**Microsoft TEAMS Virtual Meeting**
**JBCCCT Meeting 01 December 2021**
**6:00-8:25**

**Meeting Minutes**

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**Meeting Presentations:**

Available online at the AFCEC webpage and IAGWSP website or by email upon request.

**Agenda Item #1. Introductions, Late-Breaking News, Approval of 28 July 2021 JBCCCT Cleanup Team Meeting Minutes** – *Mr. Douglas Karson – AFCEC/IRP*

Mr. Karson reminded people to identify themselves prior to speaking. Mr. Karson asked for comments on minutes from the 28 July 2021 JBCCCT meeting. No comments. Minutes can be finalized.

Mr. Karson asked for follow-up discussion on action items from 28 July 2021 meeting which were addressed with notification to team members. There was no follow-up discussion.

Mr. Karson reviewed the news release issued on 16 November 2021 stating closure has been achieved at two sites at Joint Base Cape Cod. They are Chemical Spill-20 and Chemical Spill-23. Both sites are locating in southern portion of the base in Falmouth. The Remedial Action Closure Reports for both plumes were finalized and distributed in October and can be found in the USAF Administrative Record. The sites will be closed since cleanup objectives have been achieved from pump and treat systems that operated at many years along with natural attenuation and land use controls were also implemented in applicable private wells. Mr. Karson asked if there was any discussion on these closures. There was no discussion.

Mr. Karson reviewed the agenda and time estimate for the night's meeting.

**Agenda Item #2. Update on PFAS Investigation in Area Ponds –** *Mr. Marc Nascarella – Massachusetts Department of Public Health (MADPH or DPH)*

Mr. Nascarella reported that the DPH recently released the results of the surface water surveillance of PFAS investigation in JBCC area ponds which Mr. Nascarella described at the July 2021 JBCCCT meeting. This presentation is a follow up to the July presentation.

All of the information on this presentation and more is available on Mass.gov. This includes information that is helpful in terms of general risk communications as well as specific fish advisories for the ponds along with a technical support document that walks through the derivation of screening values of PFAS on analytes that were measured in the approach to conduct a risk assessment. Also provided are copies of lab data packages as they were submitted to the DPH and are summarized in a report that includes all of the data but also summarizes it. This presentation is also online on Mass.gov website.

DPH is involved in recreational water body surveillance as part of its regulatory role within the Commonwealth. DPH regulates two kinds of bathing beaches: public beaches (town and state beaches) and semi-public beaches (condo, YMCA, etc...).

Massachusetts legislature invested in several agencies including DPH to perform additional work on PFAS to understand the magnitude and extent of contamination across the Commonwealth and charged those agencies with looking at that information within the areas they regulate. DPH also initiated an effort to evaluate PFAS in bottled water as it is one of DPH's areas of regulation. DPH is also responsible for issuing recreational fish consumption advisories. DPH used some of the investment to initiate a pilot to sample waterbodies. DPH decided to sample waterbodies in the vicinity of Joint Base Cape Cod (JBCC) because for a number of years DPH has worked with the cleanup team partners to evaluate waterbodies around JBCC and prepares an annual summary describing the risks and opportunities for use of recreational waterbodies around JBCC. This was an opportunity to collect additional information to inform that

recreational waterbody fact sheet as wells as pilot DPH's approach to conduct PFAS surveillance in the Commonwealth.

Mr. Nascarella stated that this effort is not related to a Superfund assessment or any site-related activities. The role of DPH was not to identify specifically the magnitude and extent of contamination related to site-related contamination investigation. DPH's role was to evaluate risks to swimmers and risks to humans consuming recreational caught shellfish.

Mr. Nascarella referred to his fourth slide and stated that DPH sampled 16 public or semi-public bathing beaches in Barnstable, Bourne, Sandwich, Mashpee, and Falmouth, and collected a number of different fish samples from various waterbodies. In most waterbodies only one water sample was collected at a central location. Several samples were collected at larger beaches.

DPH used best practices collecting environmental samples to avoid contamination. Samples were analyzed by SGS AXYS Laboratory in Canada which developed proprietary methods which have since been rolled out to other laboratories and these methods are available online.

Mr. Nascarella presented the surface water results on his sixth slide. The waterbodies were evaluated relative to a surface water screening level that DPH developed on federal guidance for evaluating PFAS, specifically, the Agency for Toxic Substances and Disease Registries minimal risk levels (MRLs). DPH developed screening levels using the MRLs and evaluated PFAS contaminants for which MRLs are available. If a waterbody exceeded a screening value developed from an MRL, that would trigger DPH to conduct a risk assessment for that waterbody. The screening values are designed to be relatively conservative so if there is any risk to a hypothetical, exaggerated, worse-case scenario using the waterbody, it would trigger DPH to do a detailed dive in evaluating the actual use of the waterbody. This screening level was used to compare any of the individual PFAS analytes, and if any of the analytes exceeded 23 ng/L, DPH would conduct a risk assessment.

PFAS were detected in all 16 waterbodies. The average was seven different compounds at each waterbody with a range of 2-11 different PFAS analytes. John's Pond had the most number of different PFAS in that 11 compounds were identified. John's Pond was the only waterbody that initially exceeded the screening level of 23 ng/L and required a risk assessment which considered the ways in which individuals would actually swim at the waterbody. For example, the risk assessment assumed someone would swim in a waterbody every day of the year for multiple hours per day which is unrealistic; thus, it is a hypothetical/worse-case scenario. However, that is how DPH screened the waterbodies, asking if an unlimited, unfettered access would be safe. When evaluating John's Pond, DPH initially assessed that it would not be safe for a small child to swim in that waterbody every day. DPH looked again and re-assessed if it was safe for a child to swim every day all summer at John's Pond, and it was assessed that it is safe under those parameters. John's Pond is an example of how a waterbody could exceed a screening level but pass a risk assessment.

Fish samples were collected at five waterbodies as shown on his ninth slide which were selected from the 16 waterbodies where surface water sampling was conducted. These locations were chosen by the resources available to DPH to sample fish and fishing pressure at the waterbodies – which ones are most accessed by anglers. Established best practices for collecting fish were used. Whole fish were sampled and sent to Canada where they were filleted and skinned at the lab which is standard practice to issue recreational fish consumption advisories.

