US ARMY CORP OF ENGINEERS

Moderator: Courtney Chambers
September 18, 2013
12:27 pm CT

Courtney Chambers: All right at this time I'm going to give you today's speaker on Beneficial Use of Dredge Material. Mr. John Childs is Senior Research Civil Engineer for the US Army Engineer Research and Development Center. He is currently located in Portland, Oregon at the Northwestern Division office as a satellite employee for the Environmental Laboratory. John has been a licensed civil and environmental engineer since 1994. His research is focused on dredge material management -- specifically beneficial use of dredge material. John is leading the effort to update and combine the ocean testing manual and inland testing manual into one comprehensive US Army Corp of Engineers and Environmental Protection Agency document that includes guidelines for testing, assessment, and management of dredge material in the aquatic environment. Prior to employment with ERDC in 2010 John had 20 years of combined experience with the private sector and the port authority where his project work included management of a clean and contaminated sediments throughout the US as well as British Columbia, Canada, and Newcastle, Australia. He has been lead or a team member of multiple sampling plans, Section 401/404 of the Clean Water Act permit applications, remedial investigation reports, feasibility studies, dredge material management plans, health and safety plan, dredging design, and a number of technical publications. John has set on several value engineering review teams and was recently selected as the subcommittee chair for the Dredging Operations subcommittee of the coast's oceans, ports, and rivers Institute of the American Society of Civil Engineers.

John we are very happy to have you with us today. And just a reminder participants this information about John along with his presentation from

today and a recording of this meeting today will be posted on the DOTS' Web site. At this time John I'm going to give you the presenter rights and we can begin.

John Childs: Okay thanks Courtney. And thank you Cynthia for setting these presentations up. Good morning everybody. Good afternoon to others depending on the location you're in. I'm pleased to talk about the beneficial use of dredge material or as I prefer to say managing dredge material for beneficial purpose. We can also say managing dredge material with purpose

So the objective of the presentation - really the objective of beneficial use is to achieve sustainable dredge material management strategies that both maintain costs while increasing benefits and so we're going to talk today about beneficial use in the traditional sense.

I'll present a few examples and then we're going to look at it from a dredge material management strategy. We'll present a plan to increase beneficial use and then we'll have some discussion. There'll be time - I'll allow some time for discussion on these topics.

So let's begin with a couple of questions here. What is beneficial use? Is it a dredge material management strategy? Is it reuse of dredge material for beneficial purpose? Or is it all above? And the second question -- how do we increase beneficial use? Do we do it through the Regional Sediment Management program, Engineering with Nature program, or more in water placement. So kind of a trick question but what I would like to ask is that we look at beneficial use from a navigation perspective and think of it as a dredge material management strategy. Of course technically both questions could be answered with all of the above.

Courtney Chambers: John one quick reminder. Participants if you would just double-check that your phone line is on mute. That would be very helpful thanks.

John Childs: So if you - if we look at beneficial use as a dredge material management strategy we know that all dredge material management is not going to be used for beneficial use. It's not going to be the - necessarily the best strategy in all cases. Sometimes disposal is actually the best strategy. But if we begin with looking at our dredge material and looking at strategies then we include beneficial use as one of those options. That's what I would like to ask.

And on the second question, beneficial use of course is consistent with the Regional Sediment Management and Engineering with Nature but again from a navigation perspective we can consider more in water placement.

All right so let's look at the categories of beneficial use. And these categories are very similar to what we had in 1987 in our engineering manual -- 26 years now. The second category is a little bit different looking at sustainable Regional Sediment Management. So that's maintaining sediment in a natural literal system. So that's a little bit different than what we had in 1987. But otherwise these are consistent.

The fifth category Engineered Capping that can be upland or in water -- technically speaking it can be inland or ocean. It is acceptable in either situation. Category Six I've got an example of agriculture. Category Eight again -- depending on the location in the country --there's been a lot of commercial land development. And as far as the timing it's been in the 40s and 50s. Other places it's been in the 60s and 70s and even the 80s. So around the country there's been a lot of commercial land development using dredge material as a foundation.

