Naval Facilities Engineering Command Southwest
San Diego, CA

Final

Restoration Advisory Board (RAB) Meeting Minutes

Former Mare Island Naval Shipyard
Vallejo, California

January 25, 2018

Approved for public release: distribution unlimited
The Restoration Advisory Board (RAB) for former Mare Island Naval Shipyard (MINS) held its regular meeting on Thursday, January 25, 2018, at the Mare Island Conference Center, 375 G Street, Vallejo, California. The RAB meeting started at 7:02 p.m. and adjourned at 8:57 p.m. These minutes contain a transcript of the discussions and presentations from the RAB Meeting.

RAB Community Members in Attendance:
- Myrna Hayes (Community Co-Chair)
- Carol Philips
- Paula Tygielski

RAB Navy, Developers, Regulatory, and Other Agency Members in Attendance:
- Janet Lear (Navy Co-Chair)
- Valerie Harris (Navy Lead Remedial Project Manager)
- Brooks Pauly (Navy Remedial Project Manager)
- Nick Shih (Navy Remedial Project Manager)
- Gavin McCreary (Department of Toxic Substances Control [DTSC])
- Elizabeth Wells (San Francisco Bay Regional Water Quality Control Board [Regional Water Board])
- Erin Hanford (City of Vallejo)
- Dwight Gemar (Weston Solutions, Inc.)

Community and Other Guests in Attendance:
- Daniel Boone
- Arthur Gonzalez
- Fred Ousey

RAB Support in Attendance:
- Carolyn Hunter (Tetra Tech)
- Kathleen Soloaga (Stenographer)
- Wally NeVille (Audio Support)

I. WELCOME AND INTRODUCTIONS (Myrna Hayes [Community Co-Chair] and Janet Lear [Navy Co-Chair])

CO-CHAIR LEAR: All right. Well, let's go ahead and get started, everyone. Welcome to the Mare Island Restoration Advisory Board meeting. We'll start the meeting with introductions. I'm Janet Lear, I'm the Navy Co-Chair.

CO-CHAIR HAYES: And I'm Myrna Hayes, and I'm the Community Co-Chair and I live in Vallejo.

MS. TYGIELSKI: I am Paula Tygielski, community member of the Restoration Advisory Board and a resident of Benicia.
MS. PHILLIPS: Hello, I'm Carol Phillips. I am a community member on the RAB and I live in Vallejo.

MR. McCREARY: I am Gavin McCreary with the Department of Toxic Substances Control.

MS. HANFORD: I am Erin Hanford with the City of Vallejo.

MS. WELLS: I am Elizabeth Wells with the San Francisco Bay Regional Water Quality Control Board and I live in Berkeley.

MR. GEMAR: Dwight Gemar with Weston Solutions. And I used to live on Mare Island a lot, kind of in the trailer there by the river.

MR. BOONE: Daniel Boone, Mare Island resident.

MR. SHIH: Hi, my name is Nick Shih. I am a Remedial Project Manager with the Navy.

MS. PAULY: Brooks Pauly, Remedial Project Manager with the Navy.

MR. OUSEY: Fred Ousey, owner, Enviro-Tech Services.


MS. HARRIS: I'm Valerie Harris, the Lead Remedial Project Manager with the Navy.

CO-CHAIR LEAR: We'll jump right into our first presentation of the night, which will be given by Brooks Pauly with the Navy. She is going to update us on the status of the Production Manufacturing Area (PMA) Munitions Response Program (MRP) Remedial Investigation/Feasibility Study (RI/FS).

II. PRESENTATION (Brooks Pauly [Navy Remedial Project Manager]) Status of the Production Manufacturing Area Munitions Response Program Remedial Investigation/Feasibility Study

MS. PAULY: Thank you for that introduction, Janet.

So good evening, everyone. As Janet mentioned, I am Brooks Pauly, a Remedial Project Manager with the Navy, and tonight I will be giving an update on the Production Manufacturing Area Munitions Response Program Remedial Investigation/Feasibility Study.

Some of you may remember that I presented the Proposed Plan for Investigation Area F1 last year. This presentation is about the same site, but it's focused on the munitions cleanup there. The munitions cleanup is a step behind the regular chemical cleanup for reasons I will describe later. There will be time for questions at the end, but please feel free to ask me any questions as we're going along, as well.

Okay. So, as usual, I will give you the quick frame-up of our agenda: we'll do the usual site location and history for people who don't know the site as well as others, I will talk about the current and future site use, and then talk about the difference between the two programs that I mentioned when I first introduced the topic tonight, and where we are in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. So I will do a little overview of the whole process too and then what goes into a Remedial Investigation/Feasibility Study. There is the process of actually doing the remedial investigation and then there is the remedial investigation document, and I will talk about those two parts.
Another thing we'll do is develop a conceptual site model and identify the chemical characteristics of energetic compounds that are associated with munitions items. So the conceptual site model for us would be the potential impacts from munitions at the site, and then the relevant chemical characteristics of those energetic compounds that are inside the munitions. We use the conceptual site model to understand the site and then design various investigations.

So I will talk about some of those investigations, key ones, that is, and then get into the nature and extent of the contamination at our site, and a summary of the risks from the contamination. In Slide 2, everything above that line is related to the remedial investigation, and everything below that line is related to the feasibility study.

In the feasibility study, we develop the remedial action objectives and preliminary remediation goals, summarize the various alternatives that we come up with, and then evaluate those alternatives, and then I will give you a summary of our preferred alternative -- in this case, it's one thing -- and then the next steps and we'll talk about our schedule.

So this is our site location on Slide 3. As you can see on the map -- actually, in this tiny little map that's at the corner left side of the slide and also on your handouts, which you should have 11-by-17 handouts for all of our big figures, in the lower left-hand side you can see that our site, the Production Manufacturing Area, also known as Investigation Area (IA) F1, is located in the southeastern corner of Mare Island. It's approximately 62 acres.

So, as I mentioned, the site is also known as Investigation Area F1 and is where munitions were manufactured and stored. Munitions were loaded and unloaded at the piers.

I hadn't mentioned this, but some of you know that Mare Island became a shipyard in 1854 and munitions production started in 1857.

The building that you're seeing here on Slide 4, Building A258, was a munitions warehouse, and it also had parts degreasing and paint booths and other things. It wasn't a production building.

But then by 1973, the munitions production in this area ceased. And by 1975, munitions processing and storage also ceased, so many of the buildings were converted not just to storage of other things, but even some of them were office space.

Okay. As for current and future site use, currently the site is not used. It's maintained as an industrial site. Sometimes maintenance workers from the Navy or the City of Vallejo or Island Energy come and check on electrical substations, towers and things, and perform basic site maintenance. We currently maintain it as an industrial site by clearing vegetation periodically for fire protection.

The future uses are more interesting. They are the conservation area and the wetlands, which you can see here in this yellow area that we have labeled Subarea 6; and then the industrial area, which is the light purple area here; and then the portion of our site here in green that's going to be part of the regional park.

Okay. So it's one site with two names. And it has two names because there are two clean-up programs, as I mentioned, under the CERCLA program, or the CERCLA process, I should say. Those include the Munitions Response Program, which you can see in green on the left-hand side of Slide 6, and the Installation Restoration Program.

So when we're talking about the PMA, we're talking about the munitions side of the cleanup. And when we're talking about IA F1, we're talking about basically everything but munitions, so
things like solvents for degreasing, petroleum hydrocarbons, and metals from things other than munitions.

And then under the Munitions Program, you can see it's for actual munitions items, metals that may have come from munitions, and energetic compounds used inside the munitions.

Okay. I promise to give you a quick overview of the Comprehensive Environmental Response, Compensation, and Liability Act process, and will try to make this quick. It's maybe not the most exciting thing, but it kind of frames where we are in the process, just so you know where we are and where we're going.

In the past, we've done preliminary assessment and site investigations, and that's the first box up here with the star on it. And as I mentioned, we've done some interim removal actions in the past. That's the second box and that can happen before we do the official Remedial Investigation/Feasibility Study, which is our current phase of the CERCLA process.

After the RI/FS, we would go to the next part, which is here, the Remedy Selection and Proposed Plan/Draft Remedial Action Plan phase. It is that phase that we were covering with our public presentation last year when I talked about the IA F1 Proposed Plan. That phase is where we tell the public what we are going to be proposing, what alternative we've picked, and then get public input. That happens after the RI/FS.

Similarly, the Record of Decision/Final Remedial Action Plan document comes after that, and is the decision document.

And then that brings us right into the Remedial Design and Remedial Action. In the case of the munitions program, we are just going to have land use controls for this site. But for the IA F1 site, we're actually going to need to do some removals to remove those risks, and that will be part of that Remedial Design/Remedial Action. But, again, tonight we're just focused on the munitions.

And lastly, the phase that we're all trying to get to is the Long-Term Monitoring/Operation and Maintenance, if this is needed for the site, and getting to Response Complete and Site Closure so that we can get to the Navy's ultimate goal, which is cleaning up the site so that it can be transferred and used for its new future use, as we discussed.

So what is in a Remedial Investigation/Feasibility Study? As I mentioned, there are sort of those two parts. You saw the quick description on Slide 7, but the Remedial Investigation is primarily an assessment of the nature and extent of contamination and the risk that is associated with that. We want to know what we're dealing with, where it is, and then what kind of risk it could entail for people. So as I mentioned, one document, two distinct parts.

The Feasibility Study is done once we actually understand the site and understand the risk. We want to come up with remedial action objectives, which typically are developed to reduce the risk; and then the preliminary remediation goals, which oftentimes are numerical values, but they can be other things as well. Then we'll have a summary of alternatives that we think could meet these goals, and we do an evaluation through a specific process that I will talk about to evaluate the remedial alternatives, and then we come up with a summary of our preferred alternative. So that's basically the Feasibility Study portion of the process.

Our site, as I mentioned, is the munitions site. In order to begin any site investigation, the Navy creates the conceptual site model of how, in this case munitions and munitions constituents,
metals, and energetic compounds could enter the environment. It's done through records review, interviews with people who worked at the sites, looking at the site, doing preliminary site visits, and things like that.

And we found out, not surprisingly as many of you know, this site was used for projectile and rocket warhead assembly and breakdown, propellant loading (powder bags, cartridge cases, and things like that), munitions refurbishment, and limited storage.

But we have also discovered the ways that the munitions items entered the environment here. They were sometimes lost around the piers or sometimes buried in the upland areas. We found records of that and then our investigations confirmed that.

Yes, Myrna?

CO-CHAIR HAYES: Uplands is a little concerning because -- maybe you can explain what you mean by uplands versus the land that our preserve is currently on. That's super upland? Or when you're talking about the upland, are you talking about “non-tidal area” uplands?

MS. PAULY: Right.

CO-CHAIR HAYES: Because I think that's important to clarify that.

MS. PAULY: Absolutely.

CO-CHAIR HAYES: Because you're saying you have kind of a treasure hunt or a hide-and-seek or something, you know, in uplands, and that could make people concerned that it's in our park.

But if you could just clarify what uplands means to you.

MS. PAULY: For the purposes of this site, the uplands are the areas that are not the wetlands.

So it's easy to see the wetlands here in sort of yellow. I guess it's the -- this slide has a lot of yellow and what looks like yellowy-green, but this area is the wetlands. There's a little bit down here, but essentially anything in here is the uplands.

Does that make it more clear?

MS. HAYES: (Nodding head)

MS. PAULY: Okay, thanks.