Slide 11 shows the average PFAS concentrations in fish. PFAS were identified in fish from all of the five waterbodies. PFAS concentrations in fish tissue were evaluated in a three-step process as outlined on slide 12. DPH used the screening value of 0.22 µg/kg (ppb) to identify when a detailed assessment would be done. If a fish tissue sample exceeded 0.22 µg/kg (ppb), a fish consumption advisory was needed. As with the screening level for surface water sampling, the screening level of fish tissue reflects a person eating that

fish every day for the rest of their life which is a hypothetical/worse-case scenario and would be considered unsafe for unlimited consumption; and, based on recommended consumption rates, DPH would issue an advisory which would advise a safe frequency to consume the fish. DPH differentiated recommendations between sensitive populations which include reproductive women and small children who are at a unique special risk life stage for exposure to chemical contaminants like PFAS, and recommendations for everyone else (general public).

PFAS were detected in all 51 of the fish sampled. On average seven compounds were identified with a range of 2-11 compounds. The highest PFAS levels were found in John's Pond with PFOS concentrations as high as 170 µg/kg in Blue Gill and White Perch.

PFOS levels were high enough in all fish to trigger a DPH fish consumption advisory for all five waterbodies sampled in 2021.

Mr. Nascarella reviewed the DPH advisories on slide 14. Each of the five waterbodies had existing advisories in place from legacy contaminants. There were some recommendations at the waterbody where previous measurements were done, or the Commonwealth has an existing state guidance or state recommendation that if a waterbody has not been sampled for mercury and mercury has not been detected in that waterbody, because of the ubiquitous nature of mercury in waterbodies across the state and the risk that is poses to sensitive populations, DPH says that individuals in the sensitive populations should not eat any fish from a waterbody that has not been sampled for mercury. Mr. Nascarella said that in some ways when issuing an advisory for a waterbody, the practical impact is essentially nothing for a sensitive population because it was already recommended for sensitive populations not to consume fish due to mercury so a PFAS advisory would reflect no change. Flax Pond, for example, has a previous advisory of two meals per week for the general public, but the new PFAS advisory recommends one meal per week.

Mr. Nascarella ended his presentation with a list of resources for additional information which are listed as links on slide 15. The updated JBCC Waterbody Fact Sheet has all of the advisories for these waterbodies. The DPH website has an updated table where advisories were issued across the state.

Mr. Nascarella asked for questions. Mr. Dow stated he read a discussion online of the Sierra Clubs National Toxics Team which mentioned that Minnesota Pollution Control Agency had a fish PFOS level of 0.37 nanograms/gram which is an order of magnitude less than the Massachusetts level. Compared to the water levels on Cape Cod it appears that the PFAS accumulation is seven thousand times. Mr. Dow asked Mr. Nascarella to explain why Minnesota chose a safe level for PFOS which is just one of the four chemicals you analyze for and is much lower than Massachusetts DPH. Mr. Nascarella responded that it is an interesting point but that he is not aware of Minnesota's value so he can't comment on why they chose what they did. He said that DPH's technical support document, available online, provides the rationale for all of the values that they use and that he will look into the information Mr. Dow provided. Mr. Dow added that in Minnesota they used 0.05 parts per trillion for PFAS which is also much lower than Massachusetts in surface water, so why do they consider much lower levels in surface water in addition to fish and shellfish? Mr. Nascarella invited Mr. Dow to email him directly to share relevant links which he will look into.

Mr. Nascarella replied that he has not seen the Minnesota values but sometimes when comparing values there are other things they have to look at with respect to PFAS in terms of what they are comparing it to. Is it a sum of six analytes? Is it one analyte? What exactly is the parameter fit for a purpose – are they also developing a level that identifies when it is safe to swim during a swimming season or is it a value used for another purpose like, for example, a drinking water based value. Those are common reasons why levels in surface water may be different because the purpose of that standard may be different; but, not having seen it, Mr. Nascarella is hesitant to offer any other insight, but will take a look at the information Mr. Dow provided.

Mr. Dow commented that Pat Helder of Military Voices recently sampled Johns Pond and Ashumet Pond surface water for PFAS and his analysis of PFAS in Johns Pond was 62 ppt and 130 ppt in Ashumet Pond which DPH did not sample. The Ashumet Valley Plume emanates from Ashumet Pond in addition to places on JBCC. Mr. Dow is concerned that the high levels at Ashumet Pond require further analysis of surface water, fin fish and shellfish, and as the former Recreational Fisheries Coordinator at the Fisheries Lab in Woods Hole, should likely have levels exceeding the values that DPH has for concern and much higher than those in Minnesota. Mr. Nascarella responded that DPH's work did not cover Ashumet Pond so he cannot comment on that, but based on the information that they have gathered this past year, DPH is working with other state and federal agencies to conduct additional sampling this coming summer and build it into the program thus Mr. Dow's comment is timely and DPH will put it under consideration for additional sampling. Mr. Dow ended with encouraging DPH to continue their excellent work.

Mr. Cusak complimented DPH on the information and data available on the website. Mr. Cusak lives on Johns Pond and understands the assessment and rationale for safe swimming the numbers are off the charts compared to anything else. Mr. Cusak asked Mr. Nascarella why the levels are attributed to Johns Pond. Mr. Nascarella replied that unfortunately this surveillance work alone does not help identify where the source is or why the pond is so much different than other waterbodies. There is other surveillance in the state that identifies PFAS levels in rivers and streams across the state. The Air Force has also looked at waterbodies in the area that has also looked at PFAS levels. Collectively we are now just taking this information and trying to make sense of it and find out what are the contributions to these waterbodies, what PFAS are we seeing regulatory and what may help explain why somethings are higher in certain waterbodies. Mr. Nascarella said he is unable to answer Mr. Cusak's question specifically about Johns Pond. When we see levels in fish and surface water that are high as in Johns Pond, ascribed to the specific contaminant PFOS, so when that is the analyte in the surface water and you also have recreational fish in the waterbody, just by the physiochemical properties of that analyte, it does accumulate in the proteins of that fish easily, but why it is so remarkable different from other waterbodies, Mr. Nascarella does not have information on. Ms. Forbes also responded to Mr. Cusak and said that the higher concentrations in Johns Pond and Ashumet Pond are coming from the Fire Training Area on the base which is the primary source area. There are other sources of PFAS on base that flow into Moody Pond and Quashnet and Childs River. Because Ashumet Pond is downgradient of the Fire Training Area and Johns Pond is downgradient of Ashumet Pond, all of those surface waterbodies are being impacted by the Fire Training Area and AFCEC has been investigation this for a while and Ms. O'Reilly will be discussing it further in her presentation.

