
**Science Advisory Council to the Environmental Management Commission Meeting
Building 1805
Camp Edwards, Massachusetts
June 4, 2014
5:30 p.m.**

Meeting Minutes

<u>Members:</u>	<u>Organization:</u>	<u>Telephone:</u>	<u>E-Mail:</u>
Dr. Paul Cavanagh	SAC	860-416-3978	conservationscientist@yahoo.com
Tara Nye	SAC	508-428-0469	tnye@apcc.org
Bob Miles	SAC	508 362 7426	Boblmiles@comcast.net
Dr. John Duggan	SAC	617-989-4181	dugganj@wit.edu
Denis LeBlanc	SAC	508-490-5030	dleblanc@usgs.gov
Donald Schall	SAC	508-833-6961	donald.schall@aecom.com

<u>Environmental Officer:</u>	<u>Organization:</u>	<u>Telephone:</u>	<u>E-Mail:</u>
Mark Begley, Executive Director	EMC	508-968-5127	mark.begley@state.ma.us

<u>Attendees:</u>	<u>Organization:</u>	<u>Telephone:</u>	<u>E-Mail:</u>
LTC Edward Gallagher	MMR ARNG	508-968-5802	edward.p.gallagher10.mil@mail.mil
MAJ John Bagaglio	MA ARNG	508-968-5226	John.s.bagaglio@mail.mil
1SG Brendan Bowen	MA ARNG	(508) 968-5267	Brendan.p.bowen.mil@mail.mil
Emily Kelly	E&RC	508-968-5146	emily.d.kelly2.nfg@mail.mil
Sally Hartmann	E&RC	508-968-5145	sally.a.hartmann.nfg@mail.mil
Dr. Mike Ciaranca	E&RC	508-968-5121	michael.a.ciaranca.nfg@mail.mil
Paul Nixon	E&RC/IAGWSP	508-968-5620	Paul.s.nixon4.nfg@mail.mil
Jake McCumber	MA ARNG	508-968-5848	Jacob.c.mccumber.nfg@mail.mil
CPT Alexander McDonough	Range Control	774-286-1373	Alexander.v.mcdonough.mil@mail.mil
Bill Sullivan	E&RC	508-968-5147	William.g.sullivan.nfg@mail.mil
Kevin McCune	NU	339-987-7020	Kevin.mccune@nu.com
Steve Mellin	6SWS	508-968-3213	Stephen.mellin.1@us.af.mil
Rose Forbes	AFCEC	508-968-4670	rose.forbes@us.af.mil

Handouts Distributed at Meeting:

1. Draft SAC Meeting Minutes for October 2, 2013
2. Utility Transmission Maintenance, Construction and Permitting
3. Air Force Civil Engineer Center Wind Energy Projects at Joint Base Cape Cod
4. Environmental and Readiness Center Update
5. Pilot Period Close Out Request for Juliet, Kilo, and Tango Ranges

Agenda Item #1. Welcome and Chairperson's Comments – Dr. Paul Cavanagh, SAC Chairperson

Science Advisory Council (SAC) Chair Dr. Cavanagh welcomed everyone to the meeting. Dr. Cavanagh stated that he requested an update on projects that have been briefed in previous meetings. He noted that Dr. Ciaranca will be presenting information on the Small Arms Ranges and he will be requesting the SAC's support.

Dr. Cavanagh asked if in the future the SAC could receive the background information being presented in advance for review then the meetings could be shortened.

Dr. Cavanagh asked that Agenda Item #2, the minutes, be postponed until later in the meeting when there's a quorum.

Agenda Item #2: NSTAR Update on Projects in the Reserve – Kevin McCune, Northeast Utilities

Mr. McCune gave an update on NSTAR projects in the Reserve. He explained the electric delivery system and the need for construction, maintenance and upgrade. The presentation will include activities and equipment, and Best Management Practices including Vegetation Management, along with siting and permitting.

