

San Francisco Bay Conservation and Development Commission

375 Beale Street, Suite 510, San Francisco, California 94105 tel 415 352 3600
State of California | Gavin Newsom – Governor | info@bcdc.ca.gov | www.bcdc.ca.gov

DRAFT MINUTES AS AMENDED

August 6, 2024

TO: All Commissioners and Alternates

FROM: Lawrence J. Goldzband, Executive Director (415/352-3653;

larry.goldzband@bcdc.ca.gov)

Sierra Peterson, Executive & Commissioner Liaison (415/352-3608;

sierra.peterson@bcdc.ca.gov)

SUBJECT: Draft Minutes as Amended of June 20, 2024, Hybrid Commission Meeting

1. Call to Order. The hybrid meeting was called to order by Acting Chair Eisen at 1:06 p.m. The meeting was held with a principal physical location of 375 Beale Street, San Francisco, California, and online via Zoom and teleconference.

Acting Chair Eisen stated: Good afternoon, and welcome to our hybrid, but today almost fully virtual, BCDC Commission meeting. My name is Rebecca Eisen; I am the Vice Chair of BCDC. I am chairing this meeting because Chair Wasserman is unfortunately but necessarily absent today.

I am grateful to see Commissioner Moulton-Peters on my screen because she has agreed to be our Vice Chair today in the event we have Internet problems, which I am hopeful will not happen.

Acting Chair Eisen asked Ms. Peterson to proceed with Agenda Item 2, Roll Call.

2. Roll Call. Present were Acting Chair Eisen, Commissioners Addiego, Ahn, Eckerle (joined after Roll Call), Eklund, El-Tawansy (represented by Alternate Ambuehl), Gioia, Gorin, Gunther, Hasz, Lucchesi (represented by Alternate Pemberton), Moulton-Peters, Ranchod (represented by Alternate Nelson), Showalter, Tam (represented by Alternate Gilmore) and Zepeda. Assembly Representative Ting (represented by Alternate John-Baptiste) was also present.

Acting Chair Eisen announced that a quorum was present.

Not present were Commissioners: Association of Bay Area Governments (Burt), USACE (Beach), Department of Finance (Benson), U.S. Environmental Protection Agency (Blake), Santa Clara County (Lee), Solano County (Mashburn), City and County of San Francisco (Peskin), San Mateo County (Pine), Napa County (Ramos), Governor (Randolph, Wasserman)

3. Public Comment Period. Acting Chair Eisen called for public comment on subjects that were not on the agenda.

Bruce Beyaert spoke: My name is Bruce Beyaert; I am the Chair of TRAC, Trails for Richmond Action Committee. I am here to answer a question you asked after the briefing you had last month on the Richmond-San Rafael Bridge Pilot Program. The question you asked was about how usage of the Bay Trail across the Richmond-San Rafael Bridge compares with other Bay Area bridges.

The Bay Trail traverses four of BATA's state-owned bridges, Benicia, Carquinez Strait, the Richmond-San Rafael Bridge of course, and the Bay Bridge East Span as well as the Dumbarton Bridge.

UC Berkeley's Partners for Advanced Transportation Technology issued a final report on the Richmond-San Rafael Bridge Pilot Project and said the following, quote: "In the most recent peak season, bicycle traffic on the Bridge was the highest of all State-owned toll paths, including the San Francisco-Oakland Bay Bridge." End of quote.

To be more specific, during the last 45 days weekend bicycle trips on the Richmond-San Rafael Bridge were 324 per day versus only 206 on the Bay Bridge. On weekdays, bicycle trips average 132 across the RSR Bridge versus 128 on the Bay Bridge.

Pedestrian usage is very low on the Richmond-San Rafael Bridge because the pilot was designed for transportation, that is bicycles, and not for recreation and to be pedestrian friendly.

For example, there are no restrooms on either end of this long Bridge and there are only a handful of parking spaces. This contrasts dramatically with the Bay Bridge, which has a very large, user friendly, inviting parking area with restrooms at the Bridge yard in Oakland.

Of course, none of the state-owned bridges can compare with the iconic Golden Gate Bridge, which is an international tourist destination and literally crawling with people on foot and bicycle. So, the Bay Bridge, the Richmond San-Rafael Bridge is most heavily used by bicycles of all the state-owned bridges.

Finally, Caltrans has filed, in April actually, filed a request to extend the Richmond-San Rafael Bridge Pilot, and TRAC supports that and asks that it be extended administratively to the end of 2025 as the Bay Area Toll Authority has requested.

This will clear the decks and the extension will be settled and you will be in a good position to clearly address the proposal coming later to actually shut down the Bay Trail Richmond-San Rafael Bridge four days a week to provide a breakdown lane for automobiles, which TRAC of course thinks is a terrible idea. More on that later. Thank you.

Acting Chair Eisen stated: That concludes our public comment period. We will take public comment about any item that is on our agenda when we are considering that item.

4. Report of the Chair. Acting Chair Eisen reported on the following:

Construction Progress. We are almost entirely virtual today because of the first-floor construction at the Metro Center. Our staff tells us that construction is on schedule; and if that remains the case we can hope and expect that we will regain use of both the Board Room and the Yerba Buena Room for our meeting next month, which will be on July 18. As one of the Commissioners noted, we will not have a meeting on July 4. Our staff will keep us informed regarding the progress of the construction as they start planning for that meeting.

Consent Calendar. Today is the first meeting where we will consider a Consent Calendar. I know most of the Commissioners are familiar with Consent Calendars from the various boards they have sat on. Ideally, a Consent Calendar helps us to cut through red tape regarding noncontroversial matters and gives us more time to entertain public comment and to have our discussions in our presentations.

We are going to give it a try and see how that goes. We will ask for public comment on the Consent Calendar when we get to it in a minute, and we will also need to take a roll call vote to make sure we have a majority vote approving the Consent Calendar.

Rising Sea Level Working Group. The Rising Sea Level Working Group is going to be meeting the same day as our next meeting July 18 but in the morning; so will the Environmental Justice Working Group. Those meetings are going to be scheduled back-to-back so that everybody can attend all of them and they will be listed on our brand-new website's brand-new calendar. Larry is going to tell us more about that when we get to his report.

Next Meeting. Finally, our next meeting will be on July 18. I do hope that everybody has a safe and happy Fourth of July. It sounds like Pat for sure has wonderful Fourth of July plans. At our meeting on the 18th, we may take up the following matters:

A public hearing and possible vote on the restoration of Chipps Island, which is in the Delta.

A briefing on the proposed organizational development plan for our Environmental Justice Advisors.

Finally, an update on the progress of BCDC's Enforcement and Compliance Programs.

Ex Parte Communications. If a Commissioner has inadvertently forgotten to provide our staff with a report on any written or oral ex parte communications, you may report on them at this point by raising your hand. Please remember that your written report should be detailed enough for the public to understand the conversation's main topics, but your oral report should not be longer than two minutes.

(No Commissioners reported ex parte communications.)

Acting Chair Eisen continued: That brings us to our Executive Director's report.

5. Report of the Executive Director. Executive Director Goldzband reported: Thank you, Acting Chair Eisen.

Summertime, and as the Gershwin brothers wrote, living is easy. Today is the summer Solstice, the longest day of the year. And if you plan to go to the beach this weekend, just remember that on this day in 1975 the film "Jaws" was released. And with Star Wars being released on Memorial Day weekend two years later, the entire financial model of the film industry was forever changed.

For your BCDC staff, however, summertime is not just a time to hang out. We will be working hard in all of our facets as we bring you shoreline plan guidelines discussions, enforcement actions, permit requests, and budget news. And with all that hard work we will always be ready for some ice cream.

There is only one staffing announcement to be made today. Today is Steve Goldbeck's final staff meeting as a full-time, permanent state employee. Steve joined BCDC as a volunteer 38 years ago and was hired a year later as a coastal planner.

Among his many roles at BCDC, he wrote the Commission's first Water Quality policies and a few years later was the principal staff member in charge of first creating and then improving BCDC's Dredging and Sediment Management Program. He initiated and led the first beneficial reuse studies, which was the start of the Regional Sediment Management Program in the Bay Area, and established the Long-Term Management Strategy Program, which fundamentally changed for the better how we manage and dispose of Bay dredged material.

As a major result of the LTMS, he had a central role in BCDC's efforts to restore Sonoma Baylands and Hamilton Wetlands to tidal action and was the prime mover behind creating the Dredged Materials Management Office, which was the first multi-agency permit coordination program in the Bay Area.

As a result of these and other efforts Steve was awarded NOAA's Roger B. Jones Award for Excellence in Coastal Management and received a commendation from Vice President Al Gore as part of the Vice President's National Partnership for Reinventing Government Program.

Of course, he has been BCDC's Chief Deputy since 2010 and has acted as Executive Director both for long periods and short. Most important to our staff, he is our reigning historical treasure trove about BCDC's policies and actions.

That is why we have asked Steve to come back as a Retired Annuitant at some point after a restful period away from us. He has been crucial in training and mentoring our staff, whose overall tenure is far less in 2024 than even five years ago. He has already started working on creating a training program for our staff that will outlive his Retired Annuitant status.

Most important to me, however, is that he has been a tremendous partner. He and Brad McCrea definitely propped me up during my first few years when it was obvious that I knew very little about implementing coastal management programs and projects. And he learned quickly about how I tend to work, which is always the most difficult thing to figure out when you get a new boss. Early on he created a great intro to any discussion that goes like this: "Larry, we have an issue, but don't do anything yet..."

We shall miss Steve wandering around the office, scoping out projects, proofreading reports, and everything else that he does. But at least we will have him as a Retired Annuitant for a while. And I can assure you, as we have assured him, that we know his telephone number for when we need some advice.

Staff today had a burrito lunch, with some great cake before today's meeting. And we plan to have a low-key but grateful send-off for Steve to which we shall invite the Commissioners and others later this summer. And we hope that Steve will contribute some of his great red wine for that occasion.

Steve, I am sure you would like to say at least a few words.

Mr. Goldbeck addressed the Commission: Thank you, Larry. I do have a 20-minute PowerPoint and then a movie to show. No.

I call BCDC the job that ate my career and it has been an interesting ride. I always thought that I would go off and do something else when things got boring here. They never got boring. Well, maybe there was a meeting or two that didn't meet the requirements; but overall, it has been an amazing time and I have enjoyed all of the work that the BCDC does and working with all the staff.

I feel like I can retire now having achieved some interesting things in addition to what Larry talked about. Working on the climate change policies as the first in the nation is something I will always treasure, and I am looking forward to the implementation of Senate Bill 272 as well

But it has really been partnerships that have always made me enjoy working at BCDC with the staff, as I told them today at our little luncheon, but also working with Commissioners.

I have really been impressed with the Commissioners we have had at BCDC. Always impressed how Commissioners would come to BCDC from whatever background or appointment that they had but always took on the role of being a regional BCDC Commissioner. That is how BCDC has prospered.

And so, I want to say it has been an honor and a pleasure working with the BCDC staff and you Commissioners and I look forward to my new role. So, thanks so much

Executive Director Goldzband acknowledged: Two things to follow that up. First, as you know, we now have to look for a new member of senior staff due to his departure. You received two weeks ago the link to the job; you will get it again today in the Commission Summary. Please distribute them to anybody you believe should receive them.

But perhaps just as important in a late breaking news event, BCDC's Bocce Team, which historically has been known as the Mean High Tides, has now changed its name, at least for the next season, to Stevie G and the Shoreline Band. We do that because, I think, Steve, you were a charter member of the bocce group and remains a stalwart. The bylaws of the bocce rules league say that retired annuitants can participate in bocce games. Just so you know.

With that I have one more announcement that Acting Chair Eisen noted. The major news at BCDC during the past two weeks is the deployment of our new website. Thanks to a great effort by a number of staff, most especially Reylina, Elsa and Ethan and various other state staff and a very good consultant team, our new website is both easier to use and can be expanded to create greater functionality.

