

**Science Advisory Council
to the
Environmental Management Commission
Building 1805, West Inner Road
September 28, 2023
6:00 p.m.
Meeting Minutes**

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Handouts Distributed at Meeting:

1. Science Advisory Council Draft Meeting Minutes, May 23, 2023
2. Environmental Management Commission Environmental Officer Update, September 2023
3. Joint Base Cape Cod Update, Eversource
4. Camp Edwards Update, 28 September 2023
5. Natural Resources & Training Lands Management Update
6. Small Arms Ranges Projectile Removal at Camp Edwards

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

Science Advisory Council (SAC) Chair Paul Cavanagh welcomed everyone to the SAC meeting.

Agenda Item #2. Eversource Update – Eversource Staff

Mr. DeFusco, Eversource Senior Environmental Specialist - Licensing & Permitting, gave an update on Eversource's work on Joint Base Cape Cod (JBCC), which is part of the "Cape Cod Solution," a multi-phase transmission program to improve electric reliability on Cape Cod and allow for the integration of offshore wind energy.

- Eversource's clean energy strategy, the electric grid and how energy is transmitted, and the benefits of transmission were discussed.
- The Cape Cod Solution Phase I project schedule, which will run through the third quarter of 2024, was reviewed. During Phase I, Eversource will install an additional line on their existing right of way through JBCC to the Bourne Switching Station.
- Phase II of the project will involve constructing a new substation in Bourne and upgrades to the West Barnstable substation that will enable the transmission line to operate at 345-kV. On JBCC, a new 345-kV switching station will be built next to the existing 115-kV station located in the

Camp Edwards Training Area/Upper Cape Water Supply Reserve (Training Area/Reserve). The new station will stay mostly in the existing footprint.

- The Bourne Switching Station construction was substantially completed in Fall 2022 and line cutover work will be completed by the end of 2023. He said decommissioning of the old state is planned for late October/early November 2023 to March 2024.

SAC members discussed the information and asked questions.

Is the transmission line new or within the existing right of way? Will the new 345kV station be larger than the existing footprint of the old 115kV station?

- Phase I is a new line within the existing right of way. No trees will be cleared except for some minor tree work.
- The 345kV station will generally be within the footprint of the old station; it will be just a little larger.

What is the timing of the work to be done along the utility corridor—the pole replacement—is it done?

- Phase I construction for the Mid Cape Reliability Project is happening currently; on JBCC, final restoration work is ongoing, some heavy equipment is on the rights of way for grading and habitat restoration is going on through 2024.

Agenda Item #3: Review of SAC Minutes and Approval Mr. Paul Cavanagh, SAC Chair/SAC Members

- Mr. Cavanagh requested an addenda be added to the action item in the May 23, 2023, SAC meeting minutes that notes the Copper Fate and Transport Study was sent on May 24, 2023 to SAC members by Mr. Ciaranca.
- Mr. Cavanagh made a motion to accept the May 23, 2023, meeting minutes as drafted with the addenda, and Ms. Lewis seconded the motion. All were in favor.

Agenda Item #4: Environmental Officer Update – Leonard Pinaud, EMC Environmental Officer

Mr. Pinaud, Environmental Management Commission (EMC) Environmental Officer (EO), summarized the activities related to the Upper Cape Water Supply Reserve (the Reserve).

- Nine range inspections were completed since spring. This year, Camp Edwards had a standard training cycle with no large training events. Inspections were focused on excavating bullet pockets in the backstop berms on the ranges.
- Two non-standard training requests/exceptions to policy were granted since the spring for the Falmouth Police training on Echo Range and Eversource refueling in the Training Area/Reserve as part of the Cape Cod Solution.
- ISBC Range re-design: the ISBC small arms range is under redesign. The EMC was asked to review the range design document.
- The Operations, Maintenance and Monitoring Plans are being updated and rewritten.
- Camp Edwards is holding public tours; Mr. Pinaud and several staff members from the Hazardous Waste Site Cleanup division of the Massachusetts Department of Environmental Protection (MassDEP) joined the September 22 tour; he and several MassDEP staff will attend the October 20 tour.
- There are five potential open seats on the SAC; he is working with the Division of Fish and Game to fill those spots. The Community Advisory Council (CAC) has three vacancies. Two letters of interest have been received.