Mr. McCune described the electric delivery system and listed the electric companies operating in Massachusetts. He also discussed the history of the region's electric power industry, culminating in the ISO NE's (Independent System Operator for New England's) oversight of the electrical energy needs for over 6.5 million households and businesses. Mr. McCune said that the Cape reached its peak usage demand in June 2013.

Mr. McCune discussed the transmission activities taking place in the Reserve including poles and structure replacement; wire repair and replacement; hardware replacement; groundwire; roadway access; gates and barriers, and structure painting. He also discussed the types of equipment being used in the Reserve such as line trucks, drillers and excavators. Mr. McCune stated that environmental issues are reviewed for the pole structure replacements. Mapping is done pre construction and abutters notified.

Mr. McCune discussed pole and structure replacement and then explained how NSTAR completes conductor OPGW replacement. He noted that there are noise complaints and abutters may need yard work after the work has been completed.

Mr. McCune described the new gate at Donnelly Pond and the access road systems that needed to be upgraded. Mr. Begley noted dirt bike tracks. Mr. McCune replied it is hard to prevent dirt bike access. Gates and barriers cut down the dirt bike access.

Mr. McCune gave a description of the BMPs manual which includes pre-planning, swamp matting, silt fence and hay bale, straw wattle, dewatering basin, and environmental monitors. Mr. Begley stated that several miles of roadwork at JBCC were saved meeting with Natural Resources and NSTAR for pre-planning/GIS.

Mr. McCune stated that vegetation management is done for three reasons: part of vegetation management program (VMP), emergent work, and project support. Mr. McCune also discussed the right of way clearance requirements and Integrated Vegetation Management, consisting of mechanical, chemical and natural processes. The herbicide authorization consists of submitting a 5-year vegetation plan (VMP) to the Department of Agricultural Resources (DAR) for herbicide application authorization. Conservation Commission notification is through DAR process not Wetland Act or Bylaws. Mr. McCune stated that there is hand cutting in a wetland, felled trees will be removed from the wetland and windrowed along edge of ROW and smaller trees would be cut and let lie. Mr. McCune stated that there is mechanical work near water edge at JBCC. Mr. McCune stated that there is herbicide application which consists of 2-4 year treatment cycle, targeted species, low volume foliar treatment, promotes vegetation compatible

with ROWs, encourages beneficial wildlife habitat and supports meadow environment. Mr. McCune displayed a photo of the post herbicide at JBCC, pre IVM, post mechanical, and post herbicide.

Mr. McCune then talked about siting and permitting and gave a summary of NSTAR training conducted in the Reserve. He also talked about the Osprey nest stand in Reserve.

Ms. Nye inquired about the vegetation management plan if there are any other criteria that are determined for mowing or use of pesticides is there an approach to mow a certain way. Mr. McCune replied that there is a BMP and weekly consultation with Natural Heritage. The VMP will be considered in different areas of mowing.

Ms. Nye asked about the drinking water recharge areas for herbicide application. Mr. McCune replied that Department of Agricultural Resources (DAR) oversees the herbicide application for the drinking water area. The YOP would be submitted to identify any well within 100 feet of the right of way which would be verified. GIS and mapping would be done and there would be no spraying within 50 feet of the radius for public drinking well. The wetlands will be sprayed but not standing water or 10 feet to standing water. The DAR has a list of chemicals permitted for use from a standard and sensitive list. For the wetland or resource area the sensitive list is used only.

Dr. Cavanagh asked if restoration could be addressed by the power lines for stabilization of the sites. Mr. McCune stated that erosion is controlled during restoration.

Mr. Begley stated that he and Jacob McCumber, the MAARNG's Natural Resources Manager, consult on the methods being used in the restoration areas with NSTAR and use of additional seeding and hydroseeding.