Okay. So, again, continuing with the conceptual site model and chemical characteristics of energetic compounds on Slide 12. Certain buildings at our site handled energetic compounds, and some of those buildings had to be decontaminated when we went in and did the initial visual inspections and things like that.

Some of the buildings had to be removed. For instance, Building A216 -- there were a couple of locations where energetic compounds were found at the ground surface. There was a little bit of picrate at one location, and some nitrocellulose.

CO-CHAIR HAYES: I would actually beg to differ with you. There wasn't just a little bit of picrate, there was a lot of picrate, enough that they took the whole building down.

MS. PAULY: Oh, I think -- are you maybe thinking about Building A216?

CO-CHAIR HAYES: No, I am not, because picrate wasn't in there. RDX [1,3,5-trinitro-1,3,5-triazine] was in there.
MS. PAULY: Okay.

CO-CHAIR HAYES: This is before you were born, I think. It was in the early 1990s. They took an entire building down that had -- Paula remembers this. The yellow was that deep in the ventilation systems (indicating) and was in the drains, and they very carefully took the whole building down.

So there wasn't just a little bit of ammonium picrate.

MS. PAULY: Myrna, you're making me blush saying I wasn't born in the 1990s.

CO-CHAIR HAYES: Well, you know, I mean, it's kind of ...

MS. PAULY: But, yes, they were -- there was removals that have happened over the years, exactly. And --

CO-CHAIR HAYES: I mean, I am not trying to disagree with you or diss you, either one. I'm just saying that there was a lot of ammonium picrate at one place.

MS. PAULY: And that was exactly why the Navy came in and did those removals, because something like that can be an acute hazard as opposed to just like a toxicity hazard. Because you could have the potential for explosive detonation.

CO-CHAIR HAYES: And Building A216 wasn't totally contaminated, it only had like 29.5 pounds of RDX in its entire system. But they couldn't certify that the whole drain system that was in concrete, and then the walls, didn't have any energetic material in it, so they had to take it down to search it out.

MS. PAULY: Yeah, it was 10 feet.

CO-CHAIR HAYES: Yeah, yeah.

MS. PAULY: That was -- that was quite a project.

CO-CHAIR HAYES: Yes.

MS. PAULY: That was an interesting one.

CO-CHAIR HAYES: And one-and-a-half million dollars to tear it down, so ...

Sorry.

MS. PAULY: Yeah, all good points.

And so being -- and Myrna actually points out something that I was going to mention, is that we can sometimes see these compounds. You can visually see them if they are in a high enough concentration, like the 2-Nitrotoluene that you see here at the bottom of Slide 12.

One of the other things that I was going to mention is that energetic compounds are typically not volatile. So we're not so worried about them evaporating, but because a lot of them do dissolve in water to some degree, we were worried about them in the groundwater.

So those were some of the chemical characteristics that we used to create the site -- the understanding of the site model and then to approach our investigations.

And some of those key investigations are shown on Slides 13 and 14 -- I'm not going to go through all of these, they are really more for your reference.
Again, the conceptual site model led us to things like surface removals, scanning of the subsurface for metallic items, because we know that a lot of the munitions were in metallic cases, and categorizing areas as either Category A or Category B. Category A were areas that, through interviews and records reviews, were more likely to have munitions in and around the building, and around the piers, as we mentioned earlier. And then doing subsurface removal -- digs basically.

CO-CHAIR HAYES: I know I've probably lost some memory of some of these procedures here, but can you tell us what was the Monitored National Attenuation Study in 2008, I don't -- in that area? I don't quite recall what it was -- that it was for munitions, but ...

MS. PAULY: I think you're right. I don't think that one was for munitions.

What was important for our purposes -- it was removal of -- I think it was removal of TPH (total petroleum hydrocarbons), if I'm correct. And a lot of the sampling that they did to confirm removal of TPH, they did some opportunistic sampling for munitions constituents and energetic compounds. And so we got a lot of the data to describe munitions at the site just from that document, so I think that is why I left that on there.

As I mentioned previously in Slide 12, there was building decontamination. Some of it had happened previously in -- I think it was 2002, but also again in 2010 and 2011, like when we took down Building A216.

And then a couple of other key documents to look at here, also. The Remedial Investigation Report for the Installation Restoration Program. That was at -- within sites -- within IA F1, I should say, in 2012.

A lot of the data that we use for the munitions investigation and our remedial investigation, including the risk assessment, were taken from that Remedial Investigation Report. What we didn't completely have was the extent of the energetic compounds.

So the risk was evaluated. We needed to confirm the extent through additional groundwater sampling in 2016, which I mentioned here at the bottom of Slide 14, for energetic compounds just to make sure that we knew exactly how far and where the compounds had moved.

And so the good news is that all of the risk assessments that we performed in the 2012 IA F1 RI were accurate. We just confirmed it by understanding exactly where the energetic compounds were on the site, so that was the good news.

And I did want to mention metals. Like on Slide 6, I had said that for the Munitions Response Program, you have three components: munitions items, energetic compounds, and metals from munitions items.

We did some testing at the South Shore Area in some of the pits there and testing the soil samples. It turns out that the munitions that were there were not leaching any metals, so there were no metals found in those pits that were above background. And so the metals that are on our site are from other operations, things like sandblasting, materials used to clean parts for painting, repainting, and things like that.

Those metals, as I mentioned, are up here (indicating on Slide 15). They are located in these three locations. This is a slide that I had shown when I talked about the IA F1 Proposed Plan and those are going to be handled under the Installation Restoration Program. So metals are being handled under that program and they are not being forgotten.
Okay. So the nature and extent of munitions at the site. This is our approach: we looked at, as I mentioned, the Category A areas and they are shown in red [Slide 16]. These areas, especially along the shoreline here and -- I don't know if the pier is on this one, but the piers were here and here, and so there were certain buildings around which we expected to find munitions items and those are shown in red and were Category A areas.

Likewise, Category B areas were basically everything outside of Category A. We checked under buildings; some of the buildings had raised floors with accessible areas under them. Those are shown in green and blue here [Slide 16].

And let's see, I am trying to distinguish -- oh, we just did different types of scanning under them, depending on the accessibility. That was the difference between green and blue. But we did scan 100 percent of the area under -- that were accessible under those buildings.

And other buildings were slab-on-grade, so we knew that it was unlikely that munitions would be buried under those. So that's how we approached the nature and extent of munitions.

On the next slide you can see all of the digs. And, Dwight, thanks again. Dwight was very instrumental with Weston in helping us do a lot of these digs.

As I mentioned, we did 100 percent of -- excuse me -- clearance of accessible surface areas, so that's the entire surface area that we could get to at the site. We did 100 percent of the subsurface anomalies, so this is the sensors that would detect the metallic anomalies in the subsurface; and we did 100 percent clearance in the Category A areas, which was over 7,000 anomalies. We did at least 20 percent clearance of subsurface anomalies in the Category B areas, because we wanted to do -- whenever we found a munitions items, we would go ahead and step out to anomalies near it, thinking that we had the understanding that there could be pits and if you found one, you might find others. With all of the step-outs, we ended up doing 30 percent removal in the Category B areas.

And as I mentioned, we did 100 percent removal of the subsurface anomalies under the buildings. You know, there are limitations to this technology. We cleared at least to 4 feet below ground surface in the open areas, or sometimes deeper if there were pits.

In the wetlands, because of the wet sediments and things like that, sometimes we couldn't get clearance deeper than 2 feet with the sensors, but we did that consistently. And similarly, sometimes there was interference with the components under the buildings, but those were hand dug, as well, under the buildings.

And then energetic compounds. Our last bit, we have talked about metals and talked about munitions items, last thing is energetic compounds. Like I said, we had all of that existing data, thank goodness, since the early 1990s. We did a little bit of additional sampling in coordination with the Department of Toxic Substance Control and the Regional Water Board around certain buildings where we weren't quite sure we knew exactly how far the energetics had gone, but now we know.

As you see up here [Slide 18], these soil and groundwater sampling locations were biased on places where we knew that energetics had been handled, where it had been seen before, and where it had been detected in the opportunistic sampling conducted in the monitored natural attenuation study that Myrna brought up.
There were hundreds of soil and groundwater locations. All of those sampling results that we had previous --

CO-CHAIR LEAR: Brooks, can I --

MS. PAULY: Yeah, go ahead.

CO-CHAIR LEAR: So your large Figure --

MS. PAULY: Yep.

CO-CHAIR LEAR: -- [Figure] 2-6.

MS. PAULY: Uh-huh.

CO-CHAIR LEAR: And your figure on Slide 17, they look to be slightly different. And I'm just wondering if you wanted to point out what the green squares versus red dots versus triangles are.

MS. PAULY: Oh, okay. Great. I can hardly see it on my slide.

CO-CHAIR LEAR: Yeah, because it's not the same. It's not the same figure for whatever reason.

MS. PAULY: Well, they are definitely not. So the difference between -- and I want to make sure we're talking about the same thing. Slide 17 --

CO-CHAIR HAYES: We're just saying that on this figure with the dots and things, that the red dots aren't on the ledger.

MS. PAULY: That may have been a mistake of mine. Let me just make sure I am understanding which site we're talking about, or which figure we're talking about.

So Figure 2, is that one of the figures?

CO-CHAIR HAYES: Yeah, Figure 2-6, PMA --

MS. PAULY: Oh, 2-6.

So these are the dig locations for the munitions items, where we detected subsurface anomalies.

CO-CHAIR HAYES: Oh, those are triangles not circles, those red ones?

MS. PAULY: They are triangles.

CO-CHAIR HAYES: Oh, look at that.

Oh, do you see those?

MS. PAULY: Does that make it clearer? So those were locations where we had found munitions items in the past, either through emergency removals or, you know, opportunistic removals.

CO-CHAIR LEAR: But this figure doesn't show any recent finds.

MS. PAULY: These are literally just locations. They are not actual -- we are not doing a differentiation between MEC [munitions and explosives of concern] or MDAS [material documented as safe] or any of the different categories; is that what you're talking about?

MS. HARRIS: I think that the figure in the PowerPoint seems to differentiate between the MEC and MDAS and the figure -- on your Slide 17 on the PowerPoint.
MS. PAULY: I don't see that.

You know what, this is because I have given Carolyn the wrong figure, I apologize.

No, you are exactly right. I gave her the wrong figure.

MS. HUNTER: We can e-mail the new ones.

MS. PAULY: Yeah, we can definitely e-mail the correct figure.

MS. HUNTER: Sure.

MS. PAULY: Let me make a note.

MS. HUNTER: I've got the note.

MS. TYGIELSKI: Which one is wrong? The one on the --

MS. HARRIS: Nothing is wrong.

MS. PAULY: It's not that they're wrong, it's just that there's more information in this one than there is on the large one that I have shown here. And really --

CO-CHAIR LEAR: This one says "MDAS," this one says "MEC" (indicating).

MS. PAULY: My point to show was really how many locations, not to really try to distinguish what we found or how much we found. But, sharp eyes.

So I was on Slide 18, talking about the nature and extent of the energetic compounds.

And what I wanted to point out was that all of these sampling results, even the historic sampling results, were below the criteria for screening at the time that they were sampled. They were never considered a concern, but we went ahead and worked with the regulatory agencies to come up with current and updated criteria and checked all of our results, historical as well as the current ones from 2016, and they were all below our criteria.

CO-CHAIR HAYES: Does anything in your presentation say that? Where is that?