Most important for the public, it is much better organized, and we are working hard to fulfill one of our Strategic Plan objectives by using as much “plain language” as possible. Please check it out.

Look at the new Calendar function especially that continues to make me smile. We are still tinkering with it and will be for many months and we certainly look forward to your comments. If you find something or don’t find something that you either like or don’t like, please let us know.

That completes my Report, Acting Chair Eisen, I am happy to answer any questions.

Acting Chair Eisen commented: Let me say, Steve, that was an unbelievable and stunning list of accomplishments. On behalf of a very grateful Commission, we are going to miss you and we are looking forward to the, I think Larry called it a send-off, but it sounds like it is just a transition.

6. Consent Calendar. Acting Chair Eisen stated: We are now at the exciting brand-new Consent Calendar. At this point in the agenda, we are going to consider that.

There are two items on the Consent Calendar. One is the approval of the Minutes for our June 6 meeting and the second is the proposed adoption of a Revised Stipulated Cease and Desist and Civil Penalty Order from the Enforcement Program, and that regards a property in San Francisco at 224 Seacliff Avenue. Enforcement Committee Chair Marie Gilmore has already concurred in the inclusion of this Order in the Consent Calendar.

Acting Chair Eisen called for public comment on the Consent Calendar.

(No members of the public addressed the Commission.)

a) Approval of Minutes for the June 6, 2024, Meeting

b) Proposed Adoption of Revised Stipulated Cease and Desist and Civil Penalty Order No. 2022.001.01 (224 Sea Cliff Ave, SF)

Acting Chair Eisen asked for a motion and a second to adopt the Consent Calendar.

MOTION: Commissioner Eklund moved approval of the Consent Calendar, seconded by Commissioner Showalter.

VOTE: The motion carried with a vote of 16-0-0 with Commissioners Addiego, Ahn, Ambuehl, Eckerle, Eklund, Gilmore, Gioia, Gorin, Gunther, Hasz, Moulton-Peters, Nelson, Pemberton, Showalter, Zepeda and Acting Chair Eisen voting, "YES", no "NO" votes, and no "ABSTAIN" votes.

7. Consideration of Administrative Matters. Acting Chair Eisen stated: We do not have an Administrative Listing today. Commissioner Gunther asked at our last meeting that our staff explain how the Administrative Listing process works and how it differs from other types of permitting approvals, so Harriet Ross, who is our Regulatory Director, has prepared a response for the Commission.

But before we get to Harriet's response, do we have any public comments regarding this agenda item?

(No members of the public addressed the Commission.)

Acting Chair Eisen: Harriet, can you please explain to us our Administrative Listing process?

Regulatory Director Ross commented: Yes. Good afternoon, Acting Chair Eisen and Commissioners. Again, I am Harriet Ross.

First of all, BCDC has several categories of permits, as you have all noticed, I am sure.

When the Commission hears a project and votes, similar to what we did last month in May on 505 Bayshore, that is considered a major permit.

But the Commission's rules have delegated the authority to review and act on some other permits to its Executive Director. The permits that appear in the

Administrative Listings are considered minor repairs and improvements and that is defined by the Commission's regulations and by the Commission itself.

There are many different types of projects included in this definition of minor repairs and improvements. Some examples, just to give you an idea of what we are talking about, could be single-boat docks less than 1500 square feet, shoreline protection that would fill less than 10,000 square feet of the Bay, routine repairs that do not involve significant enlargement or changes in use, just to name a few things.

Now, before the Executive Director acts to issue or deny a permit, they are required to advertise his action to the Commission and the public.

We do this through, before every meeting there is a Listing of Administrative Matters item at the beginning of most of these Commission meetings. The listing really lets the Commissioner see a summary of the projects and the proposed actions by the staff.

So, if the Commission agrees with the Executive Director's classification that a project is indeed considered a minor repair or improvement, then no action is needed, and that is typically what happens. I have been here for nine months now, and I think that we have gone through that process every meeting without any fanfare. Then the Executive Director will act on these pending applications within the mandated deadlines.

The administrative matters or permits do not require public hearing and may be issued within a shorter timeframe.

Now, however, if the Commission, and you all have the right to disagree with the Executive Director's determination that a project is indeed a minor repair or improvement. If that is the case, we will hold a hearing to discuss if the project does not fit the definition of this permit, then we vote as a Commission on the type of permit it should be.

So, if the Commission votes that an administrative permit is not the right permit, the Executive Director is then required by the Commission's rules to deny the application and then the application would need to be reapplied as a major permit, which then would include a public hearing and Commission vote.

That is just the main administrative permit that is included in the administrative listing. We also list other permits such as Regionwides on a regular basis. I think the plan is to go over that in more detail at some future training.

That is just the basics of what goes on the Administrative Listing and how that is different from the major permits that you all consider from time to time. Any questions?

Acting Chair Eisen asked: Any questions of Harriet? Comments?

(No questions or comments were heard.)

Acting Chair Eisen continued: Thank you, Harriet. Your statement that we could remove something from the Administrative Listing if we wished reminded me that is also true of our Consent Calendar. I forgot to mention that if at any point in time somebody wanted to lift something off the Consent Calendar and have a regular item for that matter, that can be done. I had neglected to mention that.

Mr. Scharff replied: I just wanted to add to that, Acting Chair Eisen, it takes two Commissioners. If one Commissioner wants to do it, we just need two Commissioners to say we are going to remove it from the Consent Calendar.

Acting Chair Eisen acknowledged: Very good. Thank you, Greg. Yes, so find a partner if you want to remove something from the Consent Calendar.

8. Briefing on Bay Sand Budget, Transport, and Provenance Studies and Potential Effects of Sand Mining. Acting Chair Eisen announced: We are going to have three briefings now. The first one is with respect to sand mining issues. It is a briefing by the BCDC staff and representatives of the sand mining industry. It is going

to be with regard to issues that will be considered by the Commission's temporary Sand Mining Commissioner Working Group, which was established recently, and they are going to be considering these issues during the remainder of the year.

Last week, BCDC distributed research studies on issues that were raised by our Commission during the sand mining permit process back in 2015. That research was reviewed by an Independent Science Panel.

Today, BCDC staff is going to provide a short presentation on the research and the findings process, and representatives of the sand mining companies are going to provide a short presentation on mining activities.

The purpose of this briefing is to highlight the topics that the Working Group is going to consider. Commissioners should await that work before we express any opinions we have on the studies or the possibility of considering a permit for future sand mining activities. Today we are going to hear these short presentations and of course there will be time for any clarifying questions that Commissioners have. Brenda Goeden is going to make the presentation.

Sediment Program Manager Goeden presented the following: Good afternoon, Commissioners. I am pleased to present to you the findings of new science on sand in San Francisco Bay, a much-overlooked area of the Bay sediment system. This new science is a direct result of the Commission requirements in its 2015 sand mining permits.

My presentation, as Acting Chair Eisen just mentioned, will be to briefly review the history of sand mining in the Bay, the Commission's permitting and sand mining activities in 2015, the process and organization for identifying the studies, the researchers and the findings, and then the findings of the Independent Science Panel on the research, and finally our path forward in the next several months.

As some of you are aware, mining in San Francisco Bay has occurred for almost a century via small companies that began around the 1930s and perhaps before that.

The Commission's records of these activities are limited to the documented sand mining from various permits of these small companies that were permitted in the 1970s.

Over time, the small companies were consolidated. And especially in the late 1990s several of the small companies along with the State Land leases or private leases were consolidated under Hanson Aggregates, which is now Martin Marietta, and also Lind Marine. You will also note a third sand mining company here, Suisun Associates, which is a joint company of Lind Marine and Martin Marietta.

In this graphic you see here in the upper right there is a very small map. Bill Butler with Lind Marine will show you a better map shortly. The sand mining takes place in Central San Francisco Bay and in Suisun Channel and Bay, in an area called Middle Ground Shoal and Suisun Channel itself.

The mining, as we have it recorded by our permits and reported by the mining companies between the 1970s and 2023 has been variable. You will note that it goes up and down and it tends to track the construction industry's work because sand mining is done particularly to provide aggregate to the construction industry in the Bay region.

It is not the only sand that is provided to the construction industry, there is also imported sand from British Columbia and some sand that is trucked in from various quarries in the region. The miners will tell you more about that in the next presentation.

You will note that during the early 2000s was the peak of the sand mining and that was right around the dot-com period when there was a huge amount of building going on in San Francisco Bay. You will also see a dip around 2008 to 2014, which marks a very significant recession in the region, coming back up and then declining again over time. It tends to trend along with the construction industry's work, and we will see how it continues in the future.

In 2015 the Commission heard for the first time three major permits in a public hearing and vote, and they issued three permits.

The first permit was for Central Bay for 1.4 million cubic yards of sand over multiple leased parcels. That was issued to Hanson Aggregates which is now Martin Marietta.

Suisun Bay had a permit issued for 185,000 cubic yards annually and that went to Suisun Associates.

Lind Marine had a specific permit issued on a private lease for 100,000 cubic yards on Middle Ground Shoal.

These permits were for a 10-year period, and they required different studies to help mitigate, and better understand the impacts of sand mining.

The Commission along with the Water Board required a water quality monitoring study. We also required a benthic habitat study. And then this most recent work, we required study of sand transport, the sand budget, and potential impacts of mining to the sand system itself, the physical processes in the Bay. In that action the Commission required the miners to contribute \$1.2 million to these efforts.

There was also mitigation required as part of these permits, which included removal of some Bay fill, which was primarily undertaken at Crockett Marina, which is a defunct marina at the City of Crockett near the ~~Benicia~~ *Carquinez* Bridge, and installation of fish screens on all of the pumping equipment to reduce entrainment of fish from the water being pumped on the dredges to slurry the sand.

At that time there were a lot of Commission concerns and issues that were raised around sand mining. This was the first time there was a public hearing in its regard and the Commission specifically had a number of questions. They included:

How much sand is in the Bay, what is the volume, and where is it?

What areas are in transport and what areas are relic sand?

Is the sand that is being mined in transport or relic?

What are the impacts of mining relic sand?

They went on to ask, what are the impacts to active sands or sands in transport and the consequences of that mining to Bay beaches and the tides that it feeds?

A question came up of whether if you dig a big hole are there some sediments that come down from the Delta that fill the hole rather than going to Bay beaches?

The question was asked whether or not there should be a modification of mining volume at the different sites or the sites themselves, and under what conditions should we allow mining or not?

What is the sustainable volume for mining? And what does substantial depletion look like in the Bay for sand?

The Commission, also at the time, suggested that monitoring for the impacts of extraction of relic sand and sand in transport was important.

They also wanted to understand better BCDC's authority and jurisdiction in relationship to sand mining.

Lastly, questions came up around the impacts to benthic life in the Bay, but that is not a subject of today's presentation, so I have grayed that one out.

After the permits were issued in 2015, in April, we went away from that hearing and began to work with the miners.

The Commission did, as I mentioned, require \$1.2 million to support the sand studies. That money was deposited into the State Coastal Conservancy's Coastal Trust Fund over four years, so we allowed a period of time for that money to build up.

Once that deposit was complete, the State Coastal Conservancy and BCDC began to work together with a selected Sand Technical Advisory Committee, who developed further the questions around how we manage sand mining and what the impacts of mining are. They worked together to develop study scopes. We made Requests for Proposals which were listed at the State Coastal Conservancy's website. And proposals reviewed by the Sand Technical Advisory Committee.

In addition, and during the latter part of the Sand Technical Advisory Committee's main work, an Independent Science Panel was formed. They reviewed the scopes and revised them. They also reviewed the proposals that came in. They identified and interviewed the Sand Science Teams. They selected and worked with these teams to create the appropriate studies to best answer the management questions. And when the studies were completed, they reviewed the findings and developed a Findings Report with Stantec, a consulting firm.