Agenda Item 3: Update on Existing Wind Turbines in the Reserve – *Rose Forbes, P.E., Remediation Program Manager, IRP JBCC, and Steve Mellin, Support Officer, Cape Cod AFS*

Ms. Forbes stated that AFCEC's two wind energy locations are Wind I and II.

Ms. Forbes explained that Wind I is a Fuhrlander FL-1500, a 1.5 MW turbine with an 80 meter hub (118 meters high from ground to tip of rotor blade) and a 77 meter rotor diameter. The turbine became operational on December 2, 2009. The turbine has produced 12,587 MWhr since startup through April 30, 2014 resulting in a credit of \$1,793,772. The return on investment (ROI) is showing approximately 10 years (not accounting the gear box exchange). Ms. Forbes noted that the Fuhrlander is down for about a month because of a gear box exchange.

Ms. Forbes stated that there were start up issues, mostly dealing with programming. The turbine started up at 50% power production, auto start did not work properly, and the turbine was not responding well to gusts, the nacelle lighting was not adequate, and remote monitoring was not ready. Reprogramming fixed several problems, and the nacelle light was replaced.

Ms. Forbes stated that there were operational issues with the encoder. It was the improper make/model and the backup batteries had a short life and were possibly older when installed. The generator brushes also had a short life, wearing earlier than anticipated and were possibly installed improperly. A lightning strike damaged the bearings and isolation disc in the generator, and the gearbox failed after 4.5 years of operation; a borescope inspection identified a bad bearing. A lightning strike caused the material on a blade edge guard to bubble; it was removed during a blade inspection. The bridge rectifier, which monitors grid power caused a grid loss error. The chopping resistor, which helps to stabilize power output, had a faulty part that resulted in a yaw converter error that lasted about 1.5 years.

Ms. Forbes explained that Wind II consists of two GE 1.5 MW turbines with 80 m hubs, and 77 m rotors. It was a two year project, which began operation on 8 November 2011. The expectation was that it would produce 7,620 MWh annually based on 29% capacity factor (P50) generate 50-60% of AFCEC's total electrical requirement (>\$2M in 2009; \$1.7M in 2011), and reduce 25-30% of air emissions. The actual production is 18,812 MWh from 08 November 2011 to 30 April 2014, with a credit of \$2,459,865 through 25 April 2014. The ROI is approximately 10 years.

Ms. Forbes stated that there was a construction issue with the metric/English conversion for the bolts and poor-quality milling resulted in the bolts being too large for the tower flange opening. GE milled the flange openings on site to accommodate the bolts.

Ms. Forbes stated that there were start up issues when the generator cooling fans failed, a second fan failed a few weeks later. This was a known problem with the turbine model. Also, the nacelle lighting did not switch from white strobe to red strobe at night; AFCEC received email from a concerned resident living 5 miles away. Ms. Forbes stated that there were operational issues with an oil leak in the filter housing.

Ms. Forbes displayed graphs of the Combined GE1 and GE2 Wind Energy Analysis, Fuhrlaender Wind Turbine Energy Analysis Lifetime, JBCC Wind Turbine Production verses Remediation Project Usage Since Wind I Startup, JBCC Wind Turbine Production verses Remediation Project Usage, Historical and Future.

Mr. Mellin gave a summary of the wind turbines at Air Station Cape Cod. They are Two GE 1.68 MW turbines. They began operation on 21 March 2014, and as of 26 April produced 2,406.6 MWH, with a net metering credit of \$346k.

Mr. Mellin stated there was a construction issue at Site 2 (GE-4) with a release of gear oil. On 2 December 2013, an ECC subcontractor noticed oil leaking down turbine tower. ECC notified the Air Force (AF) and the AF made notification to the Massachusetts Department of Environmental Protection (MassDEP) and JBCC agencies. The contractor contacted Clean Harbors to begin immediate containment and clean up operations. GE also was notified of the problem and Windcom was contacted to clean the exterior of tower and inside the nacelle. The source of the leak source was determined to be a bad gasket on the oil pump. The total release was approximately 53 gallons of gear oil. The nacelle, tower, foundation, and any impacted soils were cleaned or removed. Clean Harbors submitted a Response Action Outcome Statement to MassDEP on 31 January 2014. The response actions accomplished a level of no significant risk. They are working with GE Engineering and maintenance staff to prevent/contain any future leaks.