MS. PAULY: Oh. Um ...

CO-CHAIR HAYES: It says it's --

MS. PAULY: It's in my notes.

CO-CHAIR HAYES: See, sometimes I put these in a folder and they are -- it would be helpful if I didn't have to scribble notes all over that.

MS. PAULY: It might be on the next page.

CO-CHAIR HAYES: Okay.

MS. PAULY: For some reason --

CO-CHAIR HAYES: Right down here (indicating).

MS. PAULY: There it is. Well, essentially no unacceptable risk remains from energetic compounds.

To summarize the site risks, there is still existing risk to human and ecological receptors from the potential remaining subsurface munitions items.
The EPA, back in 2008, acknowledged that with current technology, and I think this remains true today, there really is no way to assure that you have 100 percent removal.

We've reduced the risk significantly and by reducing the risk to human receptors, we're reducing the risk to the ecological receptors as well. And I'll talk about that in just a second.

So, obviously the metals risk is being handled under the Installation Restoration Program.

And, Myrna, the third bullet on this is that there's no unacceptable risk to human or ecological receptors remaining from the energetic compounds.

And that was -- where would you say that ...

CO-CHAIR HAYES: You have done something here that I might do in my upcoming presentation, and that is, to put some photos that don't necessarily link to the bullets, that I can tell. Is there a nexus between --

MS. PAULY: Oh, okay.

CO-CHAIR HAYES: -- a photo of the 4-inch round and any of those slide bullets?

MS. PAULY: Yes, so the 4-inch round connects to the first bullet, which is the remaining subsurface munitions items. It's just an example of things we've pulled out of the ground. We think we've gotten as many of those as we can.

CO-CHAIR HAYES: But there will always be the risk, the potential --

MS. PAULY: The potential.

CO-CHAIR HAYES: -- that there is something such as a 4-inch round lying about.

MS. PAULY: Buried below 4 feet.

CO-CHAIR LEAR: In the subsurface.

CO-CHAIR HAYES: Or in the subsurface, yeah.

MS. PAULY: In the subsurface, yes.

CO-CHAIR HAYES: And then the other glass of water, or whatever that is?

MS. PAULY: Well, it's actually 2-nitrotoluene dissolved in water, and it just connects --

CO-CHAIR HAYES: It looks cool.

MS. PAULY: It also connects to the idea that even energetic compounds, which are soluble in water, no longer remain at the site in concentrations that pose an unacceptable risk to humans or ecological receptors.

And I didn't really have a bullet or have a picture for metals. I just didn't. It was going to be a little pile of sand or something, it was going to be that exciting.

But I wanted to also point out that the munitions hazard assessment gives the site -- to your point about you can never reduce the risk to zero -- our munitions hazard assessment does give the site the lowest risk rating that there is, so ...

It's the risk rating of 4, I believe it is.

CO-CHAIR HAYES: Not to pester you, but is that in this document?
MS. PAULY: It will be in the --

CO-CHAIR HAYES: Or in the PowerPoint thing?

MS. PAULY: No, it would be in the document.

CO-CHAIR HAYES: And why is that? Because you did such a thorough and lengthy cleanup, or because of the profile of what you did find, or how much asphalt is on the property or --

MS. PAULY: That is a really good point. Actually, it's a little bit of both of the first two things you said.

It's based on how much removal we did, thousands and thousands and thousands of digs, but also exactly what you were saying about what we did find.

On Mare Island, we've never found a fired ordnance, so that is a really good point that Myrna makes. We have only found what we call DMM, or discarded military munitions, and those are -- a munition becomes more dangerous when it's fired because the fuse is activated and it is one step closer to being able to be triggered.

And we have never found -- we found fuses all over the place, but not fused items that had been fired at Mare Island. So that really is another factor that contributes to the lower risk rating. So -- thanks for the -- that's a really good point.

Now we're sort of -- this is the point in the presentation where it sort of switches from being the Remedial Investigation portion, so switching to the Feasibility Study portion.

Okay. So, as I had mentioned in my little preview of the Feasibility Study, the first thing we want to do is come up with remedial action objectives, or objective, depending on the site. In our case, it's one objective.

It's to protect human and ecological receptors by preventing exposure to residual munitions items in the subsurface.

And I want to make the point, too, that it's really unlikely, especially after what we talked about these items not being fused and not being what we call unexploded ordnance, or UXO, fired items, that it's very hard for any ecological receptor to activate them.

But it's more likely for a human receptor, somebody with a big backhoe like this, to have the ability to strike one of these items with high impact and potentially cause an explosive reaction. So it would be from a detonation that the -- if an ecological receptor would be nearby that they would be at risk.

That's why it's much easier for us to prevent humans from going in there and digging without having what we call construction support. That is actually one of the ways that we're going to meet that remedial action objective.

As you might imagine, based on the low risk from the munitions at the site, we really don't have a ton of alternatives. It doesn't really make a lot of sense to do more digging because the risk doesn't really change even if we do more digging.

So, we have Alternative 1, which is the “No Action” alternative that CERCLA requires to be considered. You always want to consider, would we be fine doing nothing? Let's look at that option, because it would be less expensive, less intrusive, all of those things.
And we have Alternative 2, which is “Land Use Controls,” and I will talk a little about what land use controls mean. For instance, it includes institutional controls which are restrictions on residences being there, certain schools, daycare facilities, hospitals, and things like that. And then inspections are done to make sure that land users are in compliance with those use restrictions.

And then it includes digging restrictions, which are mentioned down under engineering controls here. And an educational program, specifically, is a huge part of that alternative so people understand that they don't need to go out there. And maybe they want to dig a fire pit and that seems like a fun thing to do, but maybe not the best and safest thing to do. And so signage, restricting digging and handling of potential munitions items, all of these go together for keeping the humans from creating a risk to everything else.

Okay. There are nine criteria for evaluating alternatives. We have our two alternatives: do nothing or have some land use controls. And the alternatives are evaluated with these nine criteria, so let me first talk about what they are.

There are two threshold criteria, which are (1) overall protection of human health and the environment and (2) compliance with what we call applicable and relevant and appropriate requirements (ARARs). These are legal requirements. So the first two threshold criteria have to be met.

Now, there are five balancing criteria, which are things like the (1) long-term effectiveness and permanence; (2) reduction to toxicity, mobility, and volume through treatment; (3) short-term effectiveness; (4) cost; and (5) implementability.

The alternatives are ranked and rated against these criteria and then we make our decision as to what we're going to propose to the community.

And lastly, the regulators and the community have their say with the last two modifying criteria: (1) state acceptance, that's our regulators, and (2) obviously community acceptance, which is getting input from the public.

So how do these alternatives match up? Well, you can see [Slide 23], we have our two threshold criteria here: overall protection of human health and the environment, and compliance with what we call ARARs.

If we do nothing, we are not going to be protective of human health and the environment. If we don't have any educational signs, no one is going to know, necessarily, that there are places they shouldn't dig with heavy equipment without checking it first with metal -- you know, with metallic sensors. So it fails right away; Alternative 1 fails. Alternative 2 is protective and is in compliance with our ARARs.

The long-term effectiveness is that these requirements will stay associated with the land and the deed as long as there is still munitions that are potentially there. If they come up with -- you know, scientists come up with some technology that can guarantee that we have 100 percent removal, great, maybe we can do that in the future and we can remove those land use controls. But until then, they would stay in place and that would be rated high for long-term effectiveness.

Neither one of the alternatives are really good at reducing toxicity or mobility or volume through treatment, but our items aren't mobile and there aren't any energetic compounds in any concentration that are a problem, so it's really less of a concern.
Short-term effectiveness is, what is it actually -- what's the impact of actually doing the remediation? And that's actually really high for both of them because there's no impact. This is administrative only. So, if you were doing something like digging, that criterion would take into account how the community is affected by truck traffic in the short-term, so that's what the short-term effectiveness usually considers.

Implementability, again, these are both very easily implementable. They are administrative.

And there is no cost associated with the no action alternative, but we know that alternative is not a good idea. And there is a moderate cost associated with the educational program and signage and monitoring and things like that over time.

Based on our overall ranking, we've picked Alternative 2, land use controls, and we will move on to proposing this alternative to the public in the future.

And I think I have actually pretty much gone through that preferred alternative on the next slide. Essentially this next slide just says what I said about the table, so I won't go through it again.

All right. Our next steps are to finish up documenting what we have done for the many, many years of removals and investigations at the site, create that Proposed Plan, and come back and present it to you all so we can get your input.

I've got the Navy website up there, and I would be happy to take any other questions.

CO-CHAIR HAYES: I just want to comment that we have worked cooperatively with the Navy for more than 20 years. The Restoration Advisory Board is coming up on an anniversary in April of 24 years of being in existence.

And throughout that, really beginning very early in that process, first Sierra Club and later our non-profit, we have offered walking tours to the historic South Shore Area to the portion of the area in this -- what do you call this? -- a feasi -- the whole area, what did you call it?

MS. PAULY: Oh, the Production Manufacturing Area?

CO-CHAIR HAYES: The Production Manufacturing Area seems to go down on into the South Shore Area.

MS. PAULY: Kind of wraps around.

CO-CHAIR HAYES: Yeah. We had offered hikes every month to here, or to the Western Magazine Area, that's gotten kind of derailed, and hoping that it is going to get resolved.

One of the reasons that we did that is because we believe that “you don't love who you don't know,” and we think there is some tremendous and wonderful cultural, historic, archeological, natural, scenic, recreational resources on the site and we want to let people know that.

One of the reasons why it's important for people to know about this historic area at some point before you select an alternative, as regulators, and as the Navy, is because of this item: the modifying criteria of community acceptance, which indicates the community's preferences or concerns about the alternatives. You don't love who you don't know. That was my psychology professor back in the 1970s, if you want to know how long ago that was. And he makes a good point.

The community wouldn't have any way of gauging whether your plan is acceptable to them if they've never been there. You don't have any signage now, so you depend on me to inform the
public about your plans and about that property and about why they shouldn't go on the other side of the chain-link, barbed-wire fence.

And, you know, one of the reasons I didn't get dinner tonight was because I found two people on the other side of that fence. And they weren't able to get over to my side, and my brother and I helped them walk around to an opening where they could get out. They were in stocking feet. Their boat had sunk and they were stranded. So I am actually your public information officer, as I have said many, many times. I am also apparently your on-site, you know, evening-shift manager, at a minimum.

So I just -- and I am not trying to dig on or make any kind of, you know, undermining statements to the Navy. It's more important to me that the community have a robust access to this property so that when they come to respond to these decision documents and these plans and they eventually inherit this property, you will be able to know that they've been informed and educated and are aware of what they are getting into, or what they are signing up for, or what they are acquiring. Because that property will go to the State of California, it will go to the City of Vallejo as a grant back from the State. It's going to be public trust land in perpetuity. It is in perpetuity already.

So to the extent that the community relations plan, the community involvement plan, whatever those tools are that your agency oversees, Gavin, use whatever tools it uses or it says -- that the Navy says it's going to do. I have asked your public information staff where it says that -- in that document that the Navy guiding or allowing for hikes so that the public has access and has that vehicle for education about environmental cleanup, where it says that that's one thing the Navy is going to commit to. And your staff says they don't have time to review that document but that it's somewhere in the 370 pages and I could go look for it.

I wouldn't mind doing that, but I would just much rather, in the spirit of goodwill and public education, be able to give those tours on a regular basis again after not being able to do it for a few years.