Just so you know who is on these groups. The Sand Technical Advisory Committee included the Conservancy, BCDC, the Coastal Commission, State Lands Commission, the Army Corps of Engineers, the Water Board, National Marine Fisheries, Cal Fish and Wildlife, San Francisco Bay Keeper, a nonprofit who was highly interested in this work, and Martin Marietta and Lind Marine representatives, as well as a consulting firm assisting them in working on the science.

The Independent Science Panel included five distinguished scientists, Bob Battalio from Environmental Sciences Associates, Dr. Craig Jones from Integral Consulting, Dr. John Largier from UC Davis at Bodega Marine Lab, Dr. David Schoellhamer, USGS Emeritus, as well as Dr. Paul Work, who is now also USGS Emeritus. So, a very distinguished group of folks working on developing these studies and reviewing them.

As I mentioned, the Sand Technical Advisory Committee worked a bit to refine the Commission's questions and add some more of their own questions on what kinds of information we wanted out of the sand studies. The questions as they were defined include:

Is sand mining at existing lease areas, at permitted levels, having a measurable or demonstrable impact on sediment transport and supply within San Francisco Bay?

They also asked: What is a sustainable number? What is substantial depletion? Much as the Commission did.

They asked: What are the anticipated physical effects of sand mining at permitted levels on sand transport and supply within the Bay and the outer coast?

What is the impact to active sands and consequences to beaches and tides?

What is the impact to relic sands?

Are there feasible alternatives to mining in the Bay?

So, very, very similar but a little bit more specific than the questions the Commission asked during the public hearings.

The research teams, I am not going to read all these folks' names, but I felt it was very important to put the agencies, organizations and scientists up for you to see because this is, again, a very distinguished group of scientists who worked very hard on a number of different studies to help the Commission understand the impacts of sand mining, and understand the sand transport system a lot better than we did 10 years ago.

We looked at Sand Budgets, Sand Supply, Morphological Change and Transport Analysis. We also had some Sand Transport Modeling that was done and Sand Provenance, also known as Fingerprinting, understanding the origin of where the sand came from. Multiple different folks from different entities working together across these different studies to integrate their work.

Here are the key findings and there are additional findings in the Findings Report. These are the overarching findings. There are also regional findings that I am not including in my presentation today. The studies themselves are also included in Appendix G with even more information if you are interested in diving in deep.

The key findings include that the volume of mined sand is significant relative to the Bay sand budget, it represents the largest outflow sand from the Bay, including the net sand discharge to the ocean. Additionally, sand is mined faster than it is being replenished; and therefore, sand is a non-renewable resource over the long term.

Suisun Bay sand is not being replenished and thus is a finite resource and the bed is being lowered. The bathymetric modeling and budget studies all support this finding. Sand mining effects in lease areas appear to be highly localized, with effects diminishing with the distance from the event location. The effect is pronounced in areas of negligible sand transport such as Suisun Bay, where the depressions caused by mining persist in the bed over time.

The next set of findings, and there is just these four that I will present today are that:

Central Bay sand is relic, meaning that it was deposited between 20,000 and 6,000 years ago as sea level rose, and the river discharge point migrated through the Bay to its present location in the Delta, and is part of a large Bay-ocean reservoir of sand.

Sands derived from the watersheds of the Sacramento and San Joaquin Rivers are no longer a significant source to the Bay and ocean, and large volumes of sand do not move through the system during times of high flow, e.g. wet winters, as was previously assumed. Effects of mining to beaches and ecologically important shoals remain unquantified.

The last finding is that San Francisco Bay and the Pacific Ocean share a common pool of sand, which sand mining reduces. In each tidal cycle, a huge amount of sand is transported between the Bay and the ocean, effectively linking the two sand deposits into a shared pool. The size of the shared pool of sand, and thus the significance of the reduction due to mining, is unknown.

That is the high-level findings, overarching findings of the Independent Science Panel from this group of studies.

I am going to describe now the process going forward and what we will do next to help us further dig into this information and further codify what it means for mining activities and permitting in San Francisco Bay.

Going forward, we have today's briefing and all the science that has gone into that Findings Report, which is about 35 to 40 pages long, so not too long of a read, you should definitely read it. These are the Independent Science Panel findings.

We will take that information and we will dig through it in the Commissioner Working Group, which I will talk about in just a minute. We will use the Commissioner identified questions, we will study and review and have a public discussion about what this all means.

The State Lands Commission is currently in a CEQA review process, so we are anticipating over the next few months that State Lands will be reviewing a draft CEQA document. BCDC's role in that is to review and comment on it along with other responsible agencies.

Late this year, we are anticipating perhaps December, we would anticipate the sand mining companies submitting three new applications for additional sand mining in the future.

Lastly, probably around early spring, April 2025, we would anticipate the Commission hearing and voting once again on sand mining activities in San Francisco Bay as proposed by the miners.

The Sand Studies Commissioner Working Group. We have three Commissioners who have graciously once again agreed to sit on a Commissioner Working Group and help staff dig through important information that will influence how we permit and think about policy application when we get the permit applications. It will be chaired by Pat Showalter, and Andy Gunther and Barry Nelson will be the other two Commissioners on the Working Group.

We have four meetings planned and scheduled. Please come to these meetings if you are interested because they will be fascinating, and we will have different presenters here to help explain some of the science.

The first one is in mid-July, it is an afternoon meeting. August 21 and September and November are all morning meetings. They are going to be two hours in length, and they will be virtual so easy to attend. Again, they will be fully open to the public.

I think with that, that is my presentation. We can probably hold questions for my presentation until after the mining representatives give their presentation unless there are some clarifying questions now.

Acting Chair Eisen asked: Do we have any clarifying questions now before we move to the miners' presentations?

Commissioner John-Baptiste asked: Can you explain what you mean by a sand budget? What does that term mean?

Ms. Goeden answered: Yes. If you think about it like a bank account, there is a certain amount of sand within San Francisco Bay coming in and going out. Some of that is happening in a natural process, sand accumulating over time and then sand leaving to the ocean. There is also human extraction of sand, either through navigation dredging, or the mining activities. It is a scientific process in which scientists do the best they can to bound the amount of, in this case, sand that is present in the active transport layers, and then balance out what they believe is coming in and out to get to a mass equilibrium.

It is not a volume equilibrium or a weight equilibrium, it is actually mass. That is definitely something we will be talking more about at the Commissioner Working Group because it is pretty technical, but it is a standardized scientific process.

Acting Chair Eisen further asked: Any additional clarifying questions or shall we turn to the miners' presentation? All right.

Ms. Goeden introduced the scheduled speakers: I am happy to introduce to you today Bill Butler of Lind Marine, Erika Guerra and Michael Bishop of Martin Marietta, who will tell you more about sand mining and their perspectives. Thank you and welcome, Bill, Erika and Michael.

Mr. Butler addressed the Commission: Good afternoon, Acting Chair Eisen, Members of the Commission. My name is Bill Butler; I am Vice President with Lind Marine. I am going to be presenting the sand mining overview on behalf of both Lind and Martin Marietta this afternoon.

But joining me and available for questions, as Brenda indicated, is Erika Guerra and Mike Bishop from Martin Marietta. We also have Aaron Holloway and Nick Sadrpour from GHD, who are coastal engineering consultants for the sand miners, and also Christian Marsh, counsel from Downey Brand, and they are here available to answer questions.

As some of you may recall some details about sand mining from when the Commission considered this activity nine years ago, many of you have joined this Commission since so I think it is a good opportunity, at this milestone moment, to refresh everyone with an overview of Bay sand mining.

I am going to briefly cover these topics, why sand mining happens, who is involved and where, when, how, and how much that it happens.

The purpose of sand mining is to obtain commercial-grade aggregate that is used for public and private construction. Going into concrete, asphalt, and other building materials that are used to build the homes, schools, hospitals, roads, and infrastructure projects around the Bay. Marine sand is a key component in Bay Area restoration and resilience projects as well. And all of these things which help support the quality of life that we enjoy here in the Bay Area.

Utilizing a local resource for our local needs in the region that is transported via waterways to sites where the resource is utilized and in barge loads that equal roughly 100 to 140 truckloads of material all help to reduce the overall environmental effects and also provide regional jobs for our local residents.

It is important to note here that not all sand is commercial-grade sand. It needs to be durable, clean, well-graded and of the right size. The Bay sands where mining occurs meet these criteria.

Here are some examples of local projects that are utilizing Bay sands. They range from constructing schools, hospitals, affordable housing, rebuilding from wildfire damage, to environmental remediation projects like at Hunters Point, and beach restoration, for example, at Crown Beach in Alameda, which was done for resilience and sea level rise defense.

As Brenda indicated earlier, there are two active sand mining companies operating in the Bay, Martin Marietta, formerly Hanson, and Lind Marine, as well as the joint venture entity that is formed by these two companies.

These figures illustrate where sand mining takes place in the Bay. The figure on the left is the Central Bay leases. They span 2,600 acres consisting of nine parcels leased from the California State Lands Commission. Martin Marietta exclusively mines these areas, and this is where the bulk of sand mining takes place.

The middle figure is, I guess fittingly, the Middle Ground lease area, a 367-acre private parcel in Suisun Bay. Lind Marine exclusively mines this location.

And then finally on the right the Suisun Associates lease, which consists of two parcels in the Suisun Channel at the east end of Suisun Bay. This 938-acre lease area is leased from State Lands to the Suisun Associates a joint Venture made up of Martin Marietta and Lind. Lind Marine has conducted the mining here over the past 10 years.

The next several figures are going to help describe how sand is mined. The two companies each operate a sand mining barge. That is Lind Marine's on the left and Martin Marietta's on the right. These are very similar on how they obtain sand from our respective areas. In both cases the sand miners utilize tugboats to move the barges to the mining locations.

At the mining locations the barge is filled by pumping a sand/water slurry from the Bay floor. On the right it shows the sand pipe next to the barge, which is lowered into the substrate. A pump onboard the barge pumps the sand/water mixture into a loading chute that runs the length of the barge. That is illustrated in the figure on the left.

This chute is equipped with several screened gates that allow sand and water to flow into the barge hopper. Any materials larger than sand flow over the screens and are discharged back into the Bay through a pipe at the end of the chute that extends under the barge. As the sand and water mixture fills the barge, water which also contains some fine material decants from the top of the hopper and is also discharged back into the Bay through pipes that extend under the barge.

Pumping continues until the barge hopper is filled with wet sand. Once it is filled, the barges are transported to a number of sites around the Bay where the sand is offloaded, stockpiled and then distributed to customers.

These figures show a couple of the differences in the sand mining barges and they show the end of the sand mining pipes. On the left, Martin Maritta's barge is equipped with a suction drag head that is placed about two feet into the base

substrate when it is lowered. The tugboat keeps the barge as stationary as possible but then moves to new locations as necessary to continue the slurry.

In the Suisun Bay locations, Lind Marine's suction pipe, illustrated there on the right, is pushed five or six feet into the substrate and the barge is anchored to limit movement during mining.

Both barges are equipped with those cylindrical screens that you can see for the slurry water to prevent entrainment of fish into the pipes.

In the Central Bay, Martin Marietta mines sand from depths ranging between 60 and 90 feet. In Suisun Bay Lind mines in areas that are anywhere from 20 to 40 feet deep.

These next several figures illustrate the levels of mining activity occurring in the three areas over the past several years. Brenda showed a very similar slide to this, which was the summation of all of these figures. This particular figure shows the activity on the Central Bay leases from 2000 to 2023 and it illustrates the variability of mining to meet the varying demand that Brenda talked about.

That higher demand for construction materials occurs generally when the economy is strong, and many construction projects are underway. When the economy slows down construction activity decreases and so does the demand for construction materials.

These economic cycles can also be influenced by other external factors like natural disasters, or even the climate change adaptation that we are dealing with.

I would mention it is important to have permit limits that recognize this variability and are high enough to offer the flexibility to meet these changes in demand.

This figure shows the activity on the Suisun Associates lease over the same 23-year period. Obviously, it shows a little different curve, but that is because here the variability was mainly influenced by available permitted volumes in the low periods there in 2012 and 2014. And then when mining was reauthorized in 2015 there was an increase in permitted volumes that were shifted to this lease from the Middle Ground lease.