Mr. Mellin stated that there are other energy projects at JBCC: the Veteran's Administration cemetery installed a smaller wind turbine (50kW) on their property. The Air National Guard is planning the installation of multi MW solar panel arrays on the closed JBCC landfill. The United States Coast Guard uses a geothermal heating/cooling system at two of its hangars and is exploring the possibility of a solar array. JBCC agencies are actively making improvements in energy efficiency including programs offered by Cape Light Compact. New buildings are LEED silver at a minimum.

Mr. Mellin that there is solar photovoltaic (PV) array planned for the closed landfill. EPA-funded a Feasibility Study (FS) to evaluate the potential for PV on the landfill. The FS was conducted by NREL; Otis ANG (102IW) is the proponent, and the Defense Logistics Agency is the contracting office. Proposals have been evaluated and we're awaiting selection of contractor.

Dr. Cavanagh inquired about the return investment on Wind I and Wind II over a ten year period. Ms. Forbes replied 6 to 8 years based on a straight line estimate and replacement costs. She noted there is a pre and post Construction Monitoring Report that are available for review.

Mr. Begley suggested the monitoring report be a topic for a future meeting.

Agenda Item 4: Camp Edwards Small Arms Ranges Update and MANG Request – Dr. Mike Ciaranca and Paul Nixon, MANG

Dr. Ciaranca stated that there was a request to close out the Pilot Period for Juliet, Kilo and Tango Ranges which have been in Pilot Period for seven years. The Sierra and India ranges Pilot Period doesn't expire until July 2014.

Dr. Ciaranca stated that the Pilot Period Goal from USEPA Tango Range approval letter 2007. The USEPA has monitored the pilot project closely to ensure that the pollution prevention measures succeed and that groundwater is not contaminated as a result of this pilot project.

Dr. Ciaranca gave background information about Tango Range including the Impact Area Groundwater Study Program's investigation of soil and groundwater conditions on the range; the construction of the STAPP Bullet Catcher System on a newly constructed berm and the active use of the range as a 25m range beginning in 2007 using STAPP.

Dr. Ciaranca gave background information on Juliet and Kilo Ranges: in 1998, the backstop berms were treated for lead during the 1998 Berm Maintenance Program; removal of spent projectiles from the soil and the treatment of the soil with Maectite™ (phosphate) to immobilize the remaining lead. Active use of these ranges as 25m ranges began under a Pilot Period in 2009 using STAPP.

Dr. Ciaranca said that pistols, M16/M4 rifles and the Squad Automatic Rifle are used on the ranges. Users of the range include the Army and Air National Guard, the US Coast Guard, municipal police departments, the State Police, State and Local Special Tactics Teams, the FBI, and Environmental Police officers.

Dr. Ciaranca stated that there were three categories of Lessons Learned: Operations, Inspection and Maintenance, and Environmental Monitoring, which were incorporated into the Operations Maintenance & Monitoring Plans (OMMPs).

Dr. Ciaranca stated Operational lessons learned on Tango Range were raising the 25-meter firing line improved the angle of firing for training and reduced the number of overshot. The toe berm boxes have been successful in protecting the base of the STAPP systems. There were many lessons with the top cover on Tango Range that resulted in a different installation and preparation methods when Juliet and Kilo ranges were constructed. Tracer rounds were found to function acceptably within the STAPP system. However, on Tango Range there was an instance where tracer rounds bounced back towards the firing line.