So I think there is an urgency. I know I have observed a lot of people who feel that it's their right and maybe their duty to go exploring on this property. And to the extent that you don't have any public education program, you don't have any legal public access program, you don't have any informational signage, you don't have any current, really -- you know, we've been talking a little bit about some updated presentation material at our Visitors Center, but to the extent that many people who come to our property don't go to the Visitors Center. I think that this topic really brings up this gnawing concern that I have that I think is important for us to work collaboratively on.

And that's my message here at the Restoration Advisory Board, where we're supposed to be having early and often communication about environmental cleanup issues and their impacts on our community.

MS. PAULY: Are there any other questions?

(NO RESPONSE)

Thank you all very much.

CO-CHAIR LEAR: Thank you, Brooks.
Okay. So now we have a presentation. Myrna Hayes, RAB Community Co-Chair, is going to discuss with us -- she's going to address public safety and risk exposure on long-term BRAC and multi-agency-managed properties.

III. PRESENTATION (Myrna Hayes [Community Co-Chair]) The Case for Multi-agency/Owner Collaborative Management of Long-term U.S. Navy Managed and Transferred Parcels on Mare Island

CO-CHAIR HAYES: Hello. It's not very often you have me up here. I used to give a presentation, didn't I, every now and then, Paula?

I can tell you what I used to do. My first Navy co-chair was terrified of speaking in public, so I conducted all of the RAB meetings for many years. And then the next co-chair from the Navy was a wonderful young man who always did things just properly and so we got to trade. Every other month we conducted the meeting.

So, I don't very often get to come to the podium now and this isn't really a topic that I was preferring to talk about, but I had to. I feel I have to. And I brought it up very briefly in the Restoration Advisory Board meeting in November.

The title of my topic took up the whole first page: The Case for a Multi-agency and Owner Collaborative Management of the Long-term U.S. Navy Managed and Transferred Parcels on Mare Island.

The reason that I am making that case -- why am I giving this presentation? As I mentioned in the November RAB meeting where I voiced my concerns, a woman was devastated by the death of this beautiful dog, 110 pounds, and his name was Brad Pitt. And he went missing in October, and immediately lost and found, you know, signage was up, put up.

I was contacted, our Facebook page was contacted, and we began just trying to get the word out that this dog was missing on the north end of Mare Island. There was a tremendous outpouring of community support for this woman who was missing this dog; posters everywhere.

And people were later telling us that they were bringing their child to school and then going out and spending an hour looking for the dog, and then coming early to pick up their child in the afternoon and spending an hour looking for the dog. Nobody could find him or anything about him.

The next slide is a little bit graphic, or very graphic. He was found in a pit in the north end of Mare Island. He had apparently broken his neck and was instantly dead, as far as we can tell. And you can see, 110 pounds barely fit in that pit.

It was a pretty incredible find because 20 days after he went missing, a dog -- another pit bull was given the scent, the dog's scent from the dog's blanket. He went right to this pit instantly, the minute he got out of the car, and found it, when humans had been looking everywhere for this dog. And so they were able to reacquire the dog that night and properly dispose of him. So, I was contacted then and asked to help make sure that this never happened again.

So my first search of the site came up empty. I had no idea. I walked that whole land for about an hour, and I -- and she had told me where this pit was, and I simply couldn't find it. What I did find was a lot of other pits, open pits. And in this image, you can see -- I mean, it was --
You can see one here, there's one here, there's one there, and there is the dog's pit. Even covered and with a solar light, and I didn't see it.

And so the woman had put this solar light on and some flowers and put the back of some type of an appliance on it, it's pretty heavy, and it was actually gone the next day, the solar light had been thrown somewhere, and so people are out there.

She tried to fill the pit with whatever she could find so nobody else tripped and fell in it, nothing else did, and then it's now filled up with rainwater so everything's just floating.

But these are the ways that -- she had come back out, she lives in Byron, California, and just happened to be visiting a sister in American Canyon and stopped to just let the dogs get out of the car and run around, you know, they -- just a freak tragedy.

And, what I found was a lot of these pits. It's, as I say, pocked with these abandoned, open, underground structures. There are holes. There are pits of various sizes and depths, and most are filled with standing water at this time of year.

I don't know if they dry up during the summertime, which makes me think mosquitoes right off, but I found one had a floating dead goose in it, and so at least other wildlife has gotten into them. Some of them definitely would be big enough for a human to easily drown in or get trapped in.

So the existing conditions that we know are that north Mare Island, at least we believe, you know, those of us just driving by or those who are a little bit more informed, really, it is solely under the jurisdiction of the City of Vallejo.

There's a lot of press right now about the plans, the 18th or 20th, you know, different developer that plans to come to town and then, you know, doesn't for whatever reason. But I think the message is, most people believe that the City of Vallejo owns the whole north end of the island and then Lennar owns the, you know, the middle area, under the terms of the Economic Development Conveyance, but, in fact, it's a mix of land ownership.

Some of it is private, some has already been sold. The City of Vallejo is an owner. The Navy still owns property. Even the US Fish and Wildlife Service owns the tract just north of the recycling plant.

And I suppose that other people have some type of an interest, like Island Energy probably has easements or owns some portions of the property. I know for a fact they own the electrical lines, the land where the electrical lines are on the north part of the island, because they put up a replacement tower for an osprey that had nested on one of their sites/properties.

And, you know, I'm not really being -- joking here when I say a little bit tongue in cheek, the City of Vallejo maintains its parcels in a state of readiness for that future developer, and so that means a lot of clearing, cleaning, maybe exposing these pits, I'm not sure, just by the aggressive cleanup program they've had.

Recently, we learned in the press that they have some joint cleanup efforts they do with Caltrans on a routine and infrequent basis because Caltrans has a major easement on the north end of the island, and certainly California Coastal Cleanup Day. I conducted those for many years on the north end of the island.

So, open-pit structures pose a serious, I believe, public health and safety risk, and it's clear in this tragic accident that I've become aware of, and now you have. And you might say: well, why are
you giving this presentation at the Restoration Advisory Board? While it's not necessarily the responsibility of the environmental cleanup effort to ensure public safety on site, I think it presents a serious public health and safety issue when there are substantial, like 24-year-long delays in getting the environmental cleanup done due to the lack of funding, timing, or technical challenges that result in public exposure to these unsafe conditions. I am not saying that these are themselves an environmental hazard, I'm saying they are a public health and safety hazard.

What I am really calling for is a multi-agency collaboration to find some solutions because I can't be convinced that this is the City of Vallejo's problem, because I don't know, and nobody knows, except for real estate in both agencies, where the land boundaries are. And we don't even know how many of these pits there are or other types of hazards.

And while the City of Vallejo has hired, you know, a firm whose job it is to chase, shoo people away, we can't expect security services to be available around the clock on every square inch of this rather vast piece of property.

So, we have to come up with some other solution in the interim, prior to the Navy transferring the remainder of its properties, and also possibly within the environmental cleanup program we could reduce the risk dramatically.

We don't really -- nobody knows. This woman just stopped off the side of the road, let her dogs out and, you know, get their wiggles out before the rest of the journey. We don't know whether there's homeless people, whether there's people riding their bikes through, whether they are stopping for a game of Frisbee. They -- they don't -- we don't know where they are going or why.

And it's pretty impossible to think that we would fence the whole thing and have border patrol on the whole thing because we see how that is on the south end of the island even with a substantial fence. You know, we don't really have the border patrol except for Myrna, and her brother now, but it really isn't physically and fiscally possible to fence off all of the areas that might have holes or other hazards. So I am thinking more that best management practices could be implemented. That, as we talked very briefly at the last RAB meeting, would be something like figuring out whose pits these are and then filling them with gravel.

MS. TYGIELSKI: Yeah, fill them up.

CO-CHAIR HAYES: Fill them up, minimum. If they are not needed, whoever owns the property maybe could put a little money in, I don't think it would cost much, to either tear the structure out or fill it with gravel. I mean, we have engineers in the room, you could tell us. It probably wouldn't be too much.

It would take some effort to walk the land, because I can tell you, I missed this one and I missed the other pits on the first walk-through.

And then the Navy has, at times, posted informational signage. We had a program where we were really big on that because it was based on my visits to Seattle where whenever there is a land use change or a proposed land use, or in this case an environmental cleanup going on, we put some signage up that the Navy had gotten and designed that told the public, this is what is being done right now.

So that could be a minimum requirement, but it doesn't really address the overall level of risk. And there again, there could be a more general informational kiosk like the one at the beginning.
of the San Pablo Trail that says you're here, and here is some concerns you should -- and areas that you should be a little bit careful about, let's not get off into the pickleweed, you know, don't go climbing up over the tops of the levies. You know, you could maybe do something like that.

You could maybe design a website or an app for the public to learn updates and also to report hazards, too. You know, like there's a click-it/fix-it program with the city for potholes or garbage or whatever, there's a system to -- but that depends on the public coming out there and helping you out.

So I would say that exposure to failed infrastructure is an environmental health risk and I don't think that just shooing people away is very effective. It doesn't address the continued infrastructure failing and the risk that it poses.

There needs to be some other system in place that proactively prevents these exposures because you simply can't police people, pets, wildlife away from these threats. You have to proactively go out and do something.

And you have your hand up, Ms. Elizabeth.

MS. WELLS: I do. So the circular ones that you are showing, they look to me like manholes for utilities, and you mentioned that there's this click-it/fix-it thing. Is that something that you could do -- could you use that app for these circular ones at least that are out on the --

CO-CHAIR HAYES: Well, you could, I guess, but I'm telling you that that -- every photo of a pit that I have put in this presentation is a different pit. There's like, maybe right now, that I know of, like 20 different kinds of pits.

MS. WELLS: Mm-hmm.

CO-CHAIR HAYES: Some are in buildings, some are in these manhole things, some are elevated manhole-type things, person hole, you know, some are as big as this (indicating), as an open raised pit with a whole bunch of valves inside, it's -- and some are a mystery.

So, I mean, let me just show you a solution that at least one individual has worked on. We can talk about it. And I'm just thinking that each existing cleanup site should be evaluated for public safety risks as well as the environmental hazards that you are already evaluating and what they pose to people, pets, and wildlife.

And in that case, you probably saw there that the city staff had put a barricade over that hole, and it had just been run over and the flashing light was smashed. Every -- you know, just probably a truck at the recycling center, I don't think anything malicious.

This is a -- pits that are elevated, but their covers are missing; and they are very deep and they are full of water, and I am not sure they are active.

Oh, check that out, there's my hand and my iPhone.

But just another illustration that is a deep pit with a lot of water in it.

And since the November RAB meeting and my voicing my concerns, at least one agency representative has gone out and -- because I was surprised that this building was secured, and I actually then ran into that person doing some additional securing.

But this building was completely open and it has 6- to 8-foot-deep vaults full of water in them and the roof can be removed, sections of it can, because it had pumps in it at one time. The
pumps are gone and the roof was pushed open, and these vaults were then filled with water. And, you know, they are about 4 feet by 4 feet by 7- --- 6-, 7-, 8-feet deep. And so that agency person screwed all those openings -- wood on them and then put a door on, put a lock on, covered the roof, and screwed the roof parts down.

Did a similar thing right near this building, where there was a hole that that person actually almost fell into, so took a measurement of a manhole that was open, exposed, went to XKT Engineering, had them make a circle cover, and then covered it up so that it doesn't look like it's something to steal.