Mr. Pasakarnis from CC Commission commented that one of Mr. Nascarella's slides stated that the ponds that were sampled were largely expected to be impacted by PFAS based on their proximity to the base or other sources. Mr. Pasakarnis asked if Mr. Nascarella is aware of any other efforts by DPH or anywhere else in the state to look at background levels in other ponds and waterbodies that are not expected to be impacted so we have that as a basis as comparison. It seems like with the sampling going on now there are detections everywhere and perhaps that is to be expected given the low detection limits we are working with, so what meaningful backgrounds are there even in areas where there aren't known sources and how that compares to the results we are seeing. Mr. Nascarella clarified DPH decided to sample the waterbodies because they are in and around JBCC and each year they are asked to sample recreational waterbodies in and around the base which is where the list of sampled water bodies comes from. Mr. Nascarella said it has been brought up in many conversations in efforts going forward. MassDEP and USGS have done great work sampling and have sampled rivers and streams to obtain the background levels in the Commonwealth in surface water locations. DPH has plans this year to sample waterbodies that are not near any point sources of contamination to help evaluate these data.

**Agenda Item #3. Impact Area Groundwater Study Program PFAS Sampling –** *Mr. Ben Gregson, IAGWSP*

Mr. Gregson explained he would be updating the team on the work the Impact Area Groundwater Study Program (IAGWSP) has done to investigate PFAS occurrences in groundwater in the northern part of the base.

The IAGWSP has been conducting PFAS sampling since 2019, doing three rounds of sampling during that time. The work began as a due diligence effort to look at historic open burning/open detonation munitions disposal sites on the base. Those are sites that were in operation 25-50 plus years ago and have been identified as being primary sources of contamination from the explosive compound, RDX and the propellant/oxidizing compound, perchlorate. The sites are known source areas, where RDX and perchlorate have been detected in the groundwater and remediation efforts are underway. Because these sites were used for open burning/open detonation activities, there was a potential for firefighting foams, containing PFAS, to have been used at these locations during operations decades ago. The sites are located at Demolition Area 1 (Demo 1) and the J Ranges, which were defense contractor-operated test ranges in the southeast part of the base. A sampling program was built around the concept that, if the firefighting foams were used in conjunction with the other disposal activities in these areas, it is likely that PFAS contaminants would have been co-released and would be co-located with the RDX contamination and perchlorate contamination already identified in the plume. Therefore, sampling within the current treatment systems and existing monitoring wells, which had RDX and perchlorate detections, seemed to be the best approach. Mr. Gregson noted that there are no records to indicate that firefighting foams were used at these areas. However, the fire department conducted inspections of government contractors while they were working and they might have been on site during some of the activity, so it was worthwhile to look at these potential release sites.

In the first sampling round, IAGWSP collected samples from 10 treatment plants and 15 monitoring wells that were associated with explosives and perchlorate plumes in June 2019. They compared those results to the EPA health advisory for PFAS and PFOA, which is 70 nanograms per liter, and to the MassDEP groundwater MMCL standard for six specific PFAS compounds (PFOS, PFOA, PFHXS, PFNA, PFHPA and PFDA). Mr. Gregson explained that these are known as the "PFAS 6," which has a combined standard of 20 nanograms per liter.
Mr. Gregson pointed out the northern part of Joint Base Cape Cod on a map, also showing the RDX and perchlorate plumes. At this location, groundwater flows from east to west, towards Buzzards Bay. He also pointed out the location of the open burn/open detonation activities on the map. Sampling was conducted downgradient of that location.

Mr. Gregson then identified the Southeast Ranges on the map and explained that these were historically WWII-era training Ranges but, after that time, they were leased by defense contractors such as Textron and AVCO for munitions testing. There were a number of individual open burn/open detonation disposal sites that were used by those contractors. The IAGWSP looked at the J-1, J-2 North, J-2 East, and the J-3 plumes. Mr. Gregson noted that these areas are hydrogeologically at the top of the groundwater mound so groundwater flow is in a radial orientation. He stated that this is a complicated spot but the plumes reflect that groundwater flow as they flow away from the top of the mound, in a radial configuration.

Mr. Gregson provide a refresher of the 2019 sampling results: Seven of the 10 treatment plants were non detect for PFAS compounds, including all of the locations sampled at the Demo 1 and J-2 East plumes, as well as the J-2 N influent location. Low concentrations of PFAS (less than the MassDEP PFAS 6 standard) were detected at J-1 N, J-2 N and the J-3 Ranges. Mr. Gregson noted that the sampling effort was slightly complicated because two extraction wells were being blended into one treatment plant. Therefore the IAGWSP later resampled the individual extraction wells to see what the contribution of each one was and one was not detect. The other extraction well was 14 nanograms per liter, still below the state number. Monitoring well sampling results were either non detect or at very low concentrations for PFAS, except at

MW-163 at the J-3 Range, where the result was 14.4 nanograms per liter. The IAGWSP did an additional investigation there and Mr. Gregson said he would go into detail on that later in the presentation.

The next round of sampling was built on the first round to look more closely at monitoring wells in areas contributing to the treatment plants and some other areas that the IAGWSP wanted to investigate (e.g. the J-1 berm area, where 14 additional wells were sampled, the J-2 Range, the capture zone for the extraction well with the detection, and also at the source area, itself). Sampling was also done at the J-3 Range, with the 14 nanograms per liter detection at the demolition area.
The results of the 2020 sampling showed everything was below the 20 nanograms per liter PFAS 6 standard. The results at the J-2 Range were below the MMCL but there were some very low levels of PFHxS, below the 70 parts per trillion EPA standard and below the MassDEP PFAS 6 standard.
Mr. Gregson noted that some compounds were detected in the influent sample of the treatment plant that were not in the samples from the monitoring wells. He explained that those could be from some of the materials used to build the treatment plant.

At the J-3 Range/demolition area sampling, 11 wells were at concentrations of around/up to 15.8. At the former meltpour facility, which is a little further down gradient, 13 of 18 wells were below the MassDEP standard. Two locations (MW-143 and MW-197) were above the 20 nanograms per liter standard.

Mr. Gregson then moved on to the sampling conducted in 2021. He stated that the results from the J-2 Range looked "pretty good," but because that particular site is upgradient of a Co op Water Supply well (WS-2), the IAGWSP wanted to sample u, outside of the capture zone of the downgradient extraction well. The IAGWSP sampled a line of sentry wells that had been put in years ago for future monitoring purposes. Additional samples were also collected at the J-3 Range, where there had been two detections above the MMCL. The four extraction wells were also sampled individually.