And Category number nine commercial product development. There's been a lot of research in the last 20 plus years on physical separation, treatment of dredge material to reuse it for construction. Economics is going to drive this category and it's - it is being used especially to increase capacity to our CDFs. But again I'd like to look at the biggest bang for the buck in that top four categories and that can be a mix. So there could be a project that is beach nourishment project that also has a shoreline stabilization aspect of it which is consistent with Regional Sediment Management practices and it also develops some habitat.

All right I've got a couple of - I've got three examples actually to go through. And I know we have a lot of good examples throughout the country. This one is in Baltimore District and (Bob Blama) has been successful in developing several beneficial use projects with both navigational dredge material as well as mine material. This is on Barron Island.

Take home message on this site is getting a contractor or knowledgeable folks on the planting. So there wasn't a whole lot of extra costs to get the planting in. And it was done for a back area of the - of this island. It increased the footprint back to what it was. The planting stabilizes it and so it's a real good example of some nourishment there - for island nourishment. The lower portion is on the bay side of the island and there (Bob) used geotubes and then basically a rock levee to contain dredge material. And he's got a tech note that may be of interest to some folks. The Detroit District is working with (Burton Suedel) and (Joe Kreitinger) on this project. And this is a great example of two categories. One is Category Five capping -- it's capping some mercury contaminated sediment but also at the same time recreating habitat so Category One. Sub-aquatic vegetation is being created by using the dredge material.

So there's two components there and the third -- which is really important especially in the Great Lakes area -- is that they're maintaining capacity in their CDFs. Where a lot of the CDFs are at or near capacity --in this case it shows 95% capacity is exhausted. So it is very important to look at the in-water placement of dredge material in this situation and here there was benefit.

San Francisco -- Jessie Burton Evans was kind enough to take me out to this project and take a look at it. This is in Sonoma County. There's quite a bit of capacity in this area. Essentially it's an agriculture enhancement project. You can see in the lower left there's a schematic. And dredge material is used to raise the elevation and by raising the elevation for the crops it not only enhanced growth but also production.

Okay so I know there's a lot of great beneficial use projects out there. In fact later in the presentation I've got a template that we're going to post on the beneficial use Web site. And we're going to ask districts to update our beneficial use Web site with examples using this template. But let's look at beneficial use from a dredge material management strategy.

Let's start with our Corps of Engineers program. Over the last 15 years -- on average -- we've dredged approximately 225 million cubic yards of sediment. And that's annually -- each year. In addition to that there's 75 million cubic yards that are dredged by permits through the Corps and EPA. So we've got 300 million cubic yards each year. It's a phenomenal number. In 2011 it's essentially an average year for quantity. And the - and with that quantity based on -- again -- an overall national average.

The Corps managed their dredged material for - excuse me dredged, conveyed, and placed, and managed for five to six dollars a cubic yard. So it's

important to realize there's not a whole lot of leeway in doing these beneficial use projects unless they are part of a dredge material management strategy. But it's also important to look at because you can save 50 cents a cubic yard to a dollar. Then you're looking at 10 to 20% of a project cost so that's important also. In 2011 36 million cubic yards went to the ocean.

And the last two bullets are based on essentially professional judgment of data that's been collected. So let me go to that data here - how those were assumed. You can see the breakout of our 225 million cubic yards over the last 15 years and this is based on a database called Dredging Information System or DIS. It was developed for contractors to give contractors a heads up of upcoming projects. And so it's not - it wasn't really created to track our dredge material.

And this is really the best we have to look at where our dredge material is going. And you can see by the categories it's not real useful in knowing where our dredge material is going. It's a guesstimate for how much is being beneficially used. You can see a lot of it's overboard in open water. It's not clarified if that's ocean disposal, or flow lane, or exactly what that is.

You can just see the various percentages -- wetland nourishment and creation 8%, undefined or not described 7%. So you can see we've got some work to do on tracking our dredge material -- where it goes and with that that will help us see how much material is being beneficially used.

All right, if we're looking at this from a dredge material management perspective it is only ten yards. It's a 15 yard cable arm bucket but basically we consume 10 yards in a truck and trailer each. It's not a real efficient way to manage 225 million cubic yards. In this case it was actually a permitted project so it's ten yards of 75 million.

Now was it beneficial use? Yes it was because - there's actual definition to the left of the screen. Beneficial use is defined as using dredge sediments as a resource in a productive way which provide environmental, economic, or social benefits. This is actually used for capping daily landfill cover so yes it was beneficial use. But from a dredge material management perspective it's barely a drop in a bucket.

