and approved through the Environmental & Readiness Center and the Environmental Management Commission (EMC) Environmental Officer. The list is generated based on what a range is approved for in the Operations, Maintenance and Monitoring Plans (OMMPs) and is used by Range Operations to ensure ammunition issued is the correct ammunition for a range.
- The list has authorized munitions listed for each small arms range (primarily 5.56mm, 7.63mm and 9mm) and training area (blank ammunition and pyrotechnics).
- The proposed revisions to the Approved Munitions List include changes in use to India Range and Sierra Range that will provide for greater operations efficiency, reduced exception to policy requests to the EMC, consolidate non-standard uses onto one range (India Range) that makes monitoring and management of the environment more efficient and protective.

- Pyrotechnics to be added to the proposed revised list would include smoke grenades, Ground Burst simulators, Star Clusters and Parachute Flares/Smoke, and booby-traps. Pyrotechnics and tracers were tested in field conditions at the request of the SAC and EMC Environmental Officer. Pyrotechnics were tested for potassium perchlorate and tracers for strontium nitrate; the results were non-detect for both compounds. The Impact Area Groundwater Study Program found no potassium perchlorate or strontium nitrate in groundwater associated with pyrotechnic or tracer use.

SAC members discussed the information:

- Camp Edwards and the EMC Environmental Officer are comfortable with moving munitions currently used via exceptions to the Approved Munitions List because these munitions have already been proven to meet environmental standards through repeated use. Camp Edwards does not anticipate a significant increase in use, as the units who need them are already using them; the change would primarily reduce administrative paperwork. Usage will continue to be tracked.
- The use of lead shot in certain rounds was questioned. The response was that these are low-velocity rounds, and the lead shot tends to remain intact rather than fragmenting, allowing for it to be captured and contained within the range berms.
- The group discussed potassium perchlorate in artillery and grenade simulators. It was explained that tests conducted with the EPA showed the perchlorate is consumed upon use and does not contaminate the soil, provided the paper dunnage remaining after detonation is collected and removed.
- It was discussed that a list of prohibited chemical constituents (such as tungsten) that would immediately disqualify a new type of ammunition from the approved list is not formally written down. Formalizing the list for continuity should be considered. Mr. Pinaud will create the list.
- Lead Monitoring and Data: the potential for lead to leach into the environment was discussed. There was a call for more data, specifically a mass balance of how much lead is fired versus how much is recovered, and whether lead is present in the “pore water” in the soil beneath the berms. While it was noted that no lead has been detected in groundwater, a suggestion was made to conduct a future test on a clean berm to measure recovery and leaching rates to better address these concerns.

Agenda Item #7: Proposed Environmental Performance Standards Revisions – Mr. Leonard Pinaud, EMC Environmental Officer

Mr. Pinaud and Mr. McDonough provided information about the proposed Environmental Performance Standards (EPS) revisions.

- Revisions include administrative updates (changing Massachusetts Military Reservation to JBCC, fixing spelling, updating regulations that have changed but remain applicable, etc.) and minor changes to the General Performance Standard and to EPS 5.
- Minor revisions to EPS 11 and to the language in EPS 11.2 to: prescribed burning will be used to achieve wildland fuel hazard reduction, habitat management and ecosystem health and diversity management goals and objectives in support of training land support and landscape resilience.
- Revisions to EPS 15.3.3 which manages how refueling occurs in Training Area/Reserve may be accomplished. Currently, EPS 15.3.3 prohibits refueling outside of 5 gallon containers in the Training Area/Reserve. Exceptions to policy have been granted for larger day tanks and commercial/civilian refuelers and for military refueling training utilizing HEMTTs.
- The proposed revisions to EPS 15.3.3 would allow refueling with a 150-gallon maximum capacity vehicle mounted day-tank in support of maintenance and construction activities and refueling in support of maintenance, construction and/or military training with HEMTT or

civilian fuel tanker truck containing a maximum of 1,500 gallons. HEMTT and civilian fuel tanker truck travel and refueling would only occur on approved roads and locations.

- EPS 15.3.3 has generated a number of exceptions to policy requests due to the requirements of civilian entities such as Eversource and other utility companies, the Impact Area Groundwater Study Program, and others to refuel as part of their missions and training requirements for MAARNG military fuelers driving HEMTTs. HEMTTs utilize secondary containment while refueling and procedures are in place in the event of a release.

SAC members discussed the information.