For the 2021 sampling round, there were no detections at extraction wells. There were detections at the wells along Gibbs Road that were above the MassDEP MCL and PFAS 6 standards. In MW-330, there were detections in three screens of 55.8, 21.6, and 44.0. In MW-345, there was a detection of 72 in a deep screen. In MW-340, there was a detection of 32. These wells are located approximately 3.5 years traveling time upgradient of WS-2. So these wells are acting as additional sentry wells upgradient of the designated sentry wells. The IAGWSP provided the results to Mr. Mahoney, who is the Co op water supply superintendent. Mr. Mahoney stated that the water supply wells were sampled earlier this year and they were all non detect for PFAS compounds.

The J-2 and J-3 Range concentrations in MW-197 were similar to previous detections. MW-218, which is an old drive point on the shore of Snake Pond that was put in 20 years ago, had a really high result of 597 nanograms per liter, which is above the EPA PFAS standard. The detection was in a deep screen in that well. The sampling result from the middle screen was several times lower and the result from the shallow screen was below standards. Chemists looked more closely at the data and noticed that there were particles that clogged the extraction column during the analysis. Therefore, the IAGWSP centrifuged the sample to separate the sediment in the sample, which were fairly muddy. Mr. Gregson explained that after the separation and centrifuge, the results from the water portion of the sample were 17.5 for the PFAS 6 analysis and 5.7 for PFAS-PFOA.

Mr. Gregson said the IAGWSP is trying to determine how the sediment in that particular driving point is contributing to the higher numbers. However, the water results from that well, the water supply wells downgradient at Weeks Pond, and the J-well on base, are all below the standards or non detect for PFAS. Mr. Gregson moved on to the J-1 N plume sampling at the source area and near the two treatment plants. Nothing of concern was identified

Mr. Gregson showed the J-2 plume source areas, where previous sampling was around the main body of the plume. There were no levels of concern in those particular samples. On Gibbs Road, there are 2021 results above the MassDEP PFAS 6 standard. Mr. Gregson pointed out the wells on a figure. The wells were below the EPA standard. There was another well also below the MassDEP standard.

A sampling program is being developed with EPA and DEP to resample wells C7A and C4A, which are the water supply sentry wells, and to also sample some additional existing monitoring wells. Mr. Gregson stated that sampling had not been done yet at MW-65 and at three wells along the power line, immediately upgradient. Particle backtracking was done at the top of the mound and this identified a few more wells for the sampling program. Mr. Gregson stated that the odd thing about the detections is that they were in screens at different depths - from screens down at bedrock and then screens just below the water table. He explained it could mean that there are multiple sources further upgradient and then closer to these particular wells.

Mr, Gregson then presented the sampling results from the J-3 Range, where groundwater flow is from north to south, towards the pond. He pointed out two detections on a figure near existing RDX and perchlorate plumes with PFHxS in excess of the MassDEP standard. They are within the capture zone of existing extraction wells in that location. He also pointed out MW-218, which had the high level in the initial sampling that went away when the sediment was extracted from the sample.

Mr. Gregson explained that the next steps are to resample the wells long Gibbs Road to confirm those detections and sample the two sentry wells for WS-2. He reiterated that WS-2 had been recently sampled as part of the statewide program and was non detect for the PFAS compounds. MW-18, MW-48, MW-49, MW-55, and MW-63, all along Gibbs Road and power line Right of Way, will also be sampled. MW-128, MW-236, and MW-237 are further upgradient and will also be sampled. The IAGWSP will also be sampling effluent from a couple of the MTUs to make sure nothing is reaching the treatment system. He added that the sampling results will be reviewed with the regulators and subsequent next steps will be determined.

Mr. Gregson added the sediment from results from MW-218 just came in today with higher levels of contamination, but nothing really stands out as being unusual. The program will continue to look at particle backtracks, well construction logs, observations made during sampling, and data from AFCEC (FS-12 is nearby).

Mr. Gregson then asked if there were any questions. Mr. Goddard expressed concern with the 3.5 year lead time before reaching the water supply wells and asked if there was wellhead treatment, such as granular activated carbon) and, if not, could that be put in place.

Mr. Gregson replied that he did not think there was wellhead treatment on that well. He added that the next step of sampling the sentry wells, which are between the IAGWSP sampling detections and the water supply wells, will go a long way to informing how imminent any threat would be to the wells. He added that once that data is available, if there are elevated detections in those sentry wells, then protective measures would need to be explored for the water supply wells.

Mr. Goddard then asked if there was a treatment system in the source area that would prevent further migration. Mr. Gregson said there is no existing system to capture contamination at the source area.
Mr. Goddard requested that future discussions with Mr. Mahoney include the possible need for wellhead treatment to be procured and put in place rapidly, rather than reacting after-the-fact. He also asked for an update from Mr. Mahoney at some point.

Mr. Dow stated that contamination from the Ashumet Valley plume caused the closure of the Ashumet Valley public drinking water supply. As a replacement, a well in the Upper Cape Water Supply was designated to supply the quantity of water that was previously provided by that Ashumet Valley drinking water well. Mr. Dow asked which of the wells in the water supply Co op were part of the Falmouth public drinking water supply.

Mr. Gregson replied that he would need to research the answer to that question. He noted that there are three water supply wells on base as part of the Co Op. He explained that the well that the contamination is directly upgrading of is WS-2. No issues with the other two wells (WS-1 and WS-3) have been identified. In reference to percentage of water pumped at any one time from those wells, Mr. Gregson explained the system was designed with flexibility so that water can be pumped from one, two, or three wells at different rates. Mr. Gregson said that he would check with Mr. Mahoney to get more details on the actual contributions.

Mr. Goddard added that Mr. Dow's questions relate to his own questions and he reiterated his request for a presentation from Mr. Mahoney.

**Agenda Item #4. Emerging Contaminants Update –** *Ms. Mary O'Reilly, Jacobs*

Ms. O'Reilly gave an overview of PFAS and 1,4-dioxane standards for drinking water. In May 2016 EPA issued Final Lifetime Health Advisory (LHAs) values for PFOS and PFOA of 0.07 µg/L for each and combined. In October 2020, MassDEP issued a Massachusetts Maximum Contaminant Level (MMCL) of 0.02 µg/L for the sum of six PFAS. For 1,4-dioxane, EPA has a site-specific, risk-based remediation goal (RG) of 0.46 µg/L.