I guess what I am doing today is, I am really calling on the agencies and the property owners, really, to develop a plan in partnership with the community that reduces the risk on these long-term managed parcels and that would be protective of public health and safety.

And I don't really care how it gets done. I have some ideas. We have graffiti-removal teams, we have trash cleanup teams, we could have a volunteer citizen hazardous-conditions monitoring team. But I think we owe it to none other than Brad Pitt, the pit bull, you know, that --

MS. TYGIELSKI: That's some picture.

CO-CHAIR HAYES: Other critters that -- and people who find themselves, for whatever reason, on our land that they are owed safe passage.

And if we could put millions of dollars into protecting the public from hazardous materials, you know I really pray we could put our heads and hearts together to ensure that public health and safety, you know, and risk is reduced as well at the same time.

MS. TYGIELSKI: Just a statement here. I think filling those pits with gravel in the long run is cheaper, cheaper than paying however many salaries you have to pay to keep people out of there. And if perchance some child falls -- and instead of a dog, a child falls in it and dies, you've got a lawsuit.

CO-CHAIR HAYES: Yeah, or a homeless person falls in, I -- taking these photos by the -- by the biggest pit. I was parked near it and there was a dozen Modelo cans, you know, right there in the road next to it, so somebody could have been having a party and slipped and fallen into it.

And if, you know, depending on their physical condition, they might not have been able to get out of that pit. And they do have -- they all had covers on them at one time and they were all actively used at one time, but they all seem abandoned.

And Fred?

MR. OUSEY: Well, these are former Navy installations. What is the Navy's position on sort of intervening and make it a better --

CO-CHAIR HAYES: Well, once they transferred to the City, it's really the City's responsibility. But I'm saying there is a -- that it's not 100 percent, the north island is not 100 percent transferred.

And so best practices, where there's property that isn't transferred yet, I would hope the Navy would take the responsibility. But where the City has already acquired it, or owners, private owners, if we could come together to make an effective solution, then there wouldn't be finger-pointing; but there also wouldn't be dead dogs and children and wildlife and --
MS. TYGIELSKI: And geese.

CO-CHAIR HAYES: And humans.

MR. OUSEY: Well, who is going to pay for it?

CO-CHAIR HAYES: Well, the City is going to speak now, but I know that they've gotten a rather large grant or loan or have availability of that.

MS. HANFORD: Actually, Myrna, I appreciate you bringing this up. This is actually new information to me, and I was going to ask you if you could provide help to the City and the Navy about where these sites are.

I caught wind of this just hours before this meeting and I reached out to our water director and asked him to send folks out there to see if they can find these. I knew from the pictures it looked a little bit like a sewer manhole, so I said please look for those.

But we need your help in identifying those and the City will take action. We don't want a situation that has any possibility of a hazardous area for people. We know we have trespassing signs, we know we're going to put new trespassing signs on, but that's not the answer. That's part of it.

MS. TYGIELSKI: Sometimes that just encourages people.

CO-CHAIR HAYES: I did take the fire chief out. He was kind enough actually to take Nitro and me out the other way around in his car, and I showed him the sites that I found, just about a week ago, so not very long ago.

MS. HANFORD: Yeah, and I wasn't aware of that. But the Navy and the City have committed -- we just got wind of this a couple hours ago, but we are going to meet as soon as possible to come up with a plan.

But in the meantime, our staff is going to be looking, and the more help you can provide us in where these openings are, we need to secure them as quickly as possible.

CO-CHAIR HAYES: Well, what the fire chief said to me in this brief review, and these are just the ones I could find in an hour, and they weren't my -- you know, I am not -- this is not my line of work, necessarily, but I don't think there's any of us who doesn't want to go out there and go on a search mission to find those holes, but they are really difficult to find in some cases.

Like I said, my first hour trip out there to the site, I came up empty handed. I could not find that pit that the woman had shown photos on Facebook of having her dog killed in, so I'm not saying that these are all easy.

I've seen a lot of hastily done, hopeful solutions that I don't believe are going to stand the test of time. And there are structures where there were hinges that did have plywood covers. Those plywood covers have rotted through, or they are gone, or they are over there. There were manhole covers, and we know what magnets those are, literally magnets, and they are all at Alco, and you can have one made every week and it might not, you know, stay there.

So that's why I am saying you need to do an analysis, the city would, on their property, and Navy separately, or whatever other owners there are, you need to do an analysis of whether those are existing, active utility and infrastructure devices or if they are just a remnant of a past use. And if they -- because they have electrical cables in them, they look to have communication cables in
them, they have valves that then have -- they will have valves inside the box and then outside the box. There's no piping to the valve anymore.

These may be all 100 percent obsolete and could be filled with gravel fast and permanently, or they could be active service that is going to have to have some other alternative. And I will help you, absolutely, but I am saying that it's a professional's job.

And the cleanup may have actually exacerbated this problem. The tractors may have pulled those as they were flail mowing along, they could have knocked covers off or exposed the area so that it looked like a great place to run your dog or play Frisbee or get in and take a little bath, because homeless people look for water wherever they can. I know that for a fact.

So anyway, I am not trying to surprise you. I know there's lots of departments and lots of agencies that have some responsibility for the north island, and I'm just asking that we come together. And not just the north island, that's where I was directed to by this beautiful dog.

But, you know, I always wonder, when Nitro doesn't come back after about an hour over on the other side of the fence whether he has gotten caught in -- in a box somewhere.

And we're going to go out in our own park, we found two covers off in the ammunition depot, everything was underground electricity, and so the copper thieves have gotten in and pulled the electrical out of those abandoned boxes. We're going to be finding those and probably putting -- rather than -- we might be filling those with gravel, you know, but -- it will be a cost, but I don't think it will be an exorbitant amount of money.

So I don't want to take more of your time tonight, but I really appreciate you giving me the opportunity to talk about this issue and come together to resolve it.

IV. FIRST PUBLIC COMMENT PERIOD

CO-CHAIR LEAR: Thank you, Myrna. We are at the first public comment period if anybody has anything they want to bring up.

MR. GEMAR: If I can make one mention that would be a good place to start, I think, is -- the Navy CSO (Caretaker Site Office) ought to have these, but the Navy had quad maps for the Island. We called them quad maps because it was quadrants, and they have the quad map for all the utilities, storm water, you know, sanitary sewer, electrical --

CO-CHAIR HAYES: DOM (domestic pump station), yeah.

MR. GEMAR: -- et cetera.

And those were pretty helpful when we were doing our environmental work to at least start there. Of course, a lot of times things change, but those quad maps were actually fairly accurate.

So that would be a good place to start, and then, of course, Island Energy needs to be part of that and --

CO-CHAIR HAYES: Sanitation.

MR. GEMAR: -- san and flood, to make sure you know what is potentially active or not, but a lot of those things are, I'm sure, abandoned. You know, there was fire water that was the old saltwater lines, and some of those are probably abandoned. So, anyway, the quad maps would
probably be a good place to start. If you can latch onto them from CSO, that might be a good start.

CO-CHAIR HAYES: And then also whose property is what. But I see that the examples are already there in place, of collaborative work on -- I know it was with Coastal Cleanup, Recology, Sanitation District, and myself and other City staff. The City departments worked really hand in glove on that cleanup section.

And then equally Caltrans and the City have already demonstrated this collaborative approach, so I feel that this is not an insurmountable issue, it's just it has to start with someone kind of jump-starting it; and I promised Monica, Brad Pitt's owner, that I would do what I could.

And I thank you for the opportunity to bring it here because I think it is something that -- I know that you faced this when you were putting the landfill area to bed, lots of those kinds of structures and how to -- how to best leave them in a -- you know, what to do with them, whether to remove them or to leave them in place, and, you know, you did a lot of that kind of engineering there, for example, so...

MR. BOONE: My name is Dan -- my name is Daniel Boone. I am a Mare Island resident.

And I guess following up on the last point, generally good attention-getting words are "lawsuit," and we already heard that.

Also, as a fairly new resident, I moved in in the spring of last year, and one of the first things I noticed was lots of mosquitoes, which Myrna mentioned, and so there is a public health -- if you've got standing water in pits out there, mosquitoes are a recognized public health hazard; and then, of course, standing water in pits are an obvious public health hazard and could lead to lawsuits.

So maybe it seems like the City and the Navy are already talking, and some of these other entities, that perhaps there must be a master map somewhere of who owns what out on that north end. You can now use GIS (geographic information systems) to fix, you know, where these pits are with some exactitude.

So private owners who don't want to participate or put up money, I think the City -- most cities have ordinances for nuisance, and that can be a tool to get private owners to pay attention and take care of their properties.

CO-CHAIR HAYES: As can the risk of lawsuits, too. Nobody wants that on their property.

MR. BOONE: Yeah. And so I actually had a couple of questions about the first presentation tonight.

I noticed on Slide 6 that there was a mention of solvents from degreasing operations. And for various reasons, I have an interest in that particular item, and I'm just wondering -- and then on Slide 18, there's a mention of existing data from soil and groundwater sampling since the 1990s.

So, Gavin, does DTSC have all of the groundwater and soil sampling results, or are those results made public? I'm just wondering. I would like to find out more.

MR. McCREARY: Yeah. We should have all of that stuff.

MR. BOONE: On the EnviroStor site?

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MR. McCREARY: Yeah, if you're looking for anything specific, please give me a call or shoot me an e-mail.

MR. BOONE: Okay, I will do that.

I did have a question about the -- or I noticed that when Myrna asked about whether or not the uplands -- wanted a clarification of the record about whether the uplands would be -- might be a place where something could be found.

It seemed as though the record that was made was by pointing to a map and saying, "No, it's here," and I just wondered if you wanted a clarification of the record that a statement that, no, none of it is near the preserve, or perhaps a description of it, because I think there is a map later that, if I am reading it right, means that the uplands area definitely means behind the chain-link fence, between the chain-link fence and the water. But maybe there could be a clarifying statement about where the uplands are and that they don't implicate the preserve.

And then I had a question about the risks that were evaluated. It seemed as though the focus was on excavations down to 4 feet. And then on Slide 19, it talks about risk to human and ecological receptors remains for potential remaining subsurface munition items, and there's the picture of the 4-inch round there and it just made me curious.

Was the only risk that is evaluated and included in this from explosions from subsurface munition items, or is risk also being considered for when these 4-inch rounds and whatever other munitions there are that are buried 4 feet under the ground eventually -- this one looks pretty corroded and like it's breaking down.

Is there a risk that has been considered of what is in these munitions and whether that might leach into soil and eventually make it to groundwater.

MS. PAULY: Daniel, I will attempt to answer your last question first.

So, yes, the answer regarding the residual risk from munitions items is that there might be a munitions item that has energetic compounds within it, the actual chemicals that make it, when it's sparked, explode, rapidly expand.

And we have considered the degradation of the munition items, the metal that surrounds it. We looked at those pits in the South Shore Area and tested the soil around them and found that there were no levels of metals that were above the background levels that you would find in regular soil. And so, yes, from a metals standpoint, even though they are corroding, it's not impacting the environment in a negative way.

And we were also concerned about the energetic compounds coming out of them, and there are areas -- buildings that actually handled just the compounds themselves, before they were put in the munitions and after munitions. We have looked at the soil and groundwater in hundreds of places around the site, especially around the buildings that handled the open, you know, the part of -- here, the powder form.

CO-CHAIR HAYES: The energetic material.

MS. PAULY: Of the energetic compounds, exactly, the powder forms of them.