- H919, an Act Relative to the Environmental Protection of Joint Base Cape Cod, sponsored by Representative David Vieira, is under review of the Joint Committee on Environment and Natural Resources on September 27. The bill would make changes to Chapter 47 of the Acts of 2002; it would change Massachusetts Military Reservation to Joint Base Cape Cod, update the names of the Environmental Management Commission (EMC) member agencies and change the way advisory council members are appointed.

SAC members discussed the information and asked questions.

What is the capacity of Eversource's refueling truck and does it sit on secondary containment? Is there a fuel tender on site 24 hours a day?

- The fuel truck holds around 2,000 to 3,000 gallons. Mr. Pinaud will find an answer about secondary containment for that vehicle (*Action*). Mr. Pinaud will find out if the fuel tender is there 24 hours a day.

The SAC asked for a list of bill numbers and sponsors for JBCC-related bills. Mr. Pinaud will send the link (*Action*).

Agenda Item #5: Camp Edwards Update – Mr. Matthew Porter, Camp Edwards Base Operations Manager, MAARNG; Mr. Jacob McCumber, Natural Resources and Training Lands Manager, MAARNG

COL John Bagaglio provided a Camp Edwards update to the SAC.

- The Impact Area Groundwater Study Program gave a base tour to the JBCC Cleanup Team in September. Camp Edwards has been conducting public tours during the spring and summer, which will continue into the Fall.
- This training season, Camp Edwards is supporting drill and annual training rather than collective training exercises. Many units are currently deployed.
- The 300-meter berm was repaired at Sierra Range, which included repairing erosion and filling bullet pockets. ISBC Range redevelopment plans will be sent to Mr. Pinaud and the Operations, Maintenance and Monitoring Plan is beginning to be developed.
- The US Environmental Protection Agency's Sole Source Aquifer Review is continuing. The EPA issued a draft document on which the MAARNG made some comments during the public comment period. The MAARNG has continued to engage EPA Region 1 and the EPA's national level. There is some forward progress; there may be an opportunity to reengage with EPA on its original document.
- The MAARNG is consolidating the OMMPs. There are different OMMPs for different ranges with slightly different requirements. A consolidated OMMP would treat each ammunition type the same for how the MAARNG reacts to them.

The SAC discussed the information and asked questions.

- Ms. Nye said that someone mentioned a news article that said that bids were requested for the MPMG. COL Bagaglio explained that the MAARNG did a request for bids and received bids for that. There are requirements for the timing of the funding. The MAARNG has not let a contract, basically the MAARNG is trying to see where it is at for costs and keep the ball rolling with the understanding if it gets the green light it can start.

Mr. McCumber provided a Natural Resources/Integrated Training Area Management update.

- An external, state-wide environmental assessment gave a positive review for natural resources planning and management at Camp Edwards; there are ongoing environmental review and permitting efforts.

- Mist netting and acoustic surveys were completed for bats during the summer where no state-listed bats were caught; analysis and consultation efforts are ongoing for training and conservation efforts. The tri-colored bat is expected to be listed this winter.
- Frosted Elfin were documented colonizing the habitat restoration site at C-14. Clam shrimp are showing rapid colonization of repaired and new puddles and recolonization was also observed.
- The rare plant survey is ongoing with two new MESA listed and watchlist species found. The onsite expansion of several rare plant species has been noted.
- A vernal pool effort for creation, planning and cultural investigation is underway; Natural Resources Program staff are coordinating with the towns.
- Updates to the Integrated Wildland Fire Management Plan is ongoing. The fall burn season is underway, and 130-300 acres are targeted for the Training Area.
- Restoration efforts include the frost bottom in Echo3, which is now functioning as a frost bottom.
- There is ongoing trapping, planning and preparedness around the Southern Pine Beetle, along with holistic resilience and ecosystem health planning and outreach.
- The program is doing extensive outreach for MAARNG including conservation, integration with the mission and Chapter 47 of the Acts of 2002. There have been events with the Massachusetts Butterfly Club, public grassland bird tours, and participation in public meetings, public base tours, and group presentations on rare species and conservation.