The sampling and response actions related to public/community water supply wells has included eight public/community water supply wells sampled by AFCEC with two having had PFOS+PFOA concentrations greater than the LHA. Two Mashpee Public Water Supply Wells (PWSWs) had PFAS above the MMCL for PFAS6 but below the LHA and both wells were taken offline and AFCEC is planning to install wellhead treatment. One Falmouth PWSW that had PFAS concentrations above the MMCL for PFAS6 but below the LHA, was taken offline and AFCEC is planning to install wellhead treatment. An Engineering Evaluation/Cost Analysis (EE/CA) and Action Memo (AM) are being prepared for wellhead treatment on the two Mashpee PWSWs, the Falmouth PWSW and connecting eight private wells to municipal water.

The sampling and response actions related to private wells included 119 private wells sampled with three private wells with PFOS+PFOA concentrations above the LHA. Thirteen residential point-of-entry systems were installed by AFCEC with four removed when connected to municipal water and six maintained by owners since concentrations decreased below the LHA. One residence is receiving bottled water from AFCEC and MassDEP is providing bottled water to additional residences with private wells that have PFAS concentrations above the MMCL but below the LHA. One hundred and eight total connections have been made to municipal water supply including 93 at Lakeside estates and 15 single-family residences. Ten private wells have PFAS concentrations above the MMCL but below the LHA. AFCEC is planning to connect 8 of these locations municipal water supply and the two remaining locations have concentrations expected to decrease below the MMCL with AFCEC continuing to sample until the concentrations are consistently below the MMCL. AFCEC completed installation of a water main and is planning to complete seven connections on Valley Farm Road where three wells have PFOS+PFOA above the LHA and the remaining four have concentrations above the MMCL but below the LHA. An EE/CA and AM were prepared for the three wells above the LHA and separate EE/CA and AM are being prepared for the four wells above the MMCL but below the LHA.

The Ashumet Valley Supplemental Remedial Investigation (RI) field program was completed between 2015 and 2021 and included groundwater, soil, surface water, sediment, private well, public water supply, and treatment system sampling. Source areas include the former Fire Training Area-1 (FTA-1) and former base Sewage Treatment Plant (STP); FTA-1 is the primary source for the PFAS contamination. The highest PFAS6 groundwater concentrations (131.11 µg/L) and PFOS (630 µg/per kilogram [kg]) and PFOA (240 µg/kg) soil concentrations were detected at the FTA-1 source area. The RI data indicate there is a

continuing source from soil to groundwater. Surface water samples were collected from 10 ponds/rivers with the highest PFOS (0.2 µg/L) and PFOA (0.059 µg/L) concentrations detected in samples collected from Ashumet Pond. DPH has evaluated these PFAS concentrations and concluded no risk of harm for recreational use of Ashumet Pond. 1,4-Dioxane groundwater contamination is very limited in extent and only three locations exceed the RG of 0.46 µg/L, and the highest concentration is 0.75 µg/L. 1,4-Dioxane was not detected in any soil samples. The Draft Supplemental RI report is in preparation and is scheduled for submittal to the agencies in March 2022. Ms. O'Reilly presented figures reflecting this data.

The Tanker Truck Rollover Sites RI field program was completed between 2018 and 2021 and included sampling of groundwater, soil, surface water, sediment, and private wells. The source of the PFAS contamination was the application of aqueous film-forming foam (AFFF) as an emergency response to two tanker truck rollovers in 1997 and 2000. PFAS groundwater contamination extends from the TTRS source areas near and at the Route 28 rotary to Shore Road and discharges into surface water at Hen Cove and Red Brook Harbor. The highest PFAS6 groundwater concentrations are detected at the rollover source areas at 14.774 µg/L. The highest PFOS (570 µg/kg) and PFOA (17 µg/kg) soil concentrations are detected in the median strip on Connery Avenue where one of the tanker trucks overturned. The RI data indicate there is a continuing source from soil to groundwater. Surface water samples were collected from 10 freshwater ponds/wetlands, Conservation Pond, Hen Cove, and Red Brook Harbor. The highest PFOS (2.8 J µg/L) and PFOA (0.026 µg/L) concentrations were detected in Turtle Pond which is located on-base to the south of Connery Avenue. Cranberries were also sampled by the MassDEP and PFAS were not detected, and MassDEP is also planning to sample shellfish in Hen Cove. The Draft RI report is in preparation and is scheduled for submittal to the agencies in January 2022. Ms. O'Reilly presented a figure reflecting this data.

The LF -1 Supplemental FS is being completed to evaluate remedial alternatives for groundwater for 1,4 -dioxane and PFAS. The RG of 0.46 µg/L for 1,4 -dioxane and the PFAS6 MMCL of 0.02 µg/L will be considered in the Applicable or Relevant and Appropriate Requirement (ARAR) evaluation for groundwater. Three alternatives were evaluated for PFAS and 1,4 -dioxane: no additional action; continue with existing remedial system, and continue with existing system supplemented by two additional extraction wells. The Draft Supplemental FS report is in preparation and is scheduled for submittal to the agencies in December 2021. Ms. O'Reilly presented two figures related to this data.

Mr. Dow commented that the Ashumet Valley plume in the past was represented as a narrow line that went straight north and south and now is a big blob that includes Mashpee and Falmouth and asked that the if the FTA is the major source area for PFOS and PFOA which appear to be the major contaminants in the plume, but Johns Pond and Ashumet Pond are much larger in area and water above those sediments are contaminated with PFOS and PFOA, is that why the plume went from a narrow line to a big blob? Ms. O'Reilly responded that the PFAS coming off the FTA discharge into Ashumet Pond so the groundwater recharges the surface water in Ashumet Pond. All of the kettle ponds have a hinge line so the upgradient side of the hinge line of the line recharges the pond and the downgradient side surface water recharges the aquifer. She continued that Ashumet Pond has groundwater contaminated with PFOS entering it and the surface water recharges the aquifer downgradient that then discharges into Johns Pond and Johns Pond recharges the aquifer downgradient so they are essentially source areas to the groundwater contamination and the location of the ponds are the reason why this area of contamination is so large. The VOC plume is volatile so it is not detected in the pond and the VOC contamination migrated in the groundwater. There is also PFAS that follows the same path as the VOC plume that is not discharging into the pond. The contamination that discharges into the pond is why the plume is so much larger.