We looked around those buildings and looked in the groundwater because the chemical characteristics of those compounds means that they are typically soluble in water and we could find them there if present, and we didn't. We looked and looked and looked, and we did not find
-- we found them in very tiny quantities in some cases and then were able to find exactly how far they went out and then we didn't see them.

So even in those tiny quantities when we found them at the potentially original source, they weren't in a high-enough concentration to cause any unacceptable risk to human health or the environment. Usually the ecological receptors are more sensitive and we looked at the most sensitive receptors at the sites.

So, the answer to your question is, yes, we have considered the remaining munitions, whether or not they are degrading.

For the outer casing degrading, the risk from that is not unacceptable, and the risk from the energetic compounds inside has been looked at and is not unacceptable, so we have looked at both of those.

And I think your previous question --

MR. BOONE: Well, if I could just focus on that.

MS. PAULY: Sure.

MR. BOONE: So energetic compounds, I understand those are tested for. Is there anything else in these munitions that wouldn't necessarily be an energetic compound that could be still toxic if it were to reach groundwater?

MS. PAULY: My understanding is no, from all of our records and interviewing and, again, looking at the production, we have actually had UXO techs come out. Some of these gentleman were people who worked in these facilities, so they knew exactly how the manufacturing was done, they knew what chemicals were used, and some of those guys were actually people that helped us decontaminate some of the buildings.

MR. BOONE: Okay.

MS. PAULY: And so I think your other question had to do with the uplands location and the preserve, specifically.

Now, it's a little hard for me to understand exactly where the preserve is. Myrna, maybe you can help me. But the point is that this area was designated for production manufacturing by the Navy.

And my understanding --

CO-CHAIR HAYES: Why don't you look at Slide 5.

MS. PAULY: Slide 5, okay. Yeah, okay, here we go. And so -- if I am remembering correctly, are you right here or is it here (indicating)?

CO-CHAIR HAYES: All the green.

MS. PAULY: All the green, okay.

Right. Well, and -- okay. So inside of this brown dotted line is where the Navy did their production manufacturing of the munitions items. And my understanding is that they didn't do anything outside of here that hasn't already been cleared. There may have been --

CO-CHAIR HAYES: Can I respond to that?
MS. PAULY: Sure.

CO-CHAIR HAYES: Because I think Paula and I are actually the only two people that go back that far on this particular cleanup.

The Navy actually did have its Mobile Unit 9 out of Concord, UXO team, evaluate and clear this whole area, Reuse Area 12.

It did a lot of very draconian removals at that time because this was kind of pre the use of all-metal detectors, so they actually removed railroad tracks, drain pipes.

MS. TYGIELSKI: They even found a bicycle at the bottom of a lake.

CO-CHAIR HAYES: Yeah, they even drained a pond up on the hill and they found a bicycle, a pistol, and a Coke machine. And so they combed this area with metal detectors looking for munitions.

If you go to the Recorder's Office today, you are going to find that this is probably one of the only properties on the island, besides your home, that doesn't have a land use restriction on it or a land use covenant, a LUC, because actually no munition items were ever found on this property with a pretty aggressive review of the property. So, that's because the buildings were used to store munitions.

They were then transported by either truck or mostly by rail to the piers. And because there wasn't any manufacturing, there wasn't any disposal of munitions-related material like there was in the Production Manufacturing Area.

When I asked that question about upland, I always think of our preserve as being the upland so I was curious about what you were talking about; but actually because there is still area to clear and transfer on the Historic South Shore and a little bit of slope between the existing preserve and then where it drops off to the shoreline below.

MS. PAULY: And we make the distinction between uplands and wetlands from an ecological risk perspective in terms of what receptors are going to be there.

So the wetlands are a little bit lower elevation and they have the ability to support pickleweed, because they get the tide in and out, and we tend to see different animals and plants there versus in the upland area. So that really is the distinction of that terminology.

CO-CHAIR HAYES: And my question for you was, it said that the munitions were buried in the upland areas and it was like it was purposely put in there like it was, you know, squirrels putting away acorns for the winter, but -- so I was just distinguishing that between the preserve, where there have never been any munition items found, and these other upland areas, which is just a different language, a different nomenclature. "Upland" meaning non-tidal or open water.

MR. BOONE: So if I could ask it this way: Looking at Slide 5, you were noticing that there was a brown line, outline line, that has kind of white dots in it.

MS. PAULY: Uh-huh.

MR. BOONE: Is that a completely fenced area?

MR. GEMAR: Yes. Along the road.

CO-CHAIR HAYES: Oh, along the road.
MR. BOONE: Along the road.
MS. PAULY: Sorry, yes, along right --
MR. BOONE: So the westernmost -- if we look at this where it shows north, the westernmost portion of that brown dotted line tracks the road, and that is all fenced in?
CO-CHAIR HAYES: Mm-hmm.
MR. BOONE: Okay. So as to the bulleted item that says "Munitions items buried in uplands," on slide number 11, is it correct to say that the munitions and the uplands that are discussed on that bullet item on Slide 11 are inside the brown bordered area on Slide 5?
MS. PAULY: Correct.
MR. BOONE: Okay.
CO-CHAIR HAYES: And, in fact, you can, you know, just in lay terms here, you could go to those pages that we were looking at later -- oh, let me see, on Slide 16. Well, let me see -- Slide 17, for example, and you could actually see where those anomalies, not all munition items, but metallic debris and components of munitions and then munitions and explosives of concern, which are munition items not fired, fused, or armed, so they are not UXO.
MS. TYGIELSKI: So just get it concisely in the notes in case Myrna needs to refer to it to say, this is not the park, this is not the preserve, that you're -- by upland, you are talking about Subareas 1, 2, 4, 3, and 5?
MS. PAULY: Correct, I am talking --
MS. TYGIELSKI: And you're -- excuse -- you're saying, Subarea 6 is a wetland, all the rest of that is upland.
MS. PAULY: Correct. Thank you for putting it so succinctly.
Did I see -- oh, Nick?
MR. SHIH: I think there was a question about the actual solvents, you provided us something about chlorinated solvents, and I think you specifically wanted to know which chlorinated solvents; is that your question?
MR. BOONE: Well, I mean, if you know that. I was going to contact Gavin to get more detailed information, but --
MS. PAULY: That's probably the best way to do it, the most complete way to do it. But I should just say that's all part of the Installation Restoration Program. It wouldn't be part of the Munitions Response Program. But, yeah, Gavin is probably your guy.
MR. BOONE: Okay.
MS. PAULY: Thanks, Nick.
CO-CHAIR LEAR: All right. So we are at the 10 minute break.
(Thereupon there was a brief recess.)
V. ADMINISTRATIVE BUSINESS (Myrna Hayes [Community Co-Chair] and Janet Lear [Navy Co-Chair])

CO-CHAIR LEAR: All right. We are at administrative business. As always, if you have comments on the meeting minutes, get those to Myrna or myself.

VI. FOCUS GROUPS REPORTS


a) Technical Focus Group (Paula Tygielski [RAB Community Member])

MS. TYGIELSKI: No, I have nothing to report.

b) City of Vallejo Update (Erin Hanford [City of Vallejo])

CO-CHAIR LEAR: City of Vallejo.

MS. HANFORD: I think everyone is aware that the RFP (request for proposal) was out for North Mare Island, 157 acres on north island, and I think it's open until the end of March; but accepting all proposals for part or all of the land.

Myrna, thank you for bringing us awareness of the safety issues at North Mare Island. Please call me ahead of time, anytime, if anybody finds any issues on North Mare Island or all of Mare Island and I can point them in the right direction on how to get those handled.

That's all I've got to report today.

c) Lennar Update

CO-CHAIR LEAR: Okay. Well, as you all can tell, Neal is taking a vacation from us but he did drop off his handout for you to look through at your leisure.

And then we have Dwight here for the Weston update.

d) Weston Update (Dwight Gemar [Weston Solutions, Inc.])

MR. GEMAR: Well, as Elizabeth's has pointed out, I could probably get this on a 3-by-5 card now, but there's only one document that is still under review. Navy is looking at the Land Use Control Remedial Design Report for the two sites down at the southwest end of Mare Island. The IR Site 5, Dredge Pond 7 South, and the Western Magazine Area, so hopefully that will come out soon.

And then the other document that will be coming out to the regulators soon is the Weston Early Transfer Parcel Third Five-Year Review report, and then we'll be putting a public notice in the paper to advertise that five-year review process is underway and we'll be looking for input from the public on that eventually.

And then as far as Investigation Area H1, we are continuing to obviously maintain the infrastructure for the former landfill area and the perimeter groundwater and leachate extraction system, which is continuing to operate without any issues.

e) Regulatory Agency Update (Gavin McCreary [Department of Toxic Substances Control] and Elizabeth Wells [Regional Water Board])

MR. McCREARY: Let's see, we are currently reviewing a few documents and are expecting a whole bunch more to come to us in the next couple months.

Another thing of note, Jesus Cruz, who was a Public Information Officer on the Mare Island project, has retired, and we are looking to have a new person come aboard to take the role over.

MS. WELLS: I'm also reviewing reports. And I would like to compliment myself because this is the only time on the Navy report it will say number of documents submitted and the number of comments received by the Regional Water Board as being equal, because -- in the first month of the year. Usually we don't equal the number of documents that were submitted.

But other than that, we're just moving along on document reviews and hoping for lots of rain because of the drought, but not a lot of rain so that the Navy can do some of its fieldwork.

VII. CO-CHAIRS’ REPORT (Myrna Hayes [Community Co-Chair] and Janet Lear [Navy Co-Chair])

CO-CHAIR LEAR: Okay. So I will give the Navy update. Elizabeth already held up the monthly report for the Navy. This past month, we've done fieldwork for two different areas. We did sampling for the perfluorinated compounds at three sites on Mare Island, and we also started some work on IR Site 4, collecting data using pressure transducers in groundwater monitoring wells and doing some land surveying in preparation for collection of additional data at IR Site 4.

We have submitted one document which was the Five-Year Review Report for IA H1 and Marine Corps Firing Range, and we have received comments on two documents from the Regional Water Board and on one document from DTSC.

MS. WELLS: Oh, I'm ahead.

CO-CHAIR LEAR: You are.

MS. WELLS: Yes.

CO-CHAIR HAYES: We're staying till 9:00.

CO-CHAIR LEAR: And so, Myrna?

MS. WELLS: First time in 7 years, I think.

CO-CHAIR HAYES: Okay. Thank you again.

And, Erin, I sense some sensitivity, like I should have brought this issue to you. But I really did make a public statement in the November RAB meeting, and I don't know if you were here or not or if that -- if you read the minutes, it was -- I did let people know a couple of months ago. So I was just doing my follow-up because it was my duty to try to figure out what was there, how extensive it was, and then bring it to all of us here because I am looking for collaboration and looking for -- and it's a complex issue. I wasn't trying to single out the city and I hope that it didn't sound that way.
I am announcing and reminding people that the 22nd Annual San Francisco Bay Flyway Festival comes up this February 9, 10, and 11, and is headquartered here on Mare Island again this year.

Lennar is providing a building and we want to thank the City of Vallejo and the U.S. Navy for making a big effort to get us access for a hike once a day on the historic south shore.

Used to do the Western Magazine Area, but I think Lennar is trying to discourage public use of the Western Magazine Area. I say that, quite frankly, because they have torn up access points that we used to be able to get there from, so I am concerned about that. So we will not be having a Western Magazine Area outing on that particular weekend. We could certainly use volunteer help and welcome people to help out.