So we need to look at a more comprehensive approach. All right if we assume - and I see it on the screen somehow these arrows got a little goofy but if we assume that 50% of our dredge material is being beneficially used we also know then that at least 50% is being disposed. Engineering with Nature and Regional Sediment Management are programs or philosophies that encourage beneficial use. And I've got a slide here we'll describe those a little bit more.

But how do we increase the beneficial use? Well Engineering with Nature looks at a problem or a project and the idea is to use natural and engineering processes to develop an economic - a solution that is economic, environmental, and social benefits - that has those benefits through a collaborative process. So that certainly allows for beneficial use and it would certainly encourage it.

Regional Sediment Management looks at sediment as a resource. And it describes looking at a system -- either a watershed system or coastal system -- and maintaining the sediment in the littoral system where it belongs. That also encourages beneficial use. From a national perspective emphasis - from a national and international perspective there is - certainly encourages beneficial use.

We can look at the orange box and see that there's potential advantages. The CDF capacity as we know is decreasing. We want to be able to look at

alternatives. We want to utilize dredge materials as a resource in an environmentally and socially productive manner. The American Society of Civil Engineers recognizes RSM -- Regional Sediment Management. They recognize the sediment as a resource.

And the National Dredging Team-- let me read something - the National Dredging Team they got together - the National Dredge Team is made up of EPA and the Army as well as DOT, Noah Fisheries, US Fish and Wildlife and other stakeholders. And you can see that they are suggesting that the dredge material is a valuable resource and that all levels of management should recognize this.

They also say that much of the sediment dredge could be used in a beneficial manner such as habitat restoration and creation, beach nourishment, and industrial and commercial development. Yet much of this dredge material is disposed in open water, confined to disposal facilities and upland disposal facilities. It says that...

Courtney Chambers: John right quick can I ask you a question?

John Childs: Sure.

Courtney Chambers: Can you identify CDF for us right quick?

John Childs: Oh sorry about that. Okay CDF is a confined disposal facility. Typically a Confined Disposal Facility is near shore or upland. Typically material is pumped into the CDF and has return water go back into waters of the state. So it's permitted under the Clean Water Act. There are in-water confined facilities but those we typically refer to as CADs or Confined Aquatic

Disposal facilities. Those are typically in water. So thanks Courtney I didn't mean to...

Courtney Chambers: Yes.

John Childs: ...to do that.

Courtney Chambers: No thank you.

John Childs: So I want to just highlight here that this is a priority of the National Dredge Team. In 2003 the report talked about the next decade and we're into the next decade. And so we want to - we all recognize that this is a big issue. All right so here's - I'm going to propose a plan that will increase beneficial use. And I believe that dredge material management is going to be one of our biggest challenges in navigation over the next decade. I agree with the National Dredging Team that it is a high priority.

So let's look at the - a few things here. First, consistent terminology. Consistent terminology for -- not only for beneficial use but also for dredge material management. I don't think it's asking too much for our industry to come up with consistent terminology. And I'll propose some - 12 categories. The second is to track quantities -- not just of beneficial use but to track quantities of dredge material management. That way we know where this material is going. And we can identify then research opportunities. We can identify areas that we need to concentrate to be able to do more beneficial use.

The third, identify funding and collaboration opportunities. And funding is typically referenced as a hurdle. And of course that is a challenge but collaboration with other programs such as Ecosystem Restoration or Flood

Control. I think that's - I think there's a long way we can go there. There's not many projects around the country where we've actually done that.

And then fourth, it's really around engineering -- using good engineering techniques to evaluate our dredge material management strategies and our dredge material management decisions. There's a program of D2M2 that helps with that. But it's even broader than just the D2M2 -- it's using D2M2 as a tool to look at dredge material management options and technical guidelines. We do need to supplement our technical guidelines or update our guidelines from engineering manual of 1987. And I intend to - that's one of the things I'm working on over the next year plus - to do that.

The sixth item is to quantify environmental value or quantify the value of these projects. And this is quite an interesting field that brings in economists, ecologists, and engineers so I've got a slide on that.