An SAC member asked what is the prediction for future funding to continue restoration efforts?

- Mr. McCumber replied it's good because the MAARNG has a requirement in the Conservation and Management Permit, and it is also part of the Sykes Act commitment with resource agencies to continue to manage for sustainability at the site. There are a lot of reasons to continue investing and he thinks they will have support for that.

Agenda Item #5: Projectile Recovery at Camp Edwards Small Arms Ranges – Mr. Matthew Porter, Camp Edwards Base Operations Manager, MAARNG

COL Bagaglio gave a presentation on projectile recovery at the Camp Edwards Small Arms Ranges.

- Projectile recovery from the small arms ranges is required by the Environmental Performance Standards (EPSs).
- The Operations, Maintenance and Monitoring Plans (OMMPs) also have projectile removal requirements. The India and Sierra ranges OMMPs state that projectiles should be removed after 500,000 rounds fired or five years, whichever is first, or by concurrence of the EMC on an alternative schedule. The Echo and Tango ranges OMMPs state that the MAARNG will develop timelines and plan for projectile removal in coordination with the EMC. To date, no projectiles have been removed from the ranges.
- The MAARNG would like the OMMPs to be consistent and suggests that a formal removal schedule be established. Projectiles would be removed from one range every two years, leading to a ten-year removal rotation (each range would undergo projectile removal every ten years). A formal removal schedule could be administratively institutionalized; a predictable schedule would make programming funding easier. Basing removal on a round count maximum could lead to a condition where the money hasn't programmed the right way and would have to be taken from something else. Monitoring data, projectile sampling, and modeling support the ten-year rotation.

- The purpose of removing projectiles is to maintain appropriate capture and containment of projectile, which prevents significant bullet on bullet impact, the “tiddlywink effect” where projectiles leave the bullet pocket by ricocheting, and projectile fragmentation.

The MAARNG and EMC EO excavated bullet pockets on India Range and found that the projectiles have not significantly moved with erosion; significant projectile debris is not found until just under the primary projectile pocket; and the steel penetrators initially oxidize and accrete before falling apart as oxidation (rust). The 9mm bullets on Echo Range were intact, most still with casings. The EPR (copper) rounds on India Range were mostly intact except for the steel penetrators, that go away quickly.

- The MAARNG is planning to do projectile removal on India Range as a proof of concept. The proof of concept will help the MAARNG determine what is recovered in terms of bullets versus what was fired and how long it will take for the range to recover—for the grass to grow back and the berm be protected.

Mr. Gschwend noted that he would not base recovery on round counts either but would base it on how long it takes bullets to degrade such that copper is being moved into the environment. He agrees from the photographs in the presentation, the bullets are mostly intact, but corrosion is visible on the bullet exterior meaning some of the metal is leaching into the surroundings. He suggests bullet removal quickly enough that there is not a lot of corrosion. COL Bagaglio said that monitoring has indicated even with corrosion nothing has moved into the groundwater near any action levels.

Mr. Gschwend suggested taking some of the corroded bullets, place them in a beaker, wait for a week or two and measure if there are any metals; you will see them.