And want to thank the Navy for actually hosting the first event with us 23 events ago this very weekend, in January of 1996, when they used the Restor – what became the Flyway Festival, but that first event, to gauge the public interest in a permanent environmental education facility.

The Navy staff at the time, the commander, believed that while the Navy did have a lot of environmental cleanup to do, that it had also been a good steward of natural resources on the property, and it wanted to know whether there was a public interest in showcasing that or having access to those lands. And over a thousand people came out on that rainy day, and that shocked the Navy.

They worked very, very hard with the U.S. Fish and Wildlife Service and us as community members to ensure that there was a permanent facility here. However, after we raised $2.4 million for that facility in the federal budget, it was taken away in an unfortunate situation that was out of our control. So we still do not have a permanent environmental education facility on Mare Island and in this community. And the festival continues to be a placeholder and a gauge of public interest for that ultimate need.

All right, so thank you.

VIII. SECOND PUBLIC COMMENT PERIOD

CO-CHAIR LEAR: One more public comment period.

If there's any -- anything else? No?

(NO RESPONSE)

CO-CHAIR LEAR: All right. Thank you, everyone, for coming to the meeting. Drive safe, and we'll see you next time.

(Thereupon the proceedings ended at 8:57 p.m.)
List of Handouts:

- Presentation Handout – Status of the Production Manufacturing Area Munitions Response Program Remedial Investigation/Feasibility Study [Attachment 1]
- Presentation Handout – The Case for Multi-agency/Owner Collaborative Management of Long-term U.S. Navy Managed and Transferred Parcels on Mare Island [Attachment 2]
- Navy Monthly Progress Report, January 25, 2018 [Attachment 3]
- Lennar Mare Island RAB Update, January 2018 [Attachment 4]
- Weston Mare Island RAB Update, January 2018 [Attachment 5]
Attachment 1. Presentation Handout – Status of the Production Manufacturing Area Munitions Response Program Remedial Investigation/Feasibility Study
Former Mare Island Naval Shipyards

Restoration Advisory Board (RAB) Meeting

Status of the Production Manufacturing Area (PMA) Munitions Response Program (MRP) Remedial Investigation/Feasibility Study (RI/FS)

January 25, 2018
Agenda

• Site Location and History
• Current and Future Site Use
• Munitions Response Program (MRP) vs. Installation Restoration Program (IRP)
• Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Process Overview
• What’s in a Remedial Investigation / Feasibility Study (RI/FS) Document?
• Conceptual Site Model and Chemical Characteristics of Energetic Compounds
• Key Previous Investigations and Reporting /Conclusions
• Nature and Extent of Contamination
• Summary of Site Risks
  ---Remedial Investigation (above)/Feasibility Study (below)---
• Remedial Action Objective(s)
• Preliminary Remediation Goal(s)
• Summary of Remedial Alternatives
• Evaluation of Remedial Alternatives
• Summary of Preferred Alternative(s)
• Next Steps and Schedule
Site Location
Site History

- Also known as Investigation Area (IA) F1
- Munitions were manufactured and stored at Production Manufacturing Area (PMA)
- Munitions were loaded and unloaded at the piers
- In 1973, munitions production in the area ceased. By 1975 munitions processing and storage also ceased. Many buildings were subsequently used for storage or were converted for office space.

Building A-258
Current and Future Site Use
PMA - Munitions Response Program (MRP)

- Cleans up munitions sources
- Munitions Items
- Metals from Munitions
- Energetic chemicals used inside munitions

IA F1 - Installation Restoration Program (IRP)

- Cleans up chemicals from other non-munitions sources
- Solvents from degreasing operations
- Petroleum hydrocarbons from oil and diesel storage tanks
- Metals from sand blast materials
CERCLA Process Overview

• **Preliminary Assessment/ Site Inspection (PA/ SI):** A review of existing information or collection of environmental samples to determine if a previous release or activity may require additional investigation or action.

• **Interim Removal Actions:** Actions implemented at any point in the process if needed to address a principal or imminent threat.

• **Remedial Investigation/ Feasibility Study:** Assessment of the nature and extent of contamination and the associated risk to human health and the environment. Development and evaluation of remedial alternatives to address the identified risk.
• **PP/ Draft RAP:** Summarizes the results of the Remedial Investigation/Feasibility Study (RI/FS) and explains the preferred remedial alternative.

• **Record of Decision/ Remedial Action Plan (ROD/ RAP):** Signed decision document that describes the final selected remedial alternative.

• **Remedial Design (RD)/ Remedial Action:** Design and actions associated with selected remedy. Land-Use Control (LUC) RD details implementation actions for institutional and engineering controls.
CERCLA Process Overview (Continued)

- **Long-Term Monitoring/ Operation and Maintenance/ Operating Properly and Successfully:** Describes the required actions to operate and maintain the selected remedy. Documents when the selected remedy is operating as designed.

- **Response Complete:** Documents when response actions, including land use controls (LUCs), have been implemented by deed restrictions for subsequent property owners.

- **Site Closure:** Property can move to Real Estate Group for transfer and new use
What’s in a Remedial Investigation / Feasibility Study?

- **Remedial Investigation**
  - Assessment of the nature and extent of contamination and the associated risk to human health and the environment.

- **Feasibility Study**
  - Development and evaluation of remedial alternatives to address the identified risk.
    - Remedial Action Objective(s)
    - Preliminary Remediation Goal(s)
    - Summary of Remedial Alternative(s)
    - Evaluation of Remedial Alternative(s)
    - Summary of Preferred Alternative(s)
Conceptual Site Model

- Projectile/rocket warhead assembly & breakdown
- Propellant loading (powder bags and cartridge cases)
- Munitions refurbishment
- Limited storage
- Munitions items lost around piers
- Munitions items buried in uplands
• Certain buildings handled energetic compounds and had to be decontaminated and/or removed
• 2 locations where energetic compounds found at the ground surface
• Energetic compounds are typically not volatile
• Energetic compounds typically do dissolve in water
Key Previous Investigations & Reporting

- Initial Assessment Study, 1983
- Environmental Baseline Survey, 1993
- Emergency Munitions Response Actions, 1993 to 1995
- Preliminary Assessment Site Investigation Studies, 1995
- Unexploded Ordnance Site Investigation, 1996
- Groundwater Beneficial Use Assessment, 1997
- Group II/III Accelerated Study, 1997 and 2000
- Unexploded Ordnance Intrusive Investigation, 1997 to 2000
- Building Characterization, 2002
- Additional Sampling, 2003
- Shoreline Munitions and Explosives of Concern Investigation, 2003 to 2006
Key Previous Investigations & Reporting (Continued)

- Uplands and Shoreline Digital Geophysical Mapping Survey, 2006
- Additional Site Investigation, Soil and Groundwater Sampling, 2007
- Monitored Natural Attenuation Study, 2008
- Time-Critical Removal Action (TCRA), 2007 to 2008
- Building Decontamination, 2010 to 2011
- IRP Remedial Investigation (RI) Report Installation Restoration Program Sites Within IA F1, 2012
- MRP Non-Time-Critical Removal Action (NTCRA) PMA and South Shore Area (2012 to 2013)
- IRP Feasibility Study (FS) for IA F1, 2015
- Additional Groundwater Sampling, 2016
Nature and Extent of Metals Contamination

Chemicals of concern (COCs) in soil and sediment: copper, lead and zinc
Nature and Extent of Munitions Items

- Category A areas in red where the Conceptual Site Model indicated that munitions items were most likely to be found
- Category B areas are everywhere outside the Category A boundaries
- Some buildings had raised floors with accessible areas under them (green and blue)
- Other buildings are slab on grade
Nature and Extent of Munitions Items

- 100 percent of the accessible surface of the site cleared
- 100 percent of subsurface anomalies in Category A areas cleared (7,122)
- At least 20 percent of subsurface anomalies in Category B areas cleared (3,579 anomalies with step-outs = 30 percent)
- 100 percent of subsurface anomalies in accessible underbuilding areas cleared (15,222)
Nature and Extent of Energetic Compounds

- Existing data from soil and groundwater sampling since 1990s
- 2016 – Additional groundwater sampling around buildings that used or handled energetic compounds
- The nature of the energetic compounds at the site is understood and their extent has been delineated
Summary of Site Risks

- Risk to human and ecological receptors remains from potential remaining subsurface munitions items
- Risk to human and ecological receptors from metals at the site is being handled under the Installation Restoration Program
- No unacceptable risk to human or ecological receptors remains from energetic compounds
All Areas

- Protect human and ecological receptors by preventing exposure to residual munitions items in the subsurface
Summary of Remedial Alternatives

Two Remedial Alternatives were developed to address the Production Manufacturing Area

- **Alternative 1 - (Uplands and Wetlands) No Action**
  - The No Action alternative is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to be evaluated for comparison purposes. Under this alternative, nothing is done to clean up the contamination, restrict land use, or limit contamination movement.

- **Alternative 2 - Land Use Controls (LUCs)**
  - **Institutional Controls (ICs)**
    - Use restrictions on residences, certain schools, day care facilities and hospitals
    - Inspections and reporting required for compliance with the use restrictions
  - **Engineering Controls (ECs)**
    - Educational Program and Signage Restricting Digging and Handling of Potential Munitions Items
# The Nine Criteria for Alternative Evaluation

## THRESHOLD CRITERIA

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Overall Protection of Human Health and the Environment</strong></td>
<td>Evaluates how the alternative reduces the risk to human health and the environment from potential exposure, using treatment, engineering, or institutional controls.</td>
</tr>
<tr>
<td><strong>Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)</strong></td>
<td>Evaluates the ability of each alternative to meet all federal and state chemical-, action-, and location-specific statutes and regulatory requirements.</td>
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## BALANCING CRITERIA

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Long-Term Effectiveness and Permanence</strong></td>
<td>Evaluates the impact of a remedial alternative in the long term.</td>
</tr>
<tr>
<td><strong>Reduction to Toxicity, Mobility, and Volume through Treatment</strong></td>
<td>Evaluates the expected performance of treatment technologies, including the amount of waste treated or destroyed and the quantity of chemicals remaining after treatment.</td>
</tr>
<tr>
<td><strong>Short-Term Effectiveness</strong></td>
<td>Evaluates the effectiveness to protect human health and the environment during implementation of a remedy, including protection of the community, workers, and the environment, and time to achieve cleanup goals.</td>
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<tr>
<td><strong>Cost</strong></td>
<td>Estimates capital costs of implementation, operation and maintenance.</td>
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<tr>
<td><strong>Implementability</strong></td>
<td>Evaluates the technical and administrative feasibility and availability of necessary goods and services, including ease and reliability of operations, ability to obtain approvals from other agencies, and availability of equipment and specialists.</td>
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## MODIFYING CRITERIA

<table>
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<tr>
<th>Criteria</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>State Acceptance</strong></td>
<td>Indicates the state's preferences or concerns about the alternatives.</td>
</tr>
<tr>
<td><strong>Community Acceptance</strong></td>
<td>Indicates the community's preferences or concerns about the alternatives.</td>
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Evaluation of Alternatives

- The last 2 of the Criteria are **Community Acceptance** and **State (Regulatory) Acceptance**
- These 2 criteria are evaluated after the Alternatives are presented to the Public in the Proposed Plan
Alternative 2 – Land Use Controls (LUCs)

• Provides protection to human health and the environment by limiting site use to industrial, conservation area and regional park.

• Meets federal and state applicable or relevant and appropriate requirements.