And then the seventh is to monitor and apply depth of management. Well, one way to do this is to update our projects, collect the information and begin a solid database of projects and pass these lessons learned on.

All right. The terminology considerations, this was, this goes back a little while. In the 1990s, Larry Patella, those of who involved in WDA, Western Dredging Association, of course know Larry. And he stood up and said "We shall not describe dredge material as dredge spoil anymore." He said they were going to describe it as dredge material. But we also used that term and some people may think of maybe a slip within a port mechanically dredged, and of course these things I've seen in dredge material.

So let's use caution with that term and even look at dredged sediment, the term dredge sediment. So I've been using these interchangeably, I still use

dredge material. But dredge sediment is really a more appropriate term when we talk about beneficial use. All right.

So the, as far as consistent terminology, I'm going to propose 12 categories and I've sent this on to a few folks. As I say, I don't think it's asking too much for our industry to come up with some consistent terminology. We're not going to get, it's not going to be perfect in all situations, but note here that I've got not only where the material is going but also the purpose. And one thing I forgot to mention in the categories of beneficial use is, it's really purpose-driven, so why the material is going there.

Here what I'm trying to do is connect navigation operations with beneficial use. So we're looking at not only where material is going but why it's going there. And that way I think we can make that connection.

In, let's see, we can go through these briefly, placement near shore for shoreline protection or beach nourishment. You can see that in that situation, if there's a feeder berm or it's direct placement, that's going to be included all in category one. Placement near shore for ecological habitat. Now again, there might be a mix, there might be a category one and category two, or there may be, mostly it's for shoreline protection, but there's also an ecological habitat that comes from that.

Category three, confined in-water placement for beneficial purpose, and we saw in Detroit the Detroit district did the project, and that was where it was placed in water. Material was used as a cap, but there was also a habitat component of it, so it's confined in-water placement for beneficial purpose.

Category four, it's confined in-water placement for disposal. As I say, if we look at it as a dredge material management strategy, in some situations it's

going to be for disposal and in some situations it will be for beneficial purpose, so there's one category for disposal. Then confined in-water placement in river, lake or estuary. This is again regional sediment management, and in most cases I would say that maintaining the sediment in a littoral system will be beneficial.

Category six is island placement, separate that out so that we can track how much material is actually being placed on-island for nourishment or creation. And then we've got beneficial ocean placement for, or we've got ocean placement for beneficial purposes as well as disposal purposes. And category seven, (unintelligible) is an example of that.

Allan Ota: Hey John, this is Allan Ota, region nine.

John Childs: Yes.

Allan Ota: I was going to suggest another category perhaps for your terminology list here. Out here in the San Francisco Bay delta area, we have a lot of dikes, like about a thousand miles of dike. You know, protecting areas around the Sacramento River and other river areas. And you know, it seems like we should have something for placement for, you know, maintenance of dikes and levees or something like that.

John Childs: Well, let's look at that, because it could be for, either category one for in-water, or now we have the upland that could be used for land development. I don't have dike restoration or dike creation in category one, so that's a good comment. Upland placement for reuse is typically what I would think of as more of a rehandle project or recycling the material. I will add that in to category one for upland, but it also can be categorized in number one depending on the elevation of the material and the regulatory program.

So here's the four categories I have for uplands, so between upland and in water there's a dozen categories that I'm proposing for consistent terminology.

All right, on this slide there's two concepts I want to get across here. One is the, as far as dredge material management descriptions, you can see that we've got a placement location which is where, and a beneficial use which is why. So if we try to think of where material is going and why it's going there and connect those in the description, we'll have a much easier time tracking our dredge material and identifying what's being used for beneficial use.

And then on the right hand of the slide, now this is almost like an energy grade line.

Courtney Chambers: All right John, just one quick reminder for everyone. If you just double-check that your phones are on mute, it would be helpful, thank you.

John Childs: Yeah, we're getting some background so maybe folks could check on the mute button there. So on the right-hand side, if we look at the elevation and consider energy to raise material upland, and you can see a picture of trucks lined up. This is removing material from the CDF, we automatically see that that takes more energy than placing it either on the shoreline, shallow water or deep water depending on how far out the deep water is.

So thinking about fuel, thinking about carbon footprint, thinking about what the actual risk would be to maintain the material in water is important to do when you're evaluating dredge material management options.