Here you can see that reduced volume there in the later years, in the last 10-year period when these volumes were shifted to the Suisun Associates lease area.

So, what is next? Brenda did a good job of describing this process earlier. We are now here at an important milestone. This report is the last major permit condition to be fulfilled in our current permits. This report really builds on a host of other studies and information compiled through the environmental review processes that have been conducted over the last 20 years in the prior rounds of CEQA analysis and prior rounds of permitting and study.

Many of the findings of this report reaffirm the findings from these past studies including some of the demonstrable impacts on sediment transport and supply beyond localized areas within the leases were not really identified.

We greatly appreciate the opportunity that we had to be part of the Sediment TAC and reviewing the process and studies as they have been developed; and also appreciate the opportunity to provide recommendations and comments. We do have a few comments and issues on these reports that remain outstanding. Those comments are included in the report's appendices, which you all should have a copy of, and we would encourage you to take a look at those.

Finally, I would just like to take this opportunity to say a big thank you to the Sediment TAC members, to BCDC and Coastal Conservancy staff, the Independent Science Panel members, and the study authors for all their work on this very complex issue. It was a huge task, and the work is very much appreciated.

With that we are available to answer questions that any of the Commissioners might have. Thank you.

Acting Chair Eisen asked: Sierra, do we have any members of the public who wish to comment?

Jim McGrath commented: Good morning. My name is Jim McGrath. Some of you know who I am. I just want to say first, this is a stunningly good bit of science. I did not read every single word, but I skimmed each one of the reports.

The key conclusion here is that the sediment that is in motion at the mouth of the Bay is relic sediment and that does not really surprise me. I came to the same conclusion in Monterey Bay at the mouth of the Salinas River. That means it is not replenished in the same nature.

But unlike Monterey Bay, you face a very different situation here. While the loss of sediment to mining may directly involve a loss of sediment that eventually makes it to the San Francisco and Marin County beaches, there is a huge amount of sediment involved in that transport system and the amount is relatively small, significant, I think, is the conclusion.

But the thing that I wanted to point out to you is that while it may be that this exacerbates beach erosion, stopping sand mining probably will not have an appreciable effect on the need for adaptation along the beaches. So, it is a very complicated question that you are going to face in the future.

With that, I will stop. I will try to participate in the meetings of the committee, the subcommittee. And just once again want to say just really excellent work by the staff and the scientific community.

Mr. Sadrpour gave public comment: Dear Vice Chair and members of the Commission. My name is Nick Sadrpour, a Senior Coastal Scientist with GHD, engineering consultants to the mining team. My expertise is in coastal sediment transport and coastal resilience and management.

I am here today to provide a review and observations of the sand science studies and ISP process and I will echo Bill in and my appreciation for the process and the immense challenge of generating and compiling research on such a complex issue and commend the dedication and hard work of the research teams, the ISP and Sand Studies Technical Advisory Committee.

This new research builds on significant prior work on sand transport pathways and supplies, as well as modeling conducted for the prior lease term. It reaffirms a number of these past findings.

For example, mining has localized effects and should be examined at the individual lease area scale. The studies were consistent with prior research that shows the majority of mining activities occur in areas of inactive sand transport, as demonstrated by low rates of replenishment within the mined areas.

The Summary Report is also consistent with the state's 2012 EIR in acknowledging that Bay sands are a finite resource.

As previously recognized by BCDC Commissioners, the ISP Report acknowledges that mined sand is largely relic deposited thousands of years ago and is a part of a large reservoir of sand. Sand mined from a particular lease area may not be significant when considering the amount of sand in the system and in the larger Bay reservoir.

Importantly, the studies and the Summary Report do not identify any specific measurable or demonstrable impact on sediment supply and transport beyond the lease areas themselves.

Instead, the Report findings are that effects beyond the lease areas are unquantified and unknown.

As we have said throughout the process, we continue to have concerns regarding the report's sand budget analysis and shared-pool concept model, which are captured in the written comment letter submitted by Lind and Martin Marietta attached in Appendix H of the Report and I encourage you to review this. These include that the sand budget analysis appears to double count outflows caused by mining and dredging activities as both bathymetric change volumes and sand outflows. This could result in a dramatic overestimate of sand outflows from the Bay.

Additionally, the sand budget study's author acknowledges that the Golden Gate Bridge flux, including whether more sand flows into or out of the Bay, remains highly uncertain.

Given this and other uncertainties, the studies are unable to draw any conclusion about sand mining's impact on the outer coast.

Finally, the ISP Summary Report provides several over-generalizations. For example, the determination that the San Francisco Bay and the Pacific Ocean share a common pool of sand is overgeneralized, as these are two very large bodies of water with complex processes that affect sediment transport such as wave climate, the San Francisco Bar morphology, watershed scale development and other coastal littoral cell processes.

I urge you all to examine the individual sand studies for the detailed and nuanced findings they present. Despite this and other critiques, we look forward to collaborating with BCDC staff on the upcoming working group process and believe that through continued dialogue remaining issues can be addressed and placed into context. Thank you so much for your time and consideration.

Acting Chair Eisen reiterated: As we said in the beginning, this is the beginning of a long process and clarifying questions at this point in time are certainly welcome. Pat Showalter, I saw your hand up first and then Sierra will call on folks as they raise their hands. Thank you.

Commissioner Showalter spoke: I would just like to say that I was really interested to hear about the reduction of GHGs because of the truck traffic that does not occur because of this, and I really look forward to learning much more about that. I do not really expect an answer to that, but I just want to bring that up as a real question that I hope to learn more about. I will be glad to make a few comments later.

Mr. Scharff noted: Commissioner Showalter, I am not sure that is really within the scope of this meeting.

Commissioner Showalter acknowledged: Okay. I did not know.

Commissioner Moulton-Peters was recognized: Thank you for the Report. It is clear that our sand supplies are a limited resource. My question is, to what extent other alternative materials for construction use might be considered as part of the work of this task force?

As an example, I use the fact that we are using recycled construction materials in our road projects as road base, so we are regrinding concrete and asphalt to use. This would not be suitable for everything, but I do think we need to look at alternatives and options to a limited sand supply and just wonder if that could be something we entertain. Thank you.

Ms. Goeden replied: Yes, it certainly is something I believe we can entertain in the Commissioner Working Group. Thank you for the question.

Commissioner Gunther weighed in: I would like to see if someone can tell me what is the percent of the sand used regionally in construction? How much of that sand does, the sand mined from the Bay, compose? What percent of the overall demand for sand?

Ms. Goeden answered: I do not think we are prepared to answer that question today. We did have an economic analysis prepared by the sand miners in 2015 but I think those numbers would have to be reanalyzed.

The Department of Conservation-Mines and Geology probably would be a good source to help understand the aggregate used in the state of California and locally. But we are not prepared to answer that question for you today, Commissioner Gunther.

Commissioner Gunther added: We can just add it to the agenda of the Working Group.

Ms. Goeden agreed: Sure.

Commissioner Gioia stated: I want to make sure I heard Commissioner Gunther's question, if it is same as mine, because I think it is important to understand this. The sand that is mined from the Bay, where is it used? Is it used all around the Bay or is it exported to areas outside the Bay for use? So, the end use of the sand that is mined in the Bay. I realize you do not have that information now, but I think that would be an important part of the Work Group analysis.

And then second, what are the alternative sources for sand and what are the environmental or economic ramifications of those alternative locations? Other sources, in other words.

Ms. Goeden noted: I believe your first question is slightly different than Commissioner Gunther's which was, I think, the percentage of Bay sand used in comparison to all sand used in the region? Yours is a little deeper which is, is the Bay sand used locally? I believe the answer to that is yes, the Bay mined sand is used locally. I believe Bill and Erika will confirm that, but it is a very local resource of construction materials.

Commissioner Gioia added: But it would be useful to know what percent of it, if any, is exported outside the Bay Area for use?

Ms. Goeden acknowledged: Yes. We can get that number.

Commissioner Gioia continued: And I agree with Commissioner Gunter's question of what is the percent of Bay-mined sand that is used in the Bay Area, what percent comes from other areas? Which also gets to the question, what are the other additional alternative sources of sand if there were less available from the Bay, and what are the environmental and economic factors related to the impacts of that?

Ms. Goeden explained: Yes, and that would be something we would have to research and provide as part of the Commissioner Working Group, and we will put that on the list.

Commissioner Gioia surmised: You seem to be unclear. It is clear that the sand is not sustainable, right? We are having a diminishing quantity of sand. What would it take to further understand the impact of this sand mining on the Bay shoreline and beaches?

Ms. Goeden replied: In the Findings Report in each of the studies there are additional research that can help us get at some of those questions.

One of the main issues in us understanding the quantity of sand that is in San Francisco Bay was the mere cost of taking three deep cores to understand the depth of the sand volume that was deposited back at the turn of the Ice Age. We could have spent \$1.2 million on that one study. We chose not to because that would have given us far less information.

Frankly, the amount of sand that is being mined is in the upper part of that. That is an open question. We did not have enough funds to go and try to make the connection between the sand in the system and it getting to beach transport, that is a fully different study.

There are a number of additional studies that we could do if additional funds were provided. Believe it or not, \$1.2 million is not a lot of money when you are, when you are studying deep-water systems that are quite large. I will leave it at that. We could go on but that is the short answer.

Commissioner Gioia continued: I think Commissioner Moulton-Peters mentioned alternative sources of construction materials. It may be for some kinds of projects there are, others there are not. Are you going to be looking more at that?

Ms. Goeden responded: We certainly can. We have to meet with our Working Group chair to define better what exactly we are going to be looking at in each of the working groups. But we can require that as part of the information to support the feasibility of sand mining in the Bay and alternatives to sand mining in the Bay. I see Bill's hand is up so maybe I will turn it over to him to say something about alternatives.

Commissioner Gioia acknowledged: Thank you.

Mr. Butler stated: Commissioner Gioia, thank you for those questions. I can confirm that the sand mined from the Bay stays very, very regional within the Bay Area. It does not really go for uses outside of the Bay.

Regarding alternate sources of material, absolutely I think that is something that that we can look at a little harder going forward.

As I mentioned briefly in the presentation when I said that all sand is not construction grade sand; and even for construction grade sand, all sand is not created equal for that either. So, you are absolutely right that for different uses, there's different alternate materials that can be suitable for that. But that is certainly something that we can address and get you the answer to going forward.

Commissioner Nelson had questions: Just a couple of questions. Some other Commissioners have asked some of the questions I was going to ask. First is, it is pretty clear from this work that we are mining relic sand, which means that this ongoing extraction is not sustainable.

Can you put a little timeframe around that? Are we taking a tenth of a percent a year, are we taking 20 percent a year? I am just trying to get a sense of what the timeframe is around the non-renewability of that resource.

Ms. Goeden replied: I cannot because we do not have the total volume of sand. We do know that sand is no longer coming in from the Delta and we know that the sand from the watersheds is not being supplied to the beds that are being mined. We do see areas where the bed is being lowered and we can show pictures of that in the Commission Working Group.

The other thing I would say is we did some very specific analysis of very localized mined areas and there is a limited portion of those mined areas where sand is in transport. Where it is in transport, the maximum amount that was replenished in those areas, I believe, was 55 percent. In that one area, that was the maximum. There was certainly less than that in other areas and there are areas that are straight up relic that are not being replenished.

So, there is some variability within the sites and that is some of the details within the studies. We opted not to get into lots of details today about the studies with the full Commission.

Commissioner Nelson continued: We can talk about some of these questions later. I have questions that I can follow up with on that later on. The other question was the conclusions indicate that the impacts on beaches and shoals are not quantified. I would love to have a sense of what it would take to answer those questions. But again, maybe that waits for our Working Group.

Ms. Goeden replied: Yes. We definitely have some scientists who have some ideas on that so we can talk about that further in the Working Group.