Dr. Ciaranca stated that Inspection and Maintenance lessons learned included covering the STAPP systems with tarps precludes most water build up within the system. Less pumping, sampling, and disposal equals reduced operational cost. The use of the 7.62mm (M240B) and/or firing the 5.56mm (M249 SAW) weapons, machine guns with heavy rates of fire that create beaten zones, and .40 cal hollow points were observed to cause increased wear. It is speculated that top cover maintenance during the pilot program would have been less if more rigid QA/QC procedures were followed on the STAPP System installations.

Dr. Ciaranca stated that Environmental Monitoring lessons learned consists of legacy soils in constructing the ranges. Maectite™ (phosphate) was used to immobilize lead in legacy soils during a 1998 berm treatment process for stabilizing lead in soil. Tension lysimeters are not appropriate for monitoring the soil pore water on SARs. Antimony has been detected above the OMMP action level in pore water on Juliet and Kilo Ranges.

Dr. Ciaranca said that from the literature to date, it was found that with Antimony mobility can occur episodically in some environments; adjusting the pH, high or low, will increase metals, antimony, and mobility in soil; the use of phosphates can dramatically increase the mobility of antimony in soil; iron can be used to immobilize antimony, but monitoring and investigation will be ongoing to ensure protection of the Upper Cape Water Supply Reserve.

Mr. Nixon displayed tables for the OMMP action levels and sampling results for surface soil action levels, pore water action levels, and groundwater action levels.

Mr. Nixon displayed graphs of lead in soil at J Range firing line, J Range in front of the berm, K Range Firing line, K Range in front of Berm, T Range Firing line, and T Range in front of the berm. The lead in the soil cannot exceed the 3000 ppm action level.

Mr. Nixon displayed a table of the Antimony in Soils Data that consists of all detections at firing lines and in front of berms.

Mr. Nixon displayed a graph of the lysimeter (porewater) results 2010-2014 at Juliet, Kilo and Tango Ranges. At Juliet Range, trend levels were lower for antimony, copper and lead. Sampling will be done again in July and August.

Mr. Nixon displayed a table of the Groundwater Sampling Results. Lead is not detected often and when it is, iron and other metals are usually also present indicating the presence of sediment. There are no apparent trends.

Mr. Nixon displayed a table of the Groundwater Sampling Results – All Antimony detections and said that Antimony has only been detected once in one well. There are no apparent trends.

Mr. LeBlanc asked if the samples are filtered or unfiltered. Mr. Nixon replied there have been a combination of both but there was a request for total metals in the aquifer so filtered samples were taken.

Mr. Nixon said that the following slides show the variability of copper results in groundwater but all concentrations are low. Mr. Nixon displayed graphs of the Copper in Groundwater at well MW-473S (K Range) and Well MW-474S (K Range), Well MW-471S (J Range) and Well MW-472S (J Range).

Mr. Nixon noted that the ranges are being managed and protecting the groundwater at the same time.

Dr. Ciaranca stated that there have been five iterations of the OMMP to include a draft in March for review by EPA and EMC for concurrence.

Dr. Duggan asked what the regularity of lysimeter monitoring will be after the close out of the pilot period at the ranges. Dr. Ciaranca replied that there will be annual sampling. Mr. Nixon replied that pore water sampling has always been annual. The groundwater sampling is done annually and the soil monitoring is done every other year on the ranges.

Mr. Miles asked if there will be increased use of the ranges. Dr. Ciaranca replied yes, when copper is used on the ranges.

LTC Gallagher stated that there were 46 training days between all three ranges over the past year.

Mr. LeBlanc asked if the change to copper will affect the antimony sources or legacy sources. Dr. Ciaranca replied there may still be legacy sources.

Mr. Duggan asked if there was a change to the bullet in the future what triggers a change in monitoring.

Dr. Ciaranca replied there will be similar monitoring. Mr. Begley replied that if there is a change, it is addressed in the OMMP, it will be reviewed by the EMC and EPA. The annual *State of the Reservation Report* will document the changes.