Okay, so this, we've talked about the dredge material management, we've talked about beneficial use. I want to talk about the technical guidelines, and probably in the most simple format, we can break it down into these four categories. And as I say, this will be going on more, I'll be working on this more over the next year and beyond.

I'm going to hit on material suitability briefly, but you can see that site selection, placement logistics, there's, we've got a lot of work going on in the placement logistics, sediment processes, sediment transport, (Joe Gailani), (Terra Lackey) and their group are working on modeling, there's a lot that's being done there, and we need to, yeah we need to include that in our technical guidelines.

And then management, you can look at it from both site management and project management. I want to mention something on the vegetation with respect to elevation at the very end. But in here again we see monitoring and adaptive management. And I understand the monitoring is not part of many of these programs, but we've just got to at least from a baseline perspective, identify these projects. And somebody's off mute.

Courtney Chambers: Right, we're getting some conversation in the background, please double-check that mute button.

John Childs: Okay, so we heard (Jeff Steevens) and (Trudy Estes) talk about testing, Dr. Steevens talked about the in-water testing, and if you look at this, these boxes here and look at the lower left is the ocean testing manual and the center is the inland testing manual. And (Jeff Stevens) talked about the aquatic environment testing, (Trudy) talked about upland.

Just a note on the upland, the, we call it the upland testing manual but there's actually a lot of great information that is included for confined disposal facility placement, return water, and modeling that return water.

So these are looking at material suitability, which of course is very important. And you can see the larger box up top is the technical framework, and this is a EPA and USACE Corps and EPA document, 2004, and Evaluating the Environmental Effects of Dredge Material Management Alternatives. So this is the overall technical framework. It's good to look at that technical framework before getting into the testing manuals to understand the overall aspects of dredge material management.

Just a quick note, we are working on an update in a combined document for aquatic placement, that includes not only testing but also assessment and management. So we'll have more discussions about that in time.

A good way to begin projects is looking at a conceptual model, or a conceptual operational model. And this is a cartoon, risk assessor's like the box-and-arrow diagrams and looking at risk and receptors, pathways and receptors. I like to start with a, this is really just a conceptual cartoon, and I like these, because it helps us understand the project, we can identify the potential receptors and then determine what we need to do to get an accurate understanding of potential risks.

So that's a good way to start looking at the project itself, it helps from really all four of those aspects, material suitability, site selection, placement logistics and site management, project management.

Funding is, as I say is commonly referred to as a hurdle. The thing I want to mention here, probably two things. One is that there's a document that I've

got showing in the, at the end of the slides for reference. But there are various worded bills that do allow for projects above the baseline and looking at non-federal sponsors.

Most importantly, I think that we don't use collaboration enough and look at our ecosystem restoration projects, so combining navigation with ecosystem restoration or flood control. I know there's a couple projects out there, but not many. And if you look at item number four, I think one of the challenges is that, the scheduling, sequencing of events so that we can use the navigation dredge material for other programs to meet other missions.

But, an idea here is aquatic transfer facilities, not a new idea but to be able to place material for the navigation in a temporary holding area in water and then for the ecosystem restoration project or flood control project to come in at a later date or when this area, this aquatic transfer facility has enough material to be able to efficiently convey the material from the temporary transfer area to the final location.

Tracking dredge material, this is, I really see that this is a great opportunity for districts. It's a work in progress with Mobile district, Teresa Parks, OPJ and others, and Linda Lillycrop is working on the overall approach to this, the dredging information framework. But here, this could be a real-time tool, and I want folks to understand what the possibilities are here.

If, just operations is in a conference room and we've got the channel framework, or the channels identified in channel framework, and we're using E-Hydro to identify shoaling areas within those channels, and in addition to that we have our placement sites identified, so ideally we have our navigational placement sites but also we would have ecosystem restoration sites or flood control sites that want or need sediment.

And then using optimization tool like D2M2, dredge material management decisions to evaluate the various alternatives, in this way we can look at the base plan, we can identify not just the base plan but look at alternatives, and we can physically see how far away placement, potential placement areas are and quantify that, and that can be done not just in a conference room of navigation folks within the Corps, it can be expanded to stakeholders.