Commissioner Zepeda was recognized: He just asked my question; I was going to talk about what the impact was to the beaches. Because if we are drilling a hole in the middle of the Bay, I am assuming the beaches are giving some of that sand back in to fill the hole. So, it was already asked. Thank you.

Commissioner Pemberton asked about prioritization of analyses: I think one of the comments I heard was regarding environmental implications associated with the sand mining and I think Brenda mentioned that would be put on the list for discussion during one of the Working Group meetings. I just wanted to see if I could get some clarification on that.

Would that be in the context of what would be included in the recommendations as a responsible agency in the context of CEQA? What is being asked and what would be on the Working Group's agenda as it relates to the environmental implications and how does that reconcile with CEQA?

Mr. Scharff replied: I do not think we have fleshed out exactly what is going to be in all of the Working Groups yet. I think we are still deciding and looking at that and getting input from the Commissioners and from the Working Groups themselves.

Ms. Goeden added: Commissioner Pemberton, I will note for you that Chris Huitt, who I understand is the CEQA lead, has been participating in all of these meetings and has all of these documents, so he is well aware of the studies and the findings.

Commissioner Eklund stated: Actually, I have a follow up question to that. Because the comment that was made is that the, I call it like a vacuum cleaner, and you have a screen on it to prevent fish from coming in. What about the benthic organisms that are in the sand? Has there been any analysis of the impact to the organisms? Whether they are sucked up also into the sand? Do you actually see them? I am curious about that practical aspect of this vacuum cleaner that is sucking up the sand at the bottom. Can you help me to understand what that mechanism is?

Ms. Goeden explained: There are two mechanisms. One is like the vacuum cleaner that you saw, and it has, I believe, a six-by-six inch opening grate. Please correct me if I am wrong, Bill or Erika or Mike. Anything smaller than the six-by-six grate could go through the drag head itself. The screen is on the pump that brings in

the water and the screen will screen out fish but not plankton and larvae. The drag head itself would likely take the material, the animals in the top of the sand into it and pump it through the system. Many of those animals are soft bodied and so would probably not be seen in the sand because of the roughness of the sand and the water going through the pipe.

We did do a benthic study, I cannot remember which year, I feel like it was 2017 or 2018. There were some conclusions like, the critters that are living in the sand are early colonizers because the sand itself is such a moving system that you do not get solid, built-up benthic communities like you might in fine sand. But you would assume that the critters are being sucked up in that vacuum-like head.

And then on the other type which you saw which Lind Marine uses, I equate it to a straw in the sand. It is down deeper, potentially in an area where you do not have invertebrates living because it is deep under the sand. There may be some differences, but we do not have a study between the two types of mining to the best of my knowledge. Again, please correct me if I am wrong. That gets that to be a very conclusive study. But there has not been a lot of work on the benthic community, simply because it is deep and a very difficult place to monitor, aside from, I think, two studies.

Commissioner Eklund asked: So, are we going to be doing any future work on the impact to the benthic organisms?

Ms. Goeden answered: There may be some as part of the CEQA document, but I honestly do not know. We do not have currently any requirements in the existing permit for additional impacts to the biota.

Commissioner Eklund continued: The other question I have is there was mention of a private parcel. I think it was in the Middle Ground. Can someone help me to understand why is there a private parcel in the Bay, and are there other private parcels that we may not have been told about yet?

Ms. Goeden stated: Yes. That parcel was originally owned by the Navy, it is now the Grossi family lease, it is a private lease. There are other private parcels in the Bay.

I was lucky to be able to participate in the Subtidal Habitat Goals Project in 2010. A part of that project we looked at the ownership of San Francisco Bay bottom, which a lot of it is owned by the state of California but there are some owned by cities and counties via grant deeds and other transfers of property and there are some that is owned by private property owners.

If you want to see the ownership of the bottom of the Bay, you can go to the Subtidal Goals Habitat Project on the Web and look at the Bay land ownership map and it will show you the private/public ownership of San Francisco Bay. It is quite fascinating.

Commissioner Eklund replied: Yes, I am very interested in that part of it. The other question I had is that it was mentioned that some of the sand is used for restoration of beaches. What percentage of the sand that is picked up is actually used in the construction activities versus restoration projects? Do we know what that is?

Ms. Goeden answered: Well, I can tell you what I know, and Bill can add. One project, Alameda Crown Beach, is actually a flood protection project that was built many, many years ago to reduce erosion on that front. Approximately every 20 years about 80,000 cubic yards of sand is placed on that beach to replenish the beach sand that has eroded over that 20-year period. I believe the last time we placed that amount of sand on that beach was 2013.

Aramburu Island took some sand. There is a small restoration project at Aramburu Island, and I think it took maybe 2,000 cubic yards of sand. That came out of San Francisco Marina West and some of the larger pieces of sand material from, I think, Hanson, correct me if I am wrong, Martin Marietta, from their yard where they have the tailings of sand that they are not using for concrete materials.

And then there is another small restoration project I believe, around Pier 94 that San Francisco also using mostly those tailings from the Hanson-Martin Marietta, I do not know the volume on that.

But I think those are the primary areas that have used sand from the mining for restoration and I am happy to hear the miners add some more.

Commissioner Eklund asked: Is that acknowledged or written up in the Report or any of the Appendices?

Ms. Goeden stated: The Report is specifically on the studies not on the restoration use of the sand, but we certainly could quantify that for you.

Commissioner Eklund noted: I would be interested to know what percentage is currently being used, and whether or not there is a need for future replenishment and what that need is. I would be interested in that.

But thank you, very interesting presentation. Having been on the hopper dredge many decades ago, I see a lot of relationship to this activity, so thank you.

Acting Chair Eisen continued: Thank you so much. I want to thank you, Brenda, for your wonderful presentation and for the miners' presentation. I specifically want to thank Pat, Andy and Barry, who can see maybe not regretting that they volunteered for this Working Committee but can see that this is quite a task. I appreciate all of the Commissioner questions because I think that really helps our Working Group who is going to be doing so much heavy lifting on this to see what the Commission is going to be interested in knowing and understanding before we get to this permit process. Thanks to all of you.

Executive Director Goldzband alerted Acting Chair Eisen: Acting Chair Eisen, we may be losing a person or two depending upon phone calls, et cetera, who may be coming back and so on. It might be good for you to say that the Commission will go into Committee if that happens in the future, just to make sure that that is on the record. There are no votes scheduled.

Acting Chair Eisen acknowledged: Yes. We do not have anything that we need to vote on but if we lose our quorum we will go into Committee, as you put it.

9. Briefing on Sediment Management Workshops and Action Plan. Acting Chair Eisen stated: The next item on our agenda is an update on the progress made by the Sediment for Wetland Adaptation Project. The purpose of that project is to increase the availability and use of sediments and soils to restore and adapt wetlands to rising sea levels.

Our Sediment Management Working Group was created specifically to meet this challenge and BCDC hosted a two-day in-person public workshop on this topic in January and in February. Maya McInerney of our staff is going to begin the briefing on this project.

Environmental Scientist McInerney presented the following: Good afternoon, Acting Chair Eisen and Commissioners. My name is Maya McInerney, and I am a Project Manager for our Sediment for Wetland Adaptation Project. I am working closely with Brenda Goeden and Erik Buehmann on this project.

Today, I will be giving you a briefing on the sediment management workshops that we held earlier this year and the Beneficial Reuse Action Plan that we are developing right now. But before I get into all of that I want to talk with you about wetlands and our Sediment for Wetland Adaptation Project a little more generally.

You already likely know this, but wetlands will not be able to keep up with sea level rise without our help. We need to act now to help wetlands be able to adapt by raising their elevations and supporting the establishment of plants and ecosystems. There has been a lot of work done in the area of sediment management and in our region specifically, and we are bringing all of that together through our Sediment for Wetland Adaptation Project.

Our project goal is to increase the beneficial reuse of sediment and soil for wetland habitat restoration, resilience, and sea level rise adaptation in the San Francisco Bay Area. As part of that project, BCDC is developing a Beneficial Reuse Action Plan based on a stakeholder process that we conducted earlier this year.

This is a regional call to action with tasks that will be undertaken through increased collaboration with and among the stakeholders and entities, not only BCDC, who share the goal of increasing beneficial reuse in wetlands to help them adapt to rising seas.

BCDC will also undertake policy changes later this year and develop a financing strategy to support beneficial reuse.

What exactly is beneficial reuse, you may be asking. What we are talking about is recognizing sediment and soil as a valuable natural resource necessary for sea level rise adaptation; and shifting the mindset from treating it as a waste product to be disposed of, to seeing it as a resource that can beneficially be reused to support green infrastructure and nature-based solutions like marsh restoration and habitat rehabilitation and enhancement along the edge of the Bay. We are talking about sediment and soil from dredged navigation channels, streams and flood protection channel maintenance materials and excess construction soils.

The Sediment for Wetland Adaptation Project, or SWAP for short, is focused on ensuring that these materials are reused for beneficial purposes, specifically to support our wetlands.

The timeline for the SWAP is shown here on the next slide. We are in Phase 1 currently of this three-phase, three-year project. This phase is all about stakeholder engagement. At the end of this first phase, we will have a Beneficial Reuse Action Plan for the region. As I mentioned, it will include tasks for all the stakeholders involved in sediment, not just BCDC. We have a coalition of stakeholders to support the implementation of this Action Plan.

Phase one will wrap up in 2024, with Phase 2 and 3 taking place from the end of 2024 through 2025. Phases 2 and 3 will include a potential Bay Plan Amendment and financing strategy to assess costs and feasibility and funding for beneficial reuse.

Part of the project design includes regular meetings with our Sediment and Beneficial Reuse Commissioner Working Group, some of whom are in the room. We are going to be meeting also with our Core Team. We are meeting with the Beneficial Reuse Working Group who is going to be guiding our staff work on the project and is going to be an increasingly important role to play as we get into the Bay Plan Amendment part of this process.

Collaboration is at the heart of this. Along with BCDC our Core Team is made up of the Regional Water Board, the State Coastal Conservancy, the SF Estuary Institute, the SF Bay Joint Venture and the US EPA. These groups are assisting in concept and content development. We are grateful to these and all of our partners in the project.

Together with the Core Team and our Sediment and Beneficial Reuse Commissioner Working Group we designed an informational briefing series that was rolled out at the Working Group meetings in 2023.

The Commissioner Working Group invited experts to come and present to the Commissioners in the Working Group and interested members of the public to describe the sediment processes and challenges and bring everyone up to speed on the issues. These informational briefings were intended to prepare Commissioners for the Bay Plan Amendment conversations to come and to prepare stakeholders and the public for conversations held at the workshop earlier this year.

The briefings covered SF Bay sediment transport system, the process of natural sediment supply to Bay marshes, sediment considerations and challenges in wetland restoration projects, navigation dredging as a source of sediment, flood

control projects as sources of sediment, and construction and upland sources of sediment and soils. We wrapped up the series of briefings in November of last year. All of the presentations are available on the Commission's website.

In January, we turned our attention to the Sediment Management Stakeholder Workshop. This was a two-day workshop that was held earlier this year, and it was a chance for stakeholders to come together as a community. We had over 50 agencies and organizations in attendance to support changes in how sediment is managed in the Bay Area.

This work builds on and widens the coalition of interested parties in this arena. We believe this group can and will make real changes over the years to come. The workshop had breakout sessions to discuss issues and perceived barriers, and we presented potential solutions.

The issue of increasing beneficial reuse and the potential solutions has already been previously discussed in a number of forums by most of the stakeholders who attended the workshop, but we have never collected everyone together to reach a consensus and formalize that information until now.

Out of this workshop we confirmed key opportunities and barriers for sediment and soil reuse and gained a clear understanding of ideas and recommendations regarding actions and potential partners to help get this proposed work done. The actions identified make up the substance of the Beneficial Reuse Action Plan that is currently being drafted and will be released for public comment quite soon.

The Action Plan is structured in a fairly straightforward way.