Mr. Goddard had suggested an alternative firefighting foam that was plant based and asked what the base firefighters are using to put out fires on the base? Is it the same AFFF? Do they meet military standards or has DoD or EPA come up with alternative specifications and alternatives that will not contribute to future events downgradient? Ms. Forbes responded that the MassDEP was involved with changing out foam in the fire departments and asked if a MassDEP representative would like to respond. If not, Ms. Forbes can

contact the fire department and get that information. Mr. Pinaud, MassDEP, addressed Mr. Goddard's question and stated that the Otis Fire Department participated in the takeback program organized by MassDEP for the foam what they had, but does not know what they replaced the foam with. Mr. Goddard requested the confirmation of what the fire department is using as an action item with the understanding that the alternatives to AFFF have tradeoffs.

Ms. O'Reilly continued the presentation with the Expanded SI field program for the Flight Line Area Sites which was completed in December 2020 and the Final Expanded Site Inspection Report for Per- and Polyfluoroalkyl Substances at the Flight Line Area Sites, Joint Base Cape Cod, MA was submitted in August 2021. Six Flight Line Area sites are proceeding to an RI and will be managed collectively as the Flight Line Area Operable Unit due to their close proximity and include the Air National Guard Motor Pool, Former Building 118 - Runway 32, Former Fire Department Building 122, Coast Guard Hangars 3170 and 3172, Lower 40 Ramp Area, and the Army Helicopter Hangar 2816. The Draft RI Work Plan for the PFAS at the Flight Line Area Operable Unit is in preparation and is scheduled for submittal to the agencies in December 2021. A No Further Remedial Action Planned (NFRAP) Decision Document (DD) for the Wastewater Treatment Plant (WWTP) infiltration bed site is in preparation and is scheduled for submittal to the agencies in January 2022. A figure was presented showing particle tracks from the Flight Line Area Sites. The red dots on the figure are for PFOS and PFOA concentrations above the LHA, the yellow dots are detections below the LHA, and the green represents non-detect. For the Expanded SI, PFOS/PFOA concentrations were compared to the LHA but going into RI they will be compared to the PFAS6 MMCL.

Ms. Forbes added that the reason AFCEC is suggesting closing out the WWTP bed site is based on the inspection and sampling that has been done, during which it was determined that the primary sources of the PFAS in the WWTP are the two fire departments which are PFAS sites AFCEC will be investigating further. The former fire department Building 122 and the new fire department building which is part of the Lower 40 Ramp Area are the main contributors to the WWTP contamination. AFCEC is streamlining the investigation by closing out the WWTP and focusing on the sources of that contamination.

The path forward includes continuing the AV private well monitoring program and preparing the Draft Supplemental RI report, continuing the TTRS private well sampling program and mitigation steps (i.e., bottled water and maintaining filter systems) until homes are connected to the Bourne Water District municipal supply and preparing the Draft RI report, submitting the Draft Supplemental FS Report for 1,4-Dioxane and PFAS at LF-1, submitting the Draft RI Work Plan for the PFAS at the Flight Line Operable Unit and begin Flight Line Area Operable Unit RI field program, submitting the NFRAP DD for the WWTP infiltration bed site, and presenting sample results and field program updates to the agencies at Technical Update Meetings and to the public at future JBCC Cleanup Team Meetings.

Mr. Goddard asked in response to what Ms. Forbes had said that if the fire department buildings, including the new one, are affecting the wastewater treatment plant, is there some kind of protocol for washing down equipment in the wash bay or the trucks or the residual tanker liquids they are discharging into the sewer system? Ms. Forbes replied, yes. Mr. Goddard stated that this again emphasizes finding out what the fire departments are using. Mr. Goddard asked if the fire departments are using the protocols now in practices they do for training and do they wash it down into the treatment plant system and not out into the environment per se? Mr. Goddard asked Ms. Forbes to look into the protocols.

Ms. Forbes introduced the next two slides as a response to action items Mr. Goddard had requested from the last JBCCCT meeting for soil treatment options for PFAS.

Ms. O'Reilly presented the PFAS treatment options for soil. Conventional options include capping which includes placing a cover over contaminated material to prevent migration of precipitation into and migration of leachate out of a mass of contaminated soil, disposal with a treatment cost estimate of $80 - $320/ton for non-hazardous versus hazardous excavation which includes transport offsite to a permitted landfill, incineration with a treatment cost estimate of $600 - $800/ton and includes burning PFAS soils at

temperatures high enough to destroy contaminants (>1,000 °C) but complete destruction has not been proven yet, and stabilization with a treatment cost estimate is $150 - $200/ton and includes mixing waste with binding agents like clays, or other proprietary blends to make them less likely to be released into the environment to which questions remain about permanence. The estimated treatment and/or disposal unit costs are provided for comparison purposes and do not include costs associated with planning/permitting, engineering, excavation, field oversight, sampling/analysis, and site restoration.

Developing options for PFAS treatment in soil include thermal desorption with a treatment cost estimate of $200 - $350/ton which utilizes heat to increase the volatility of contaminants so they can be separated from the soil matrix and off-gas would require treatment, and size segregation/soil washing with a treatment cost estimate of $40 to $400/ton for sieving versus washing which includes the removal of coarse materials through mechanical means or separating clays and fine organic matter through rinsing, chemical separation, etc. and liquid treatment would be needed.

Innovative Ideas options for PFAS treatment in soil include biopiles which is an ex situ, solid-phase biological process using living organisms such as bacteria, fungi or protozoa for converting contaminants to low-toxicity byproducts, and injectable material which uses injection of colloidal activated carbon, polymers, or combinations to prevent migration. The estimated treatment and/or disposal unit costs are provided for comparison purposes and do not include costs associated with planning/permitting, engineering, excavation, field oversight, sampling/analysis, and site restoration.

Mr. Goddard noted that these options are enormously expensive and experimental and as you get into source areas to remove soils, this is an issue nationwide at airports where they have to dig up runway soils and there are limited options and understanding that as we get into the trade-offs as what to do with the source areas that you are excavating will be helpful. The presentation has posted to http://jbcc-iagwsp.org/community/impact/presentations/mmrp_update_jbccct_120121.pdf and https://www.massnationalguard.org/JBCC/afcec.html.

Mr. Dow shared that the Sierra Club Toxic Action Team has a fact sheet on dealing with PFAS in solids.