So the stakeholders understand what the ramifications are of taking material further away or, you know, maybe further away for disposal and there's actually a nearby location that can actually use the sediment. But the sediment needs to be sequenced so that there's maybe some material that has bio-accumulation concerns on the bottom and then other material on top.

So this, to me I think this is a very powerful tool, and it's something that, there's a work in progress, there's some districts that we're asking to do some demonstration work on this, and so more to come on this from Linda Lillycrop and others.

And here's another aspect of beneficial use that's, I wouldn't say is new but is gaining more and more attention.

Operator: All participants are now in listen-only mode. All participants are now in interactive talk mode.

John Childs: All right, well I'm not sure what that's about, but we're, got a couple more slides here.

Courtney Chambers: John, that was an attempt to mute all participants, I'm sorry for the interruption.

John Childs: That's okay.

Courtney Chambers: We're back online, please go ahead.

John Childs: All right, good try. So it sounds like maybe folks need to recheck their mute buttons.

Courtney Chambers: Yes, we were doing pretty good there but just thought we would take that attempt to ensure a quiet background. But please just proceed and we'll just hope that people are aware of their mute buttons, thank you.

John Childs: Thanks, (Courtney). All right, so this is, looking at ecosystem goods and services, that's really an economist's terminology, but we can also look at function, and this is a way that we can begin to look at ecological engineering. And look at prioritization of various projects, of using the sediment or using the dredge material for beneficial purpose, and comparing one project to another.

So not only are we going to be able to look at engineering aspects, what's the most economical method, but if we begin to include the benefits, the environmental and social benefits, and put value on that, whether it's a monetary value or some other type of value, we can then as I say, prioritize projects.

So I'm quite excited about this science that's, I think, is going to gain a lot of advancement and I think dredge material management is an opportunity to help advance this science of ecological engineering and quantifying value.

All right, I had this project in here, this is another one of Bob Blama's projects, and this was, actually an ecosystem restoration project. There's a few lessons in here, some really valuable things. He's got thin-layer placement going on, he's got some straw bales that were used for confinement successfully, and if you look at the, right in the center, the sacrificial hay bale site confinement and then to the right, that picture was taken I guess just a month ago, the one on the right, so you can see that naturally this material is coming back. So if we were able to begin to quantify the value of this project, well then the Corps can get the credit where credit is due, and I just, I think it would be great to do that.

All right, I'm just about done. I want to show that (Danielle) in Baltimore helped with a, did a case study template along with (Damarys Acevedo), and (Danielle) also put together an example project, so we're going to get these examples, the example as well as the template on the beneficial use website. I'm going to encourage and ask districts that they fill this template out so that we can update our projects and begin to develop a database to get the lessons learned.

And there's some resources here, Joe Wilson worked on these two documents that, the far left and center, on the role of the federal standard. It's good to understand the funding aspects of it. On the far right is the engineering manual, these are additional guidelines. Wetlands Engineering Handbook is a very good resource, and then there's a summary of available guidelines for beneficial use, and some websites that you can use later on.

The Navigation Data Center, second from the bottom has the statistics of the dredge material management and has a annual data information card that you can look at. And then finishing up here, we can begin discussion or talk about questions if there are any.

But one note, Dr. Pam Bailey at ERDC, is working on vegetation. And I'm quite interested in working with Pam on these beneficial use projects, because if you take a look at this slide, this is a nice Oregon day here, but if you take a look at the slide and kind of follow, I don't know if you can see my arrow, but follow the footprints out right to the tip there, you can see that there begins some vegetation, I know that it's a little hard to see.

What I want to make a point of is how challenging these ecological projects are. This is mudflats and within maybe 10 centimeters there's no vegetation, and then all of a sudden you've got some vegetation. So there's a culmination of hydrodynamics and sediment transport. There's vegetation, what's going to survive and so it's a challenge, but I think we can, if we look at these dredge material management strategies, combine them with accurate tracking and also begin to look at ecological engineering, I think that's what, will go along way for our beneficial use program.

Okay, (Courtney), are there particular questions that we want to begin with, or are there any questions?

Courtney Chambers: Yeah, we'll open it up at this time. If you'd like to ask a question over the phone line, at this time, you're welcome to take your phone off of mute so we can hear you. Or please utilize the chat feature. We did receive one throughout your presentation from (Carolyn), it said "The biggest impediment to beneficial use since the federal standard requiring cost-sharing for any disposal that does not include it in the base plan DMMP of the project. Is there any movement on this policy issue?"