We have got a Statement of Purpose section that introduces the issues and the need to increase beneficial reuse of sediment now.

There is a bit of background on how this Action Plan was developed.

We have goals and principles. The Goals are primarily to help organize the actions and the Principles define how the coalition will work together to implement the Action Plan tasks.

The Sediment to Wetlands Pathways section covers the three main sources of sediment and soil, there is construction, navigation dredging and flood control dredging. This section details the issues faced in each of these sectors when trying to get material from the source to the placement site.

And then lastly are the eight Focus Areas, which is where the meat of this document lies. This is where we present the approximately 80 tasks that pertain to all stakeholders in the region.

Before I talk about the final list of tasks, I want to present the goals and principles of this Action Plan.

The first goal is to strengthen the existing regional partnerships to support increased sediment and soil reuse and expand and improve the coordination among the government agencies and industry stakeholders to fill collaboration gaps among sectors involved in sediment and soil management.

The second goal is to identify and prepare sites for beneficial reuse by supporting the development of new and existing restoration sites to be prepared to receive sediment and soils.

The third goal is to coordinate sediment and soil supply with restoration needs and facilitate the timely delivery of the sediment and soil.

The fourth goal is to improve policies and regulations by identifying and supporting the policy and regulatory improvements across agencies and encourage more beneficial reuse.

The final goal of the Action Plan is to develop funding opportunities and expand and secure federal, state, regional and private funding for beneficial reuse.

The principles listed in the Action Plan help define how BCDC and the Core Team intend to work together and with the coalition to implement this Action Plan. This will be done with a focus on coordination, communication and collaboration to organize the many entities working in this space and through equity, to ensure equitable distribution of sediment in the region and to prioritize community input as well as environmental stewardship to support existing wetlands and sea level rise resiliency.

It cannot be done without transparency to ensure that all are able to track progress and give input.

Speed and agility are a crucial principle due to the limited time we have to make the changes outlined in the Action Plan and get ahead of sea level rise.

We also acknowledge that thankfully there are many other groups doing great work in this space and the coalition should be capitalizing on existing work and building off of it.

The eight focus areas of the Beneficial Reuse Action Plan are: Governance and Regional Coordination; Regional Planning and Research; Federal, State and Regional Policies and Communication; Regulations and Permitting; Pilot Projects; Sediment and Soil Quality; Timing and Availability of Materials and Placement; and Costs and Funding.

Within each of these focus areas there are specific actionable tasks with explicit issues and outcomes outlined and there will need to be lead organizations that carry out some of the work that are prescribed in the tasks.

The specific tasks were developed through many conversations with interview participants who were well versed in the issues at hand. We did a lot of brainstorming internally and with the Core Team and we collated the issues and actions or tasks into a matrix.

At one point we had about 140 potential tasks listed in this matrix. The two workshop days were a great way to explore the tasks further. These are some photos from one of the activities we did at the workshop. We took the comments gathered through those breakout sessions and sifted, sorted and consolidated the tasks further to get to our 80 or so tasks that will be part of the final Action Plan.

To be a task in the final Action Plan, the task had to be focused on increasing beneficial reuse of sediment and soil, which seems like a given. It also had to be achievable in one to five years, have an identifiable champion or champions, and have regional support.

Most of the winnowing down process involved consolidating these ideas. We created a parking lot for tasks that came up during this process and for one of the reasons listed here did not make the cut. This was only about five or so tasks of the original list.

What's next? We are eager to release that Beneficial Reuse Action Plan here in the next few weeks. We will be posting it to the website and collecting comments from the public for about a month. Please be on the lookout for that if you are interested in reviewing the tasks and potentially commenting on the Action Plan. After the public comment period we will finalize the document and post it to our website.

We will be switching gears once that is wrapped up. We will come back to this Commission when we are ready to initiate the Bay Plan Amendment process later this year to address necessary updates regarding sediment and beneficial reuse.

We will also be ramping up discussions with the Financing the Future Working Group and developing a financing strategy to support beneficial reuse.

We are excited about this work because it is the foundation of a climate resilience framework to support our wetlands and ensure that they are still here providing their many benefits in 50 or 100 years and beyond. Thank you for your time and attention. I would be happy to take questions about the project.

Acting Chair Eisen acknowledged: Thank you, Maya. Do not go away.

Let's hear first from anyone who wishes to provide public comment and then we will get to our Commissioner questions.

(No members of the public addressed the Commission.)

Commissioner Eklund stated: I have been involved in reuse of sediment, obviously, for wetland restoration. Also in some wetland restoration, I do not know if it is still being done or not, sometimes demolition debris has also been used. Is that still happening or is it primarily just sediment and soil?

Ms. McInerney answered: Yes. For this one I think we are looking just at excavated soils from construction projects such as like from subgrade parking lots and whatnot. Yes, I think that is another topic of a potential use, yes.

Commissioner Eklund acknowledged: Okay. Reuse of demolition debris?

Ms. McInerney replied: Yes, specifically I do not know exactly how that is used.

Commissioner Eklund stated: Okay. I know that it has been used in the past for some wetlands restoration.

Ms. Goeden added: Yes. Commissioner Eklund, this is Brenda again. We are not specifically targeting construction debris specifically. We are looking at upland excess construction soils like what is being dug up for basements, bank soils, things like that. But I do not believe there is a prohibition of using clean construction debris.

I know Hamilton was one that used concrete in the deep, deep parts of the site that did not inhibit the development of wetlands. We are just not trying right now to source that material. It would be sort of a whole other world of issues that we would have to address so it is not currently in the plan.

Commissioner Eklund continued: Yes, I was very involved with the Hamilton Wetland Restoration Project, not only as an EPA employee but also as a resident at that time.

The dredged material that is currently being dredged in the Bay by the Army Corps of Engineers and other dredging operations; have we quantified what that is and do we need more than what is currently being dredged in order to keep our shipping industry still active? Or are we going to need more soil elsewhere in the built environment?

Ms. McInerney sought clarification: Are you asking about if there is enough sediment supply from the navigation dredge?

Commissioner Eklund clarified: Yes, right. From the natural, from the dredging that is occurring in the San Francisco Bay Area total. If it is not sufficient, are we looking also for reuse of soil from the built environment as well?

Ms. McInerney explained: The LTMS manages what happens with that dredge material and there is a goal to use 40 percent of it beneficially. That has been met, I think. I am looking for Brenda on the screen, she is our LTMS rep. I will let her speak to this one a little bit more.

Ms. Goeden stated: Yes, maybe I will just jump in again; thanks, Maya. Commissioner Eklund, The Sediment for Survival Report put out by SFEI says that between now and 2100 we need between 450 million to 650 million cubic yards of sediment or soils for the wetlands specifically to restore and help them keep up with sea level rise.

The calculation around the navigation dredging, we dredge between 2 and 3 million cubic yards annually, Army Corps, private ports, marinas, refineries, et cetera. That is not enough. They think it represents about 50 to 60 percent over time.

So, we are looking at the upland construction soils, South Bay Salt Ponds, Southland Shorelines are currently importing upland construction soils, clean soils to help with some of that restoration.

There is additional material, although a much smaller amount, in the local flood protection and stream bed maintenance materials.

But the general consensus is that we do not have enough to do everything that we are hoping to do and keep up with sea level rise, which is one of the reasons why we are pushing very hard to get as much of it going in the right direction as possible.

And then there are further afield sources such as reservoirs, which are a different supply, much more challenging to get into. But we are starting here with this one-to-five-year project to try to free up as much of the material and getting it to the right place as possible and get rid of some of the barriers.

Commissioner Eklund continued: Right. I guess the issue there is that since it is not going to be enough, then we are going to have to figure out how we are going to be able to collect some of the soil that is excavated, not only for major construction but also maybe even for residential as well.

I know that there is a lot of changing of the buildings, for example, from office to residential, and so some of the buildings will have to be taken down. That is going to be a lot of demolition debris that may be available if we are able to figure out how we are going to collect it as a society here in California or even in the Bay Area. The same with soil from even residential areas too.

Just having recent experience of having some soil we needed to get rid of. I was shocked that there was not a place that I could take it to for it to be reused because it was clean. It had to be thrown away in the garbage, which you do not want to fill up the landfill with good soil or good demolition debris when it could be used elsewhere.

This may be something we may want to get some of the state agencies involved in that really promote recycling of a lot of different materials.

Anyway, I just remembered from my days with the Army Corps and EPA is that we did not have enough dredged material and I just wanted to see if that was still the case, which it is. I am just really excited about the possibility of maybe even changing how we deal with construction companies as well as individual residents and how we can reuse that material that is so valuable. Thank you.

Commissioner Showalter commented: I just wanted to take a moment to thank the staff for the work that they have done here. I have viewed this as them supplying us with a class of Sediment 101. We have really had amazing speakers come talk to us about the science and the operation of sediment removal in San Francisco Bay. We got a great foundation and then we had the workshops.

I think it was the best way we could possibly get a stakeholder group together, get them all on the same page, and then have them brainstorm. I have really enjoyed taking part in this and I look forward to the next few steps that we are going to come out with. I am really glad to hear that the list is a mere 80 now, so thank you very much.

Commissioner Moulton-Peters spoke: I also want to add my thanks to the staff and our Committee for the work you have done. Just to say that I am really looking forward to our bringing all the agencies on board with this beneficial use.

Just as an example, I have a project at McInnis Marsh where we have Bolinas Creek right next door that we are going to dredge. We are waiting to get approval from numerous agencies to take the dredged soils and put them on the Marsh to restore it and it has taken an agonizingly long time to line up all these approvals. So, I look forward to speeding that process when it is the right thing to do. Thank you.

Commissioner Eklund asked: If the sediment itself is not of the quality that we need for a particular wetlands, has it been discussed about who pays then for the cleanup of that material or whether it is not even just used then? Thank you.

Ms. McInerney replied: We have not gone through all of the costs and funding situations and scenarios yet, so we will probably be leaving that one to talk about a little bit later on.

Acting Chair Eisen continued: Thank you, Maya, thank you for your presentation. Thanks again to all the Commissioners, especially those who are on the Working Group who are dealing with all of these issues on our behalf, I appreciate it.

10. Briefing on Delta Adapts. Acting Chair Eisen stated: We have one more presentation on Delta Adapts. That is a climate change adaptation study which has been created and managed by the Delta Stewardship Council and it is designed to improve the Delta's resilience to climate change hazards, including, of course, sea level rise.

The briefing will be introduced by Cory Copeland, who is BCDC's Chief Scientist and also a former Delta Stewardship Council staff member. Thank you, Cory.

Chief Scientist Copeland addressed the Commission: Thank you so much, Acting Chair Eisen; and good afternoon, Commissioners. I am really pleased to be introducing this item. As Acting Chair Eisen mentioned, I had an opportunity to work on this during my time at the Delta Stewardship Council before joining BCDC as the Adapting to Rising Tides Data and Science Manager.

As I said, excited. As a reminder, Delta Adapts is the state's climate change adaptation plan for the Sacramento-San Joaquin Delta, which forms the upper estuary of the San Francisco Bay Delta.

I have been on both sides of the collaboration between BCDC and the Delta Stewardship Council and have seen how that collaboration has improved both the Delta Stewardship Council's work as well as BCDC's work on climate adaptation

Just to give one example for context for you all, the funding and investment framework that helped us identify a \$110 billion need for investment in sea level rise adaptation in the Bay Area, for certain sections of the analysis used hydrologic work that was done for Delta Adapts' Vulnerability Assessment.

With that interrelationship in mind, I am really glad to have a couple of folks from the Delta Stewardship Council here to present on their Adaptation Plan that is coming out soon. Here to speak on that are Jeff Henderson, the Planning Director for the Stewardship Council, and Morgan Chow, a former BCDC employee who is now the Manager of Climate Adaptation and Environmental Justice at the Delta Stewardship Council, who will be giving a presentation.