- Mr. Gschwend noted that in gasoline spills, even a small amount of benzene can ruin a large volume of groundwater. The MAARNG confirmed that refueling may only be completed at specific, pre-screened locations in non-sensitive areas. The map showing those locations is found in the refueling Standard Operating Procedure (SOP). This SOP is distributed to civilian and military users conducting refueling. The SOP dictates where fueling can and cannot occur. Mr. Gschwend requested a readable copy of the map showing proposed refueling sites for review and SAC members also requested an electronic copy of the proposed EPS change.
- The proposal to conduct fueling operations with secondary containment in these pre-screened, non-sensitive areas using accepted safety practices is safer than the alternative of using 5-gallon jerry cans, which multiplies the risk of a spill. The new process would include inspections and oversight to ensure it is done properly. Refueling via HEMTT would be handled by Soldiers whose specific military job (MOS) is fueling.
- The Association to Preserve Cape Cod (APCC) requested in a letter to the EMC that a review and update of the EPSs focus on the “precautionary principle,” risk assessments, cumulative impact analysis, climate change, and environmental justice. Mr. Cavanagh noted that a comprehensive review of the EPSs may be beneficial; since the EPS were written in 2002, the knowledge base has shifted on climate change and carbon impacts and current knowledge should be integrated into updated standards. Mr. McDonough said that the Guard is opposed to changing the EPSs in a way that is out of line with the requirements of Chapter 47 of the Acts of 2002; these considerations would fundamentally alter the requirements, and the burden of proof is on the proponent to show such changes are necessary. The things that require the EMC to stop the MAARNG or any user of the training area is a significant, imminent endangerment to the groundwater or habitat, and when discussing changing the EPSs, the MAARNG asks that everyone be aware of what that threshold is. The MAARNG already complies with existing regulations on climate change and environmental justice.

Agenda Item #8: Proposed Operations, Maintenance and Monitoring Plan Revisions – Mr. Leonard Pinaud, EMC Environmental Officer

Mr. Pinaud provided a presentation on the proposed revisions to the OMMP.

- The OMMP identifies operational and management practices that will be implemented by the Massachusetts National Guard at the small arms ranges and identifies procedures that allow the employment of small arms in a manner that meets current and future military training requirements and employs maximum feasible use of pollution prevention strategies to protect the Upper Cape Water Supply Reserve.
- The Environmental Performance Standards (General Performance Standard, EPS 18.1 and EPS 19) have required small arms range management components.
- The proposed changes would combine individual OMMPs for each small arms range into a combined, Integrated OMMP (IOMMP) covering all ranges, update range uses, which have changed based on new ammunition; provide an updated Conceptual Site Model, and provide

revised range maintenance procedures including a rotation schedule for metals removal on the ranges.

- Revised environmental monitoring in the IOMMP would change the reference concentration levels for soil, porewater and groundwater. In soil, Massachusetts Contingency Plan (MCP) Method 3 Ceiling Limit (M3CL) levels in soil have been the reference concentrations to date; Surface soil concentration levels currently set at the M3CLs are proposed to be set using MCP soil cleanup standards that represent a “No Significant Risk” category for soil, indicating the soil has a low potential for harm to human health or the environment. Porewater concentration levels currently set at the Massachusetts Maximum Contaminant Levels for drinking water standards (MMCLs) are proposed set equal to one-half the MMCL. Groundwater concentration levels currently set at the MMCL drinking water standard are proposed set using background concentrations in groundwater.
- A Quality Assurance Project Plan (QAPP) is proposed for the IOMMP. It would integrate all technical and quality aspects of the IOMMP, including planning, implementation, and assessment, and contains laboratory quality requirements and information that may have previously been reported in a work plan or sampling and analysis plan.
- Under consideration is installation of additional groundwater monitoring wells at each small arms range if, after evaluation, it is determined that the existing monitoring wells are not designed or located to sufficiently represent groundwater downgradient of each range, and the design, location, number and use of lysimeters for porewater sampling.

SAC members discussed the information:

- For Groundwater Concentration Levels, background concentrations are site dependent and vary within the site; drinking water standards or risk-based standards are stronger. A reference number could be achieved by using the drinking water standard or a fraction of it (e.g. dividing the MCL by 10 or 2). It was noted that the Cape Cod Commission uses a similar solution for nitrates when reviewing developments of regional impact.
- It was noted that what is happening at the small arms ranges is not remediation, existing standards and terminology must be used to identify and compare potential contaminants. The importance of being deliberate with the lexicon was stressed to avoid misinterpretation by outside regulators and agencies.
- The challenge of monitoring for contaminants that may or may not be present was discussed. An SAC member pointed out that it is difficult to design an ideal monitoring plan when the hypothesis is that no contamination will be found. He cautioned against drilling more wells without a clear plan and suggested that a more detailed hydrogeologic assessment could inform the process.
- Further discussion is needed whether through an additional SAC meeting or SAC Ad Hoc meeting.

Agenda Item #9: Public Comment – *Mr. Paul Cavanagh, SAC Chair*

There was no public comment.

Agenda Item #10: Adjourn – *Mr. Paul Cavanagh, SAC Chair*

The meeting adjourned at 8:55 p.m.

Science Advisory Council Action Items September 30, 2025

Action Items:

1. Mr. Pinaud will provide the IAGWSP PFAS report to SAC members if he has not already done so.
2. Mr. Pinaud will compile a list of constituents in ammunition/pyrotechnics that qualify as an automatic denial of that ammunition/pyrotechnic for use at Camp Edwards (e.g. tungsten, etc).
3. Mr. Pinaud will provide the refueling map and digital version of the refueling language to the SAC.