**Agenda Item #5. Military Munitions Response Program Status Update (MMRP) –** *Ms. Nikki Wagner, EA Engineering, Science, and Technology, Inc.*

Ms. Wagner presented the background of MMRP at JBCC. AFCEC has been conducting investigation/remediation at 10 munitions response areas (MRAs), two of which are closed, at JBCC under the MMRP. As a result of previous military training, MMRP sites may contain munitions and explosives of concern (MEC), discarded military munitions (DMM), and/or munitions constituents (MC). The MMRP follows the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan. JBCC's Federal Facility Agreement applies to these MMRP sites but does not apply to operational ranges, operating storage/manufacturing facilities, or to permitted treatment and disposal facilities. Ms. Wagner reviewed the MMRP Process on the third slide of the presentation. A figure was presented depicting the MMRP sites at JBCC.

Ms. Wagner reviewed the current status of MMRP Sites. The Skeet Range Remedial Investigation (RI) and Feasibility Study (FS) for lead are in regulatory review. AFCEC is conducting a supplemental RI/FS at the Otis Gun Club. AFCEC is preparing the planning document for regulatory review detailing the means and methods of the supplemental RI including a wetland delineation; additional soil, sediment, and surface water sampling; a lead pellet study; and earthworm tissue sampling. The planning document will also detail how the data will be used in a baseline ecological risk assessment to evaluate effects of site-specific lead concentrations on ecological receptors. AFCEC is also responding to regulatory comments on the Mock Village Record of Decision.

Ordnance Area 1 Supplemental CSE Phase II Report is in regulatory review. AFCEC recommends no further action (NFA) and site closure based on investigation findings (no munitions discovered after completing 100% digital geophysical mapping across the site). The Old Grenade Courts is also in the Expanded CSE Phase II Investigation with the planning document for expanded investigation in regulatory review which details the means and methods for the MEC investigation including digital geophysical mapping and intrusive investigation of anomalies. Field work is scheduled to commence February/March 2022. The Expanded investigation goal is to achieve site closure. The Old K Range Draft FS is in regulatory review.

The Former Ammunition Supply Point (FASP) - East No Further Action was rescinded by the EPA and the path forward is being determined with Regulators. The FASP – West No Further Action was rescinded by the EPA and the path forward is being determined with Regulators. The Otis Target Butt and Former Otis Bomb Storage Magazines sites have been closed.

**Agenda Item #6. Air Force Civil Engineer Center Community Involvement Plan Update –** *Mr. Douglas Karson, AFCEC*

The Community Involvement Plan (CIP) history began in 1989 when the Massachusetts Military Reservation (MMR), now Joint Base Cape Cod (JBCC), was added to the USEPA National Priorities List (NPL) under the Superfund program. In1991 the Federal Facility Agreement (FFA) issued and the first issued for MMR, jointly produced by Air Force, USEPA, and MassDEP and was attached to the FFA. In 2000 the CIP was revised, in 2003 the CIP was updated, and in 2010 the CIP addendum issued. In 2022 the CIP revision will be issued after a 30-day public comment period and review of comments.

The CIP questionnaire was issued on July 27, 2021 to hundreds of community contacts and other stakeholders (town, military, regulatory) that AFCEC had correspondence with during the past few years. Due to significant interest in the survey and the ongoing machine gun range project at JBCC, the window to provide input was extended to September 10th and announced in the local papers. A total of 60 responses were received during the open submission period. Some respondents did not answer all 18 questions.

The makeup of the respondents of the questionnaire includes 78% from Falmouth, Mashpee and Bourne and 45% living one to five miles from JBCC. Eighty-three percent of the respondents were aware of AFCEC's environmental cleanup program. The major concerns voiced were for drinking water, contamination, water quality of area ponds/rivers/oceans, cancer, negative health effects, natural resources damages, and cleanup progress. Fifty-eight percent of the respondents said they do NOT think ponds are safe for recreational use, 20% believe they are safe, and the rest undecided. Seventy-nine percent of the respondents were aware of the newer contaminants 1,4-dioxane and PFAS and 51% were aware of AFCEC's webpage. Thirty-three percent of the respondents stated the material on AFCEC's webpage is understandable, 27% say somewhat understandable, and 24% were not familiar with it. The Cape Cod Times, Falmouth/Mashpee/Bourne Enterprise Newspapers, email, online public meetings were the top ways people like to get information followed by in person meetings, mailings, word of mouth, radio (WCAI-FM). Approximately half of the respondents did not know who to contact about the environmental cleanup program. Sixty-two percent of the respondents stated awareness of the JBCC Cleanup Team, 33% of respondents did not feel the Air Force offers sufficient public participation opportunities while 12% do (17% were undecided and 25% were not familiar with public participation opportunities). Sixty-two percent of the respondents were NOT confident of AFCEC taking all necessary response actions to protect human health, however 42% rated the overall success of the program as successful or higher with 34% responding less than successful and others "don't know." Fifty of 60 respondents requested addition to AFCEC's email list and were added. Numerous hand written comments were submitted, most on the Army's proposed machine gun range.

Mr. Dow stated that when he tries to explain why the Central Impact Area plume is under the EPA and the multi-purpose machine gun range is under the Environmental Management Commission (EMC) for the active ranges, there is a lot of confusion between the two programs and they each have their own outreach. He commented it would be nice if there would be an explanation as to why some are under the EMC and others are under the EPA Safe Drinking Water/CERCLA cleanup. Mr. Dow's experience is that people confuse the two and it is not a useful way to look at the situation. Mr. Karson agreed that it is confusing to the general public with different military entities, different projects and different outreach. AFCEC follows CERCLA and has a CIP that is produced in cooperation with the EPA and the MassDEP, but AFCEC also understands that there is a lot of concern in the community regarding who to contact and how to get information, so that will be taken into consideration in further discussions with the EPA and MassDEP.