John Childs: Yeah, and I would encourage (Carolyn) to take a look at those documents, the funding, the beneficial use project. We can have some additional discussion,

but I think that part of it is looking at alternatives. Dredge material management alternatives, and maybe there is some, there are projects that can be performed that are within the base plan. And if they're not within the base plan, can collaborate with other missions, be done with other agencies, can there be a non-federal sponsor.

So I think it just means that part of it is we need to roll up our sleeves and really look at the dredging, the conveyance, the placement, the long-term management and so that's how I would answer that question. So I understand the federal standard, I understand the base plan, I think it important to understand what the options are for navigation to, and that can be answered with those documents.

Courtney Chambers: Okay, thanks John, I've received a few more here in the chat feature. From (Jeannie), she asks or mentioned that it would be, she thought it would be useful to consider beneficial use relative to invasive species management. Then think habitats in San Francisco Bay and elsewhere, are usually hugely impacted by invasive species and important therefore to include in the dialogue on this checklist.

John Childs: That's...

Courtney Chambers: More of a comment.

John Childs: Okay, and that's a great point. When we're placing this material there tends to be a lot of seeds. I've seen a lot of seeds included, we do need to consider invasive species. But we also might be able to use dredge material for control of invasive species. So again, it's a good understanding of the ecology combined with the material.

Jessica Spencer: This is Jessica Spencer, actually along those same lines, I know here in Jacksonville I know a lot of our dredge material management areas, they do have a whole suite of invasive species, you know, that are growing on them. And you know as a result that kind of limits the beneficial use of those soils, depending on, you know, how long those seeds are going to be viable, you know, we would be going against the Executive Order 13112, it states, you know, federal agencies should not do anything to promote the spread of invasives.

So I think you know developing management strategies for these areas where the material's going to be stored, you know, temporarily before it gets used for, you know, beneficial use, is something that should be considered as well.

John Childs: Right, or maybe it's better to keep the material in water.

Jessica Spencer: Right.

John Childs: Where the invasive species aren't even going to get a chance to sprout.

Jessica Spencer: Exactly.

John Childs: So that would be, you know I think the San Francisco Bay has, there's a lot of opportunity for material to stay in water.

Courtney Chambers: Here's another, I'm sorry, go ahead.

John Childs: (Courtney), I was just going to say, we want to reserve some time for (Cynthia), maybe, I don't know, another one or two quick questions.

Courtney Chambers: Okay, I've got, sorry, go ahead.

(Jonathan Freedman): I had one, this is (Jonathan Friedman), EPA, region ten, it's going back a few slides, but you distinguished in your categories between ocean disposal for beneficial use and ocean disposal for disposal. And I was wondering if you could elaborate, I'm not sure that's exactly how you worded it, but I was wondering if you could elaborate on the ocean disposal for beneficial use and what you had in mind.

John Childs: Sure, I realize EPA has some concern about that. From a technical perspective there's no reason why for example Palos Verdes couldn't utilize dredge material for capping. HARS is a example where dredge material is being used for beneficial use and EPA has accepted that. So I'm really referring to it from a technical perspective, and I think that you know, thinking about the national dredging team, where everyone is trying to get behind the ideal of using sediment as a resource.

That we should look at ocean placement for beneficial purpose as a dredge material management strategy or alternative. And Jonathan, we'll talk more about that later on if you'd like, send me an e-mail if you'd like.

Jonathan Freedman: Sure, yeah, okay, that'd be great.

John Childs: Okay, good.

Courtney Chambers: John, I've got a few more here in the chat feature, and then we'll be sure to turn it over to (Cynthia). I've got a question, "Has anyone ever successfully utilized fluff dredge sediment beneficially."

John Childs: Fluff dredge, so that's high water content, is that, maybe in water? I would, without understanding all that, I would say that in one of the dredge material

management strategies I would look at agitation dredging or potentially water injection dredging. Agitation dredging is getting the material out of the navigation system while maintaining it in the littoral system, that could be done with overflow from a hopper dredge. Water injection dredging is fluidizing that material so that it goes, essentially uses gravity. As far as...