Mr. Henderson presented the following: Good afternoon, Commissioners. It is a pleasure to be here on behalf of the Council to present on our Delta Adapts Climate Change Initiative. This initiative is something that we have been leading since 2018 with a goal to better understand specific risks faced by the Delta and propose strategies to prepare accordingly. To our knowledge, it is the first of its kind for the entire Delta region that cuts across multiple topics.

There have been adaptation plans prepared at the local level or adaptation plans prepared to address a single topic such as water supply or ecosystem or flooding or agriculture. To our knowledge, this is the first at this scale that addresses multiple sectors and topics across the full region of the Delta itself.

We are about to release our adaptation plan, just putting some final touches on it and completing some final reviews. We are really excited to release that because it shows how far we have come throughout the project's process, how much we have learned, and it sets a framework for making a lot of much needed adaptation actions happen within the region.

It is the result of many years of conversations across probably the most diverse group of interests and expertise that the Council has engaged to date.

The work recognizes a lot of great progress in protecting the Delta thus far, but also points out all the areas we still need to amplify our work to be more innovative, to provide and prioritize adaptation strategies to keep up with the impacts that we are already seeing.

The work is being led by the Council, which was created to help safeguard Delta assets, and adaptation is a critical consideration to achieving our mission. We have identified needs, resources, partnerships, and importantly, leaders that are needed, as much of the plan relies on a collaborative effort among a number of agencies.

In our presentation today, Morgan is going to provide a preview of some of our draft adaptation strategies that make up the bulk of the forthcoming Plan.

We are interested to hear your feedback around clarity of these strategies and any priorities or adaptation work outlined for BCDC to help inform the final draft of the Plan.

Again, just to orient everyone, this is a map of the legal Delta, which is on the right, with the Sacramento and San Joaquin Rivers shown in dark blue. The Suisun Marsh in the center, which we identify as our overlapping jurisdiction with BCDC. That is in the middle. And the San Francisco Bay on the left. This is in the spirit of managing this estuary as one Bay-Delta estuary, where the activities that take place in the Bay affect the Delta and those that take place in the Delta affect the Bay.

The first phase of our project began in 2018. It was a Vulnerability Assessment in which we identified assets and systems most at risk from climate change. It relied heavily on natural and physical sciences and primary and secondary research. We found the following:

One, flood risk is one of the most pressing threats to the Delta and it is going to continue to worsen in the future with changes in sea level, precipitation, hydrology and temperature.

These are not all going to impact Delta residents in the same way or in an equitable way. It will affect the Central and Southern Delta the most, with a key concentration in the Stockton area.

This means many of the residents exposed to flooding may have a higher sensitivity to flood impacts and a lower capacity to adapt. We will talk more about how flood risk in the Delta is different than in the Bay when we cover our strategies, particularly those related to flood risk reduction.

Two, Delta water exports will be less reliable in the future due to climate change. The Delta's existing water supply system does not provide enough storage to capture anticipated increases in runoff due to more variable precipitation.

I think it is worth pausing to note that in the Delta one of the things that we found out from the Vulnerability Assessment is that the Delta system is much more affected by anticipated changes in riverine flows from the Sacramento and the San Joaquin, based on the situation of more precipitation falling as rain and less as snow, than the region is affected by sea level rise. Sea level rise and riverine inflow are both components of the vulnerability. The riverine inflow aspect seems to be much more directing the outcomes in the Delta.

In terms of water quality, in-Delta water users may be threatened by water quality declines, future droughts, and all of that exposing more acres of Delta agriculture to more saline water than has historically occurred.

Delta agricultural production trends will shift due to climate change. Increasing temperatures and the number of extreme heat days are both projected to reduce yields for many Delta crops.

The number of extreme heat days will increase throughout the Delta and communities identified as most vulnerable to that extreme heat are located predominantly in the cities of Stockton and Tracy.

Now I will ask Morgan to jump in and give the presentation on our upcoming Adaptation Plan. Thank you.

Ms. Chow spoke: Thanks, Jeff. Good afternoon, Acting Chair Eisen and Commissioners. I am happy to be here presenting to you. As Cory mentioned, I used to work at BCDC; I was a permits analyst in the Shoreline Development Unit, so it is nice to be back.

Phase 2 is the development of the Adaptation Plan that we are speaking about today, which includes a range of actions to improve regional resilience to climate change for the Delta. This graphic shows our process and how we leaned on, as Jeff mentioned, probably the most diverse set of interests that we have engaged with at the Council, as well as our Vulnerability Assessment findings, to explore adaptation needs and priorities and then develop the strategies to address those.

We worked across four focus areas for the development of the Plan, agriculture, flood risk reduction, ecosystem, and water supply reliability over the last two and a half years, working to integrate equity throughout.

We also worked across an interdisciplinary group where we brought together those focus groups several times.

Our engagement for scoping the Plan began in 2021. We cohosted a workshop series with several community organizations in Stockton, which is a very highly socially vulnerable city in the Delta.

This engagement with this group of community organizations continued. Several of those have informed other components of our work, including our tribal and environmental justice work.

We have also incorporated several tribal consultations into the Plan and informal meetings with other agencies at the state, local and flood and water agencies.

The Council holds many collaborative forums that have been topically relevant for adaptation that have been incorporated into the Plan.

Another critical component is for the first time the Council reaching and hearing directly from Delta farmers and growers. We were able to hear firsthand about the challenges that they are currently grappling with, how they are adapting and what they need to further adapt.

Lastly, we heard a lot from interviews both through our environmental justice work and also results from the region's first representative survey of Delta residents that has informed our work.

As we approach having a public draft of the Plan, we have been spending a lot of concerted effort in three cities in the Delta that have scored particularly high in terms of their social vulnerability to climate impacts from an index that was developed as part of our Phase 1 and those are Antioch, Pittsburg and Stockton. Antioch and Pittsburg, of course, have overlapping jurisdiction with the edge of BCDC's jurisdiction and ours.

We are now at the point where we are proposing our set of strategies in our Plan. They are both physical and management level strategies that will be realized differently according to the specific location in the Delta. Our focus with the strategies is to maintain flexibility and to be able to incorporate new climate data as it becomes available, prioritizing projects that offer multiple benefits in an equitable manner.

Jeff touched on this a little bit, but each strategy before I get into them has a recommended lead, according to the agency that makes the most sense to lead, not necessarily only by regulatory authority, and several proposed partners.

We also worked to highlight strategies that we feel according to cost and order of operations should be implemented first or near-term.

Cory mentioned some of our analysis previously, but we have worked to identify adaptation costs for some of these big projects and compare those to the value of our assets at risk, which was part of our Phase 1.

We are careful to note the strategies and their relationship to our existing Delta Plan, which is our long-term management plan for the Delta in relationship to other state regional and resource-specific plans, as well as case studies that exemplify the types of strategies we want to see moving forward.

Touch briefly on how we are including equity throughout all of our strategies. Equity is a component in three main ways.

First, in terms of representational justice. In a lot of the proposed actions in our Plan we are working and recognize it is increasingly important to have decisions and the decision-making bodies represent communities that are served, so that communities are both informed represented and involved in these planning processes.

Another is through the prioritization of investments. That is continuing to work to understand who faces the most risk and who needs investment for adaptation the most.

The last was heard across the board in a lot of our discussions, was just the need to continue to improve and amplify risk communication and education and present what were our findings from Phase 1 and 2 to the most socially vulnerable communities in our region.

Now to the strategies. The first of our four focus areas is flood risk reduction, which has a lot of interest in the Delta. As Jeff mentioned, we have seen substantial progress, but a lot more needs to be done to adapt to climate change. These graphics for each focus area from left to right show a summary of the vulnerabilities, an illustrative summary of our types of strategies we are proposing and then some example actions.

On the left in terms of what we found related to flood vulnerability, we know that climate change will affect the entire system from all directions in the Delta. That is riverine inflows, that is tides, storm surge, flood control and water supply operations.

This is, as Jeff mentioned briefly, a distinction from how BCDC approaches flood risk, which is more focused on sea level rise. We are looking at river inflows and levee overtopping.

While there have been substantial investments in our levees in the past few decades, there is still a lot of work to do. Our strategy is to outline what is needed through a well-rounded approach to addressing both the hydrological variability and challenges posed by climate.

Our Delta Plan does lay the foundation for addressing a lot of these strategies. For flood risk we have policies related to how we invest in levees and how we support flood management and land use decisions. And then these strategies go beyond and just a few examples.

We have a strategy that touches on specific flood modeling needs and collaboration and communication on that topic and continuing to work on our Delta Levee investment strategy. Another example of a more nonstructural measure is just to raise the awareness about the importance of flood insurance.

In the Delta region there is a very low, despite the flood risk there is a very low percentage of folks that actually have flood insurance.

The second focus area is ecosystem. The Delta ecosystem provides habitat or refugia migratory pathways. We know the value of the ecosystem as a whole for buffering from impacts from climate change. We know from our Vulnerability Assessment that the ecosystems in the Delta will continue to be stressed and have limited room to migrate.

Again, in the Delta Plan we have policies and recommendations related to protecting the Delta ecosystem. We have actual specific targets for the amount of acreage that we want to restore. Our strategies here align with and go beyond what is in our Delta Plan.

I will just say a few things. We call out some of the co-benefits related to restoration. That is recognizing the reduced flood risk that can be brought from projects and the importance of improving access to green space and open spaces and the cultural value and the need to work alongside tribes in these restoration projects.

Another example from our strategies is the importance of halting and reversing subsidence that the Delta experiences. That can be done in several ways depending on the land ownership and feasibility. It could be through different types of restoration, but also through planting crops such as rice.

Next is our agriculture focused area. Agriculture in the Delta is a fundamental part of the Delta's culture, history and economy. It is the economic engine of the region. It provides jobs and significant annual economic input-output.

However, agriculture we know from our Phase 1 faces a lot of challenges with climate, including variable precipitation, saltwater intrusion, water quality decline, flooding, extreme heat, and reduced chill hours, which all compound to impact both crop yield and quality.

Again, our Delta Plan does lay a foundation for addressing agriculture and the needs for adaptation. We have several recommendations for state agencies to adaptively manage agricultural lands and also to provide habitat conditions where feasible for native species.

Our strategies are diverse here. We have strategies related to acknowledging the need for an equitable regional food system. This includes things like labor and workforce development for farms.

We have quite a few actions that support climate-smart farming practices. These are actions such as irrigation efficiency, building soil health, pest management, other things like that. Recognizing the importance of diversifying income and revenue for farms, so support for agritourism, cultural opportunities, funding environmental credits like carbon credits or wildlife friendly farming, and then where feasible to identify where land might need to be retired if there's other uses that would be of high value.

This is our last focus area, water supply reliability. The Delta watershed provides a portion of water supply for approximately 27 million Californians. We know with climate change from our Phase 1 that water supply will likely decrease as demand increases and we experience more variable precipitation and decreased snowpack, as Jeff already mentioned. Our infrastructure will also be at risk to several climate impacts.

Again, the strategies here go beyond the foundational policies in the Delta Plan, which does require suppliers to reduce reliance on the Delta.

Our strategies, we have five strategies. The first is reducing reliance on the Delta. There are several actions here such as funding projects that promote urban and agricultural water conservation or recycled water. We have a strategy related to increasing local storage of surface and groundwater supplies, both north and south of the Delta. A strategy related to modifying reservoir operations to be adaptable to changing climate conditions. And then lastly, a strategy to review and consider modifying water quality standards so that there are objectives that provide for several beneficial uses of water such as agricultural, fishing, recreational, tribal, and other human beneficial uses of water. Our last one is to improve or modify the infrastructure in the Delta to minimize the impacts through Delta conveyance.

Our Plan also has a Governance chapter that addresses the unique history, challenges and recommendations for adaptation governance in the Delta, as governance does determine the process for planning, funding, implementing all of these activities that we are talking about.

This graphic that is on this slide was developed by a Delta Science Fellow Tara Pozzi; a UC Davis PhD candidate who is doing network mapping to understand how climate collaboratives are connected. This shows that our project is a climate collaborative that connects a significant portion of practitioners in the region.