• Provides long-term protection of the environment through permanent restriction on sensitive uses.

• LUCs have no short-term risk to the environment or the community.

• Allows redevelopment of the site in a manner most consistent with the City of Vallejo’s 2008 Mare Island Specific Plan as amended (Implementability and Cost).
Next Steps

• Complete the RI/FS and get approval from the regulatory agencies

• Create a Proposed Plan and present it to the Public

The Navy website:

Status of the PMA MRP RI / FS

Questions?
<table>
<thead>
<tr>
<th>Acronyms</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ABM</td>
<td>abrasive blast material</td>
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<tr>
<td>ARARs</td>
<td>Applicable or Relevant and Appropriate Requirements</td>
</tr>
<tr>
<td>bgs</td>
<td>Below ground surface</td>
</tr>
<tr>
<td>BRAC</td>
<td>Base Realignment and Closure</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act</td>
</tr>
<tr>
<td>COC</td>
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<td>DTSC</td>
<td>Department of Toxic Substances Control</td>
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<td>EC</td>
<td>Engineering control</td>
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<td>EPA</td>
<td>United States Environmental Protection Agency</td>
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<td>FS</td>
<td>Feasibility Study</td>
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<td>Health and Safety Code</td>
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<td>IA</td>
<td>Investigation Area</td>
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<td>IC</td>
<td>Institutional control</td>
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<tr>
<td>IRP</td>
<td>Installation Restoration Program</td>
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<tr>
<td>kg</td>
<td>kilogram</td>
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<td>LUC</td>
<td>Land-use control</td>
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<tr>
<td>mg</td>
<td>milligrams</td>
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<td>MRP</td>
<td>Munitions Response Program</td>
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<tr>
<td>NPL</td>
<td>National Priorities List</td>
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<td>NTCRA</td>
<td>Non-Time-Critical Removal Action</td>
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<tr>
<td>PA/SI</td>
<td>Preliminary Assessment/Site Inspection</td>
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<tr>
<td>PMA</td>
<td>Production Manufacturing Area</td>
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<td>PP</td>
<td>Proposed Plan</td>
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<tr>
<td>RA</td>
<td>Remedial Action</td>
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<td>RAO</td>
<td>Remedial Action Objective</td>
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<td>RD</td>
<td>Remedial Design</td>
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<td>RI</td>
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<td>ROD</td>
<td>Record of Decision</td>
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<td>SBM</td>
<td>sand blast material</td>
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<td>TCRA</td>
<td>Time-Critical Removal Action</td>
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<td>UST</td>
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Attachment 2. Presentation Handout – The Case for Multi-agency/Owner Collaborative Management of Long-term U.S. Navy Managed and Transferred Parcels on Mare Island
The case for Multi-agency/owner collaborative management of long-term U.S. Navy managed and transferred parcels on Mare Island

MARE ISLAND RESTORATION ADVISORY BOARD presented by Myrna Hayes, Community Co-Chair

JANUARY 25, 2018
What prompted this presentation?

- I was contacted in early Fall 2017 and asked for help in ensuring that a tragic incident on North Mare Island which ended in the death of a beloved dog was not repeated.

- I voiced my concerns in my RAB Co-Chair report in November 2017.
Brad Pitt the dog went missing without a trace

The community outpouring of assistance with the search was tremendous and sustained with no luck

October 7, 2017
Dog’s death in a reported open pit led me to check out conditions

The dog named Brad Pitt was killed instantly in October 2017 when he was running in the field near the owner’s parked car and fell into one of these structures. The owner reports immediately beginning to search for her dog and call out to him with no response.
Intense 20-day hunt by at least 40 volunteers

Twenty days later, the dog’s body was found by another pit bull dog given a scent from the dog’s blanket. The dog owner had walked within a few feet of the pit many times in her search and her car was parked nearby the night of the accident.

That is how hard some of these open pits and structures are to detect in many cases.
My first search for the site came up empty

Now, I see not just one, but at least three more pits in the vicinity of the accidental death
Owner placed a solar light and back from an appliance over the pit to mark and later tried to fill with scrap debris. Rains filled with water. The next night, the solar light was thrown into the field and the cover missing…vandals
What I found in on-the-ground research

North Mare Island is pocked with apparently abandoned open underground structures, holes and pits of various sizes, depths and purposes, most filled with standing rain or groundwater.
Existing conditions and management entities for North Mare Island

- North Mare Island is generally perceived as solely under the jurisdiction of the City of Vallejo following land transfer from the U.S. Navy under the terms of the Economic Development Conveyance.

- In fact, it is a mix of land ownership, private, City of Vallejo and U.S. Navy and even the U.S. Fish and Wildlife Service, as well as others I suppose, like Island Energy and the Vallejo Flood and Waste Water District.

- The City of Vallejo maintains its parcels in a state of readiness for a future developer. From time to time, it conducts joint “cleanup” efforts with Caltrans, CA Coastal Cleanup, etc.
Open pit structures pose a serious public health and safety risk

While it is not necessarily the responsibility of the environmental cleanup efforts to ensure public safety onsite, it certainly presents a serious public health and safety issue when delays in environmental cleanup due to lack of funding, timing or technical challenges result in public exposure to unsafe conditions.
Call for multi-agency collaboration for solutions

- The public cannot be expected to know what agency manages what parcels and what the actual hazards are on the properties. Security services cannot be expected to monitor public venturing onto such a vast area.
- Fencing everything and “border patrol” isn’t fiscally possible, feasible or practical.
- Best Management Practices such as filling pits with gravel can be devised and implemented during environmental cleanup or in the years prior to completion, and of course, on the already transferred property.
- At times in the past the Navy has posted informational signage at cleanup sites. This is a minimum requirement now, but doesn’t address the overall level of risk. There should be one or more a general information kiosks and a website or app for the public to learn updates from and report hazards to.
Exposure to failed infrastructure is an environmental health risk

- The policy of simply shooing people away, doesn’t effectively address these infrastructure failings and the risk they pose.

- There needs to be a system in place to proactively prevent exposure. You can’t police people, pets and wildlife away from such threats.

- Each existing cleanup site should be evaluated for public safety risk, as well as the environmental hazards posed to people, pets and wildlife.
Response to Nov RAB meeting concerns

Since I voiced my concerns, this building has been secured and the 6-8 ft deep interior vaults pumped
I am calling today for the City of Vallejo and the U.S. Navy and their partner managing agencies and organizations and neighboring property owners to develop a plan in partnership with the community so that public health and safety risk on parcels in long-term management can be effectively managed to be most protective of public health and safety.

We have graffiti removal teams and trash cleanup teams. We could have volunteer citizen hazardous conditions monitoring teams.
RIP Brad Pitt
the dog

We owe you and all the other critters and people who find themselves on our lands for whatever reason, safe passage. If we can put millions of dollars into protecting the public from hazardous materials, I pray that we put our heads and hearts together to see what we can do to ensure public health and safety and protect from other risks, too.
1.0 INTRODUCTION

The Department of the Navy (Navy) prepared this monthly progress report (MPR) to discuss environmental cleanup at the former Mare Island Naval Shipyard (MINS) in Vallejo, California. This MPR does not discuss cleanup work by the City of Vallejo, its agent, Weston Solutions, or its developer, Lennar Mare Island, through the Environmental Services Cooperative Agreements (ESCAs). The work completed through those agreements this month is reported separately. This MPR discusses progress made during the reporting period from December 29, 2017, through January 25, 2018. The information provided in this report includes updates to field work and removal actions, document submittals, the progress of regulatory reviews, issues associated with Navy environmental programs, and Base Realignment and Closure (BRAC) Cleanup Team (BCT) and Restoration Advisory Board (RAB) meetings.

2.0 FIELD WORK, ACTIONS, AND UPCOMING EVENTS

The Navy performed field work at the Installation Restoration (IR) Site 1, IR Site 5, and Unexploded Ordnance (UXO) Site 14; and IR Site 4.

IR Sites 1 and 5 and UXO Site 14

The Navy performed field work for the initial assessment of perfluorinated compounds or per- and polyfluoroalkyl substances (PFAS) in groundwater at IR Site 1, IR Site 5, and UXO Site 14 from January 8 through January 16, 2018. The field work included redevelopment and sampling of existing groundwater monitoring wells to evaluate four areas identified at former Mare Island Naval Shipyard where substances containing PFAS may have been used or disposed of. Analytical results for the groundwater sampling are expected to be available in early March.

IR Site 4

The Navy performed field work at IR Site 4 on January 4 and 17, 2018. On January 4, 2018, the Navy removed and collected data from the pressure transducers deployed in the groundwater monitoring wells and stilling well on the site. On January 17, 2018, the Navy surveyed the boundary of the wetland area on the site.
3.0 DOCUMENT SUBMITTALS AND PROGRESS OF REGULATORY REVIEW

The Navy submitted the following document during the reporting period:

- Final Second Five-Year Review Report for Investigation Area (IA) H1 and Marine Corps Firing Range (MCFR)

The Navy received comments or concurrence from the regulatory agencies on the following documents during the reporting period:

- Comments received from the Department of Toxic Substances Control (DTSC) on the Draft Final 2016 Annual Monitoring Report for the Paint Waste Area Wetland Monitoring. The Regional Water Quality Control Board (Regional Water Board) deferred comments to DTSC.

- Comments received from the Regional Water Board on the Draft Finding of Suitability to Transfer for Parcel XV-B(1)a (FOST 15)

4.0 REGULATORY REVIEW: YEAR-TO-DATE PROGRESS

The documents presented in the following table include only documents that address sites where the Navy remains responsible for the cleanup work.

<table>
<thead>
<tr>
<th>Document Type</th>
<th>Number</th>
</tr>
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<tr>
<td>Number of Documents Submitted by the Navy</td>
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<tr>
<td>Number of DTSC Comments Received by the Navy</td>
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<tr>
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<tr>
<td>Number of EPA Comments Received by the Navy</td>
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</table>

BCT meetings are held regularly with the Navy, DTSC, and the Regional Water Board to discuss the progress of environmental cleanup at MINS. The next BCT meeting will be held on March 29, 2018.

RAB MEETING SCHEDULE

The RAB meets the last Thursday of every other month, unless otherwise noted in bold. The next RAB meetings are scheduled for:

- March 29, 2018
- May 31, 2018
- July 26, 2018

Meetings begin at 7:00 p.m. and are held at:

Mare Island Conference Center
375 G Street, Vallejo, CA 94592

NAVY CONTACT INFORMATION

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San Diego Fax: (619) 524-0575
www.bracpmo.navy.mil
INVESTIGATION AREA H1 (IA-H1) AND WESTERN EARLY TRANSFER PARCEL (WETP) - DOCUMENT STATUS

The final document to be prepared under the WETP Environmental Services Cooperative Agreement (ESCA), other than annual reports related to on-going maintenance, is under review by the Navy:

- Land Use Control Remedial Design for Installation Restoration Site 05, Dredge Pond 7S, and the Western Magazine Area (to address land use controls and implementation)

The following document will be submitted in late January 2018:

- WETP Third 5-Year Report

INVESTIGATION AREA H1

WESTON continues operations and maintenance activities of the 72-acre IA-H1 Containment Area cap and perimeter groundwater collection trench system. The IA-H1 Leachate and Groundwater Collection System continues to operate normally. To date over 33,367,505 gallons of groundwater/leachate have been collected and discharged to the Vallejo Sanitation and Flood Control District treatment works.