Mr. Begley stated that he has worked closely with the Guard for all the updates of the OMMP, monitoring and weekend training review. He supports ending the pilot period for Juliet, Kilo and Tango ranges.

Dr. Cavanagh motioned that the SAC recommends that the EMC authorize their Executive Director (Mark Begley) to close out the Pilot Period for Juliet, Kilo, and Tango Ranges and allow the MANG to continue to operate the ranges in accordance with the EPSs and the Operations, Maintenance, and Monitoring Plan for these ranges. All the SAC members voted in favor.

Agenda Item #5: Review of SAC Meeting Minutes

The minutes from the October 2, 2013 SAC meeting were reviewed. Dr. Cavanagh requested a few minor edits to the minutes: page 3, third paragraph, delete “training” in the first sentence “said that the reserve is set aside;” page 4, change 2 ppb to 2 ppm; page 5, last paragraph, change “posted” to” hosted;”

page 6, second paragraph, last sentence change to plural “populations,” and third paragraph, change to plural “populations.”

Dr. Cavanagh made a motion to approve the minutes with the corrections as indicated, Mr. Schall seconded the motion, and the minutes were approved unanimously.

Agenda Item 6: Massachusetts Army National Guard Updates – Dr. Mike Ciaranca, Deputy Director, Environmental and Readiness Center

Dr. Ciaranca explained that outgoing JBCC Executive Director, Brigadier General Gary Keefe will be replaced by COL Francis Magurn. The new Range Control officer is CPT Alex McDonough; the new Range Control Non-Commissioned Officer (NCO) is MSG Brendan Bowen. The new JBCC Executive Director is COL Francis Magurn.

Dr. Ciaranca discussed the Annual *State of the Reservation Report*. The format and content are under review and changes will be made to both. He announced that the Military Civilian Community Council (MC3) will meet on July 9. Dr. Ciaranca discussed the coordination with the Monument Beach Sportsman’s Club on their range. LTC Gallagher stated that the club enlarged their range; CPT McDonough and GIS staff took measurements of the berms and there’s data analysis on-going during the mitigation process for the Surface Danger Zone (SDZ) for the range. Initially the SDZ reached all the way into the five corners of the Impact Area and once there was overlay, the SDZ came back to Burgoyne Road, an egg shape from the top of the landfill over Burgoyne Road. The Club is as concerned about safety as the Guard is, he noted. There are final mitigation strategies being developed based on schedules.

Dr. Ciaranca noted that grassland bird tours are planned for July. Other events included an Emergency Responder Training in May; Operation Mercy lift on 3 June on Nantucket. Finally, Dr. Ciaranca said he is participating in the Cape Cod Area 208 Water Quality Planning Upper Cape West and South Working Group.

Dr. Ciaranca gave an update on the consultation with the Mashpee Wampanoag and Joint Memorandum of Understanding, which is in draft. He and other staff will be meeting with Ms. Peters and other members of the tribe to reestablish relationships between the Guard and Mashpee Wampanoag.

Dr. Ciaranca said that a new position was added for a Land Rehabilitation and Maintenance/Training Requirements Integration Coordinator, who will be a project manager and planner for training area restoration and improvement. They are also in the process of hiring a lead field technician.

Dr. Ciaranca said that to date, 47 acres were burned in the Cantonment area grasslands on October 22 and 133 acres were burned on BA-7 North on October 28.

Dr. Ciaranca discussed Fiscal Year (FY) 14 fire planning and interagency initiatives for the MAARNG including the Impact Area buffer, the land navigation lane, and interagency fire training. The US Fish and Wildlife Service and the Massachusetts Division of Fisheries and Wildlife are improving the New England Cottontail habitat using vegetation management and prescribed fire; approximately 76 acres were completed. There’s a Joint Grant Proposal to manage the cottontail and vegetation through a Legacy (DOD) grant proposal. The proposal will be for approximately \$5,000 based on potential of the Federal listing of the New England Cottontail and will include burn planning, mechanical treatment and use of fires of those treatment areas.