Just a little bit more on governance and this ties to our equity components and to our environmental justice work. Just noting the importance of working to have procedural justice or have our processes and decisions represent the communities that we serve. We include some practices related to participatory governance and adaptive management. We also have work at the Council that is working to understand how tribal or traditional knowledge can have a better role in Delta decision-making.

Just to wrap it up, we just wanted to share just a little bit about more of our role moving forward. We have already touched on a lot of these components. What is at forefront for us is continuing to advance representational justice in adaptation decisions. This is through increased relationships with community organizations and tribes.

To continue to use our resources and with our partners to amplify better communication, specifically on risk to these climate hazards that we are discussing.

We have a science program that funds a lot of research in the region. Working closely with them to address a lot of the research gap that came out of these conversations.

I just touched on the traditional knowledge work.

And then thinking about how to fund all of this. This is an area where we learn to collaborate a lot with your planning staff and just thinking about regional funding for adaptation.

Lastly, just working through our existing regulatory authority or our covered action authority. Just continuing to promote land uses that enhance Delta resilience, halt and reverse subsidence and reduce risk overall.

That is all from me. Thank you very much for having us here as we are getting very close to having a draft out for public review. Yes, we appreciate your time for letting us present today.

Acting Chair Eisen acknowledged: Thank you, Morgan.

Before we get to any questions or comments from Commissioners, do we have any public comment regarding this agenda item?

(No members of the public addressed the Commission.)

Acting Chair Eisen continued: Thank you, Cory, Jeff and Morgan for that very in-depth presentation.

I am going to look to see if I have any Commissioners that want to ask questions or comment on your presentation.

Commissioner Eklund was recognized: You have come a long way, obviously, in addressing a lot of the issues that are confronting the Delta. I have a couple of technical questions. Has the rate of subsidence increased over time, or do we know?

Ms. Chow replied: I do not actually know the details of the rate of subsidence. Yes, if you are looking at the whole Delta it would be interesting. There is a lot of active work to address those exposed peat soils. But we can get back to you. I do not know if Cory or Jeff have thoughts.

Mr. Copeland added: I was just going to say, for most of the Delta the peat soil is so deep that anywhere there is traditional land management it is subsiding at a fairly consistent rate throughout time.

There are experiments in certain locations to do subsidence halting or even subsidence reversal activities. I know those are encouraged in the Delta Plan.

An example of that is on Sherman Island there are managed wetlands that are managed specifically to do subsidence reversal and they do carbon sequestration monitoring at those sites, as well they have experimented with using rice to slow down subsidence.

It is a major topic but at this point it is not universally taken as land management in the region, but I know that there is a lot of effort to promote it more.

Commissioner Eklund continued: Okay. The rate may have actually slowed down in some areas because of the reversal that people are working so hard to try to embrace, correct?

Mr. Copeland concurred: Yes, although I will say those are relatively limited projects.

Commissioner Eklund acknowledged: Limited, okay. Yes, I think that rate of subsidence from what I knew years ago was increasing quite a bit and there was a lot of effort to try to reduce it. I know that is still a major issue.

The comment was made about flood insurance. Flood insurance, I know is really super expensive and a lot of the folks that I know in the Delta that manage a lot of those islands or whatever, they may not necessarily have the funds. Is there any financial support from the federal or state government to help subsidize the cost of that insurance for them? Especially if they are doing more public work or whatever on their land management. Is there any opportunity for financial assistance on that? It is a poor region.

Ms. Chow replied: Yes, yes, that is a really good question and point. We know it is a little bit under 20 percent of residents have flood insurance, so it is really low, and it is expensive.

We track FEMA's programs. I know FEMA does have the community rating system so that is at a community scale. You can undergo a lot of different activities to get lower rates.

I do not know about a lot of other programs at the federal level, but we are also tracking some other smaller scale efforts to get communities more protected.

Kathy Schaefer, who I think is a post-doc, may be a PhD candidate at UC Davis, does a lot of research related to flood insurance and flood preparedness in the Delta. She has been working with the community in Isleton.

They created a geologic hazard abatement district, which is a way that you can access more funds to help with flood preparedness. So, it is not like just insurance, but insurance could be a component of that.

Commissioner Eklund asked further: Thank you. On the restoration of the levees is there is still active efforts to help strengthen and restore those levees as there was in the past or has it diminished?

Mr. Henderson replied: There are ongoing efforts to continue, the state is continuing to fund what is known as the Subventions Program that provides a mechanism for maintenance and rehabilitation of the levees.

Commissioner Eklund acknowledged: That's great, I am glad to hear that. The Peripheral Canal, is there an effort to limit the amount of water that goes down the Peripheral Canal to Southern California or is that something that is pretty much set in stone, or do you know?

Mr. Copeland surmised: I suspect they do not want to comment on it as it is likely to come through their office as a covered action.

Mr. Henderson added: Cory, it would be wonderful if you would do that, yes.

Commissioner Eklund noted: I would imagine it is a little bit controversial, no question.

Mr. Copeland offered an update: It is no longer the Peripheral Canal, it is now called the Delta Conveyance Project that is being proposed by DWR and under, as I understand it, environmental review right now. I suspect at some point that will go before the Stewardship Council to be reviewed.

But at this point it is in a planning and review phase for that project. Some questions about the operations like how much water would be wheeled through it I do not think are fully resolved to be commented on yet. But it is certainly something people are very interested in.

Commissioner Eklund stated: Probably shows my age then. Definitely, thank you very much for that.

The last question I had is that you talk about the change of land use. My personal experience in the Delta is that there is a lot of families that pass on the properties down to the different generations. How is that being encouraged? Is incentives of buying their property one of the issues or have you identified other mechanisms where you can encourage the change in the use, which is going to be very difficult for a lot of landowners?

Ms. Chow offered the following: Yes, I can start and maybe Jeff or Cory could add if they want. Yes, the Delta is an interesting place, especially compared to the Bay, which is so urban.

The primary zone of the Delta, as you may know, has strong development restrictions. A lot of the land use changes, at least that we explored for Delta Adapts, was looking at where there is potentially farmland or abandoned farmland that is not active anymore. Yes, are there land use incentives for it to become something else?

So, if it is peat soils as we were talking about before and they are exposed and are oxidizing and subsiding, is it financially feasible or an option to wet that land? Can it become a managed wetland? Could you grow rice there?

I think those are some of the changes that have been explored from the conversations we had with farmers throughout the Delta.

Different parts of the Delta have their different challenges, specifically with farming. Some farmers are open to exploring different land uses. It just is a question of financial feasibility and sometimes wanting more technical assistance.

We partnered with the Department of Food and Agriculture in the interviews that we conducted as they have at least half a dozen different incentive programs that they provide to growers to undergo different practices and also to help them be more financially profitable. Yes, that's some of the topics we explored.

Commissioner Eklund acknowledged: Great. Thanks, I really appreciate the presentation and really appreciate what you have been able to do in the Delta.

The Delta, for people who do not know, the Delta is a very special place. Really encourage people to get to know it because it definitely has a tremendous impact on the whole San Francisco Bay. Just really want to compliment everybody who has been involved in this. My hat is off to the accomplishments that you have been able to make. Thank you.

Executive Director Goldzband commented: Morgan, and Jeff, great to see you, of course. The progress that you have all made on Delta Adapts is marvelous and we look at it, of course, from the west side and you are from the east side and thankfully the twain meet.

I think the real question though is something that we have grappled with over the last couple of years, which is how you take the strategy and actually start getting traction on the ground.

We have had Bay Adapt and we now have this thing called SB 272, which really gives us a real push to ensure that what Bay Adapt does really has some real major impact and can get traction.

How have you all started looking at implementing this and working through the process of having to work with the heavyweights like DWR and Food and Ag as well as the incredibly well-entrenched and well-meaning folks who have owned land in the Delta since the mid-1800s, for heaven's sake, and the like. The number of interests that you all have to deal with is certainly at least as long as ours.

Mr. Henderson commented: Thank you, Larry. We are just at the initial stages of beginning to think about an implementation and actually are looking to learn as much as possible from the pathways that you all have charted.

I think one of the other considerations that we have discussed is enlisting the Delta Plan Interagency Implementation Committee or DPIIC, which is essentially a committee formed, and Larry sits on this committee on behalf of BCDC as well, it is a committee formed of the agencies that are charged in the Delta Plan with various different responsibilities for implementation.

We are looking to use the DPIIC as a place to bring some of these recommendations and start unpacking them; and looking to work with all the individual agencies to identify what resources they may be able to bring to the table, what lessons learned that they have from various different experiences. Then to use that as a place to consolidate the implementation of Delta Adapts.

That is some of our early thinking. In combination with then moving toward a bit more of a Memorandum of Understanding structure that helps to solidify the roles and responsibilities of the various agencies as they relate to the specific strategies.

Ms. Chow commented: I think our regular check-ins with BCDC, since we are doing similar in a lot of ways adaptation work, but we are operating with very different actors and different settings, but we can learn a lot from each other.

Another thing to say about the Delta is we have ideas for at the MOU structure and the DPIIC level but there are also things that can be done like the Isleton model for flood risk and flood preparedness. Can that be done at another island? Or more smaller scale ideas or like what Cory mentioned about Sherman Island and experiments around rice and subsidence halting.

How can we replicate some of the things that are already happening in other places, while at the same time we are also trying to get alignment at our executive level, at the higher level.

Commissioner Nelson stated: I wanted to follow up on a comment. A really interesting briefing, I really appreciate it. I want to follow up on a comment that Morgan made about one of the differences between the Bay and the Delta and that is the Bay Area is so urbanized as compared to the Delta.

There are a couple other ways that seemed pretty clear to me where Delta adaptation planning is really different from adaptation planning, we have been doing in the Bay Area and more complicated, more challenging. Urbanization is one that has huge implications with regard to financing obviously for adaptation.

There are two more that are really different. First is the fact that the Delta is such an important water supply source for other parts of the state. That means that water conservation in San Diego can be considered part of a Delta adaptation strategy. That is not easy.

It is also true that the flood risk in the Delta is driven to a substantial part by flood coming in from and water management activities upstream from the Delta. So, flood management upstream from the Delta is an important part of protecting communities like Stockton.

I just wanted to ask how you are thinking about those boundary challenges? On the one hand are you including upstream flood management, multi-benefit projects upstream as a flood adaptation strategy in the Delta? And to what extent are you going to be focusing on the physical safety of the Delta, Delta agriculture and so forth, compared to those water management benefits where the Delta Council may have a hard time moving the needle? It is a really different picture and more complicated in some ways than the work we are doing in the Bay?

Ms. Chow replied: Yes, that is a really good point. I would say yes, absolutely, especially our flood risk reduction proposed strategies and the strategies around water supply reliability note that a lot of what needs to happen is not in the legal Delta, so we touch on a lot of the upstream and downstream activities.

I think in terms of the community health and safety and wellbeing, that is a little bit more focused to the communities that live within or adjacent to our legal Delta boundaries. Yes, you make a really good point. It is included in our strategies.

Right now, the draft Plan, it does in some ways look just like this massive menu of strategies.

We have done some initial prioritization in terms of what we feel needs to happen first, what could happen with existing funds. Then there is also that filter that comes in where what is feasible within our control? What can we lead? What are our partners willing to lead? What are we tracking that is already happening, but we want to happen more?

So, I think there's a lot of different levels at which we can engage, especially when we are talking about strategies outside of the Delta. But yes, it is challenging. You make good points, and we are trying to think about it to our best abilities.

Mr. Henderson added: Commissioner Nelson, your question about boundary issues, as do a number of things, reminded me that the Delta Stewardship Council is actually a statewide agency. That it represents statewide interests as they pertain to the Delta.

So, yes, we do need to be considering things like water conservation in San Diego and how that affects, in turn, the amount of water pumped through the Delta, and in turn the amount of water stored in a reservoir upstream. These