Mr. Pinaud reiterated the EPS requirements to on each range to the maximum extent practicable recover metals and recycle it, prevent fragmentation and ricochets, and prevent subsurface percolation of residues. He said that based on the sampling and analytical results over several years, we are not really seeing soil or porewater contamination to any large extent and we are not seeing it in the groundwater. We are not seeing significant subsurface percolation of residues that would lead to environmental issues. The only other important thing he would see related to those EPS requirements aside from metals recovery and recycling is preventing fragmentation and ricochets. He said the focus is on metals recovery and recycling, which is important, but he is struggling with it. He said if the focus is preventing fragmentation and ricochets, how is it determined that at a certain range x number of projectiles must be fired before there are ricochets, and then the projectiles must be recovered because that is the requirement. He said how do we know that eight or ten years is the right time to prevent ricochets or environmental issues; he is struggling with the correct time frame.

Mr. Cavanagh noted that a range favored by units may need to be programmed for projectile removal more often than one that is a backup range. Some ranges may be able to program for three years out because they don’t have the same level of use. He noted it would be nice to see the intensity of use overall.

Mr. McCumber said that he believes one of the reasons for a ten-year cycle is that it is an overly protective measure of the Training Area/Upper Cape Water Supply Reserve. On Sierra and India ranges, probably the two most active ranges, we have not seen fragmentation or evidence of bullet pocket issues. Problems are not anticipated, so it would be protective for the ten-years.

Ms. Nye asked what the number of active ranges is. COL Bagaglio responded that there are four active small arms ranges: India, Tango, Sierra, and Echo ranges. She said the idea of counting bullets is useful because it gives a better sense of what is happening versus months; however, she understands planning is important. She would not suggest going longer than ten years and likes the conservative approach of doing removal at a minimum of ten years. She thinks also that MAARNG doesn’t have to wait for the 500,000 rounds. Planning could be done knowing that number is getting close. COL Bagaglio noted that one issue is that training cycles can vary; an average year may be 100,000 rounds fired on India Range leading to planning for a five year cleanout at 500,000 rounds, but an up tempo training year may have

250,000 rounds fired, accelerating the density to a point that cleanout would have to happen sooner than planned and the MAARNG has to react to a range being closed a year sooner and finding money to fund that range a year sooner than planned.

Mr. Gschwend asked if a mass balance has been done of the water that falls on the ranges every year. Mr. Pinaud said we know the precipitation falling on the ranges and have porewater and groundwater sampling. COL Bagaglio said lysimeters are at the base of the berm; runoff from the face of the berm should run through the bullet pockets and hit the lysimeter. Mr. Gschwend said he assumes some of the water goes vertical and the lysimeters don't collect what goes vertical. He would suggest thinking about conducting a water balance first.

Mr. McCumber said due to the research on metals movement, MAARNG is starting with the knowledge that it is not moving in the water to any significant degree but binding in the top layer of soil. The question Mr. Pinaud is focusing on is fragmentation and ricochet relative to the maximum extent practicable metals recovery. Mr. Gschwend said he challenges you to put bullet fragments in a beaker for a couple of weeks and tell him how much copper is in the beaker and tell him there is no movement. Mr. Pinaud said he believes that is what the Copper Fate and Transport Study did. Mr. Gschwend disagreed and said he did not think Mr. Clausen used degraded bullets. He would like to have Mr. Clausen in the conversation in the future. He said that if the water goes vertically at all, we should think about a mass balance.

Mr. Pinaud said he would be happy to schedule an SAC Ad Hoc meeting; Mr. Clausen is a member of the Ad Hoc group and was the author of the Copper Fate and Transport Study. The meeting could be scheduled prior to Spring 2024. Mr. Cavanagh agreed scheduling an Ad Hoc meeting would be productive.

Agenda Item #6: Public Comment – Mr. Paul Cavanagh, SAC Chair

There was no public comment.

Agenda Item #7. Adjourn – Mr. Paul Cavanagh, SAC Chair

The meeting adjourned at 8:04 p.m.

Science Advisory Council Action Items September 28, 2023

Action Items:

- Mr. Pinaud will find out if Eversource's refueling truck sits on secondary containment; he will find out if a fuel tender is there 24 hours a day.
- Mr. Pinaud will provide a link to the SAC for a list of bill numbers and sponsors for JBCC-related bills.