(Ed Creef): This is (Ed Creef) in New Orleans district, I'm the one that put that question out there, and I kind of meant to put my name on it, but it didn't turn out that. But I'm really asking the question is, you have a category of suitability of dredge material for beneficial use, and it's mostly concerned about contaminants. But what about these fine, super-fine grain fluff sediment that you encounter in the coastal system that are difficult to use, at least to our experience, to construct any coastal habitat.

Has anyone out there ever experienced a success story with using fluff sediment to construct coastal habitat.

John Childs: Well I would think probably not for coastal structures, but that doesn't mean that that material can't be used in a beneficial manner. So maintaining it in a littoral system or maybe pumping it for wetland, again I, maybe we could talk amore about this, but pumping it for wetland nourishment, coastal structure, I would say probably not. I'd be surprised, but using that material beneficially could still be done. And maybe in the end there's not an option and maybe it does need to be disposed of.

Courtney Chambers: All right John, we have received a couple other questions in the chat feature, but I think due to time, we need to cut the questions off for the moment and allow you to address those in a follow-up, and we'll post the answers to those questions on the web site with the rest of today's meeting documents.

John Childs: Okay, thanks (Courtney).

Courtney Chambers: Yes sir and at this time I'm going to turn it over to Cynthia Banks, she's the coordinator of this DOTS series and she's got some additional information for us.

Cynthia Banks: Good afternoon everyone, I'm Cynthia Banks and I'm the DOTS program manager. I didn't want to take up too much time but I did want to take a moment to thank everyone for participating in the DOTS summer webinar series. We've been documenting this very well and we noticed that some of you have been on attendance for all five, so we really appreciate everyone.

I also want to thank John today for your presentation and all of our presenters, and (Courtney), thank you for your logistical support, (Julie Marcy) and (Jenny Dickerson) also provide support to us.

I want to give you a heads up about our intentions for this series. Originally we wanted to limit this to the summer months, but there's been so much interest in all of our topics so we have decided to continue the DOTS webinars. And so I'm telling everyone to just basically just be on the look out for future notices, because you'll be getting those notices from me.

And in addition, we are interested in your input, so we now have a link on our DOTS website, and the link is on your welcome screen there in front of you. If you go to that link, you can submit a topic to us for our consideration, so we want to be very engaging with you all, so if you have a topic of interest that you and a group would like to have, please submit those topics to us.

And again, I just want to thank everyone for making this webinar series a huge success and we are looking forward to all of the interesting webinars we'll have going forward. And I guess I'll turn that back over to you (Courtney), if you want to try to field a few more questions.

Courtney Chambers: Okay, thank you Cynthia. I guess John are you up for one more question that I've received in chat or would you prefer to follow up with me now.

John Childs: No, that's fine, I see Ryan Gross from EPA headquarters has a question also, so go ahead (Courtney).

Courtney Chambers: Okay, the one I received was from Lawrence Smith was, "The one from Palos Verdes example would not be characterized as disposal, that would be an example of beneficial use to just a cap a Superfund site."

That one, I guess that was more of a comment.

John Childs: Yeah, and I sent Lawrence Smith an e-mail back, it, good clarification, it's not under MPRSA, it'd be under Clean Water Act 404.

Courtney Chambers: Okay,

John Childs: But I think we can still call this beneficial use. Maybe it's, I guess it would be considered ocean placement for beneficial purpose, although under the Clean Water Act. So that was a good clarification.

Courtney Chambers: Okay, thanks.

John Childs: Lawrence, anything, send me an e-mail if there's anything else Lawrence, it'd be interesting to talk about the Palos Verdes project.

Courtney Chambers: Great, thanks John, did you say you had one other that you'd like to address before we close out today?

John Childs: Ah yeah, (Ryan) just asked about the, (Ryan Gross) asked about the tracking system, and as far as scheduling of that. I think it's a little ways out, but I think we'll be seeing good progress over the next six months. So (Ryan), you and I know each other, so I'll keep you up to date on it.

Courtney Chambers: Great, thank you John, and just to echo Cynthia, thanks for a great presentation today and for each of your participation in this series, and please do watch for additional notifications from Cynthia Banks, and I do hope you all have a great afternoon.

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