Dr. Ciaranca updated the SAC on the ecological monitoring conducted by the program and said that Monitoring FY14 consists of 10 New England Cottontail rabbits were caught and three are still being tracked (two are in the Central Impact Area). Habitat research is ongoing based on telemetry results. The program is conducting fire response monitoring including rabbit vegetation protocol before and after burns. Continue to monitor vernal pools and bird monitoring: standard route, grasslands. Rare plant surveys (August). There are more rare plants being found during the surveys, he said.

Dr. Ciaranca stated that the ITAM Assessments consist of assessing the land navigation areas for restoration and rehabilitation needs. The maneuver trails will be assessed for vegetation and erosion

condition. The battle positions and bivouacs will be assessed for condition and rehabilitation needs. The Soldier Validation Lanes will also be assessed.

Dr. Ciaranca said that there were five hunts in the fall for deer: paraplegic, archery, military (new), shotgun, and primitive. There were 1,126 hunters-days, with 60 deer taken. There were 93 hunters-days during the spring turkey hunt, and 13 turkeys harvested. There were some changes in the hunting program changes and a questionnaire distributed by the Natural Resource Program showed that the changes were well received. The changes included improved safety buffers, increased hunting opportunity with a single-day military hunt and designated drive-free zones. Mr. McCumber also announced the upcoming grassland bird tours in July.

Dr. Ciaranca discussed the expected Federal Endangered Species Act (ESA) listing of the Northern Long-eared Bat (*Myotis septentrionalis*). There has been a 99% population decline due to white-nose syndrome. The current Federal status of the bat is: proposed endangered (the current state status is endangered). The full listing (endangered) is expected in September 2014. The potential impacts on Camp Edwards are: review ongoing actions and initiate “informal conference” training, conservation implementation, and on the cleanup programs. There’s an uncertain impact on cleanup actions, alternative energy projects, and future range development. There was little to no impact expected for ongoing training. There’s potentially substantial impact on conservation projects including seasonal restrictions, ESA consultation on the INRMP, and pre-project bat surveys raising cost and time.

Dr. Ciaranca discussed the Integrated Natural Resources Management Plan (INRMP) five-year review. A meeting will be scheduled with the Sikes Act partners, potentially in mid July to review and discuss updates and a timeline. Critical update components are: the endangered species management component, including management assurances for USFWS for the Northern Long-eared bat and New England Cottontail; prescribed fire strategy including conservation, risk mitigation, military training needs, situational constraints, and partner interests; invasive species management strategy, including prioritization, targeted season and methods; and management focused long-term monitoring plan (fire effects, New England cottontail response, military training). There are measurable objectives; for example, the wind turbines construction and the effect on the habitat.

Dr. Ciaranca discussed the Juliet, Kilo and Tango Range Operations, Maintenance and Monitoring plan update. The primary updates were to the timelines and notifications. The description, inspection and metrics for the toe berm boxes were also expanded. There will pH monitoring and when necessary, maintenance of the soil pH to minimize corrosion, dissolution, and mobility of metals in the environment.

Dr. Ciaranca provided additional small arms range updates. Lima Range-40mm Practice Grenade Launcher Training, will have improved drainage, grading, and planting, detailed inspection, further containment using backstop netting. Sierra and India Ranges: Copper only ranges are having bullet pocket maintenance. Hand Grenade Qualification Course’s Operation, Maintenance, and Monitoring Plan is completed and recently submitted for EMC approval. Echo Range: Combat pistol qualification range. There is a Request for Design Proposal (RFP).

Agenda Item # 7. Public Comment

There was no public comment.

Agenda Item #8. Adjourn

The meeting was adjourned at 8:00 p.m.