Mr. Goddard stated that he finds that 62% of respondents not being confident in AFCEC taking all necessary response action to protect human health is discouraging, disappointing, and he doesn't believe it is true. Everyone works really hard including remediation program managers, state, federal and citizen advisors. There has been a lot of work done to protect human health. Mr. Goddard commented that it is major problem that they many people think it isn't being done properly. Mr. Goddard said it needs to be addressed – maybe in a follow-up Cape Cod Times article, but is that a reaction in relating the two programs as Mr. Dow was alluding to. He said that AFCEC should delve into it deeper and rectify that because people need to feel confident that this program is doing what it needs to do be done and it actually has been quite a success over the years in protecting the environment, cleaning up areas and protecting drinking water supplies. The Water Supply Manager needs to assure that the hard fought areas that we have for the new supply wells are protected – even if it is early. Mr. Goddard also commented on the result that 50% of respondents don't know where to go for information on the program and maybe that is related to why they don't feel confident in the success of the program. He said that even though stakeholders are involved in each milestone, a person in the public may not know when a major system is closed down because it has been cleaned up or the source area has been remediated. Mr. Goddard asked if the boards of health and town websites could be a way to connect the public with for an example a link on the select board, health agent or water supply webpages to make sure there is an easy link for the public to access. Mr. Karson agreed that he is not comfortable with the statistic and that he discussed the range project further in this presentation.

Mr. Karson summarized that in general, the survey was effective at identifying concerns, levels of knowledge, and how best to communicate with the public. The issue of the machine gun range may have had an impact on the surveys as many of the commenters provided input solely on the range project and subsequently gave low scores on several questions related to success and trust/credibility for the AFCEC cleanup program. How much this affected the ratings is unknown. A summary of the questionnaire results has been provided to the other military agencies on JBCC to assist with community involvement outreach they may pursue in the future.

Mr., Goddard suggested the annual report be distilled down to show a larger time frame from where we were 20 years ago to where we are now and getting the media and social media – MassDEP has a Twitter account. Show people the success the program has had and give people the confidence in the program.

Mr. Karson summarized that more outreach is needed regarding the recreational use of waterbodies near JBCC as the majority of respondents do not believe the ponds are safe to use for recreation, contrary to Massachusetts Department of Public Health guidance. In addition to the Enterprise newspapers for advertisements, the Cape Cod Times will also be utilized. (This was done for the JBCCCT meeting on December 1, 2021). WCAI – FM has been added to the news media email list. The email notification list for additional stakeholders will be increased and all respondents who indicated to be added to the AFCEC email notification list were added. There will be more focus and outreach to address the top concerns: drinking water, contamination, water quality of area ponds/rivers/ocean; cancer, negative health effects; natural resources damages, and cleanup progress. Increase awareness of AFCEC's webpage for more cleanup information along with whom to call with questions. A paid advertisement, news releases and

emails periodically with contact information would be prudent. Social media did not return a strong response and thus will not be pursued for outreach other than monitoring local environmental groups. AFCEC will make itself more available to local groups such as in Pocasset and Falmouth recently where AFCEC presented online updates. Each respondent has been emailed with confirmation of receipt of submitted form and addressing any specific questions raised related to the AFCEC cleanup program.

Mr. Lim, EPA, responded to Mr. Dow's question on what the different programs do. By the public's perspective the environment is the environment, but the impact area history goes back into the 90s when the EPA told DoD they had to clean up and investigate past contamination. With regard to the machine gun range, Mr. Lim shared the regional office released a press release today on EPA's Sole-Source Aquifer Review related to the machine gun range which states that the EPA will be holding public involvement in the spring of 2022. Mr. Lim shared the link to this press release. Mr. Lim works on the Superfund investigation of the cleanup with the Air Force and with Jane Dolan, EPA, on the Impact Area Groundwater Study Program. Mr. Lim said that the sole-source aquifer review regarding the machine gun range is being conducted by another group within the EPA.

Mr. Karson added that AFCEC deals with town officials, homeowners and so on a daily basis such as getting access to wells and hooking up homes to municipal water, and those people did respond, but there were a lot of people Mr. Karson has not met or interacted with who read about the survey and either called or requested the survey from the website. Further discussions need to be held as to what needs to be amended or changed and what activities will address these issues going forward.

Mr. Cusak said this is the essence as to why he has joined the team and wants to emphasize what Mr. Goddard said as to the public is not aware of to the level of detail or the volume of work or the expenditure of funds that goes into this over the last 30 years. Mr. Cusak verified that he also has had a difficult time trying to ferret out information even though that is a strong point of his. He stated when we try to translate what the effort of the body of work is to the general public and is it relevant, it should be socialized up. He added that having links on the neighboring town websites would be a place to start. Mr. Cusak used the town of Mashpee as an example when they posted the expansion of the Commons on the website and it received a lot of responses from the public. Mr. Karson responded that AFCEC has over the years provided information to the towns including sampling results on local ponds, and in annual Summary Letter Reports for each of the plumes. Mr. Karson agreed that putting the information on town websites would be a benefit to the base. Mr. Cusak added that it is all about the aquifer and maybe we can disseminate information not necessarily with tables and graphs, but something similar to what DPH recently put out on waterbodies.

Ms. Donovan, MassDEP, shared a historical perspective. The issue with people not knowing where to go to is not a new one and there has been several attempts over the years to chip away at that, and it depends on the changing of the guard so to speak and different management structures. At one point in time there was a central office so that people could call one number and say "Here's my issue, tell me where to go". That has morphed into different programs and it doesn't serve the purpose it was originally set up as. The other piece is that a while back the Air Force and Impact Area Program did a joint CIP. JBCC is not your average military base because there are so many different people that work and have responsibilities on that base so the Air Force and the Impact Area did a joint CIP to have one document on the cleanup programs. There was a decision not to do that anymore. Ms. Donovan continued that there are several ways to deal with this issue and maybe we should revisit some of the things we tried to do in the past. The public looks at it as one base even though there are a number of programs her, and they just want to get their answers as quickly as possible. Having several different plans from different groups does not solve that problem. Mr. Karson agreed and said that could be discussed in a meeting with stakeholders. Mr. Goddard and volunteered to be a part of that discussion as he has had previous experience as the chair of the Public Information Team when out in the neighborhoods drilling wells and this separate distinct team existed just for these issues where protocols were established. The state getting a lot of upcoming attention with bridge work and infrastructure gives us an opportunity to educate a whole new generation.

Mr. Karson finished his presentation with the path forward which involves continuing to discuss findings with USEPA, MassDEP, and DPH and formulate changes to the Community Involvement Plan, conducting a 30-day public comment period on the revised draft CIP when it is issued in 2022, sending paid advertisements and emails to stakeholder email lists, and to consider all comments received and then prepare a responsiveness summary to all comments submitted during the public comment period and include it in the Final CIP. The Final CIP will be available on the AFCEC webpage and online administrative record. It will also be distributed to local libraries, and an email a notice of availability to AFCEC's stakeholder email lists including the news media.

There were no more questions and the meeting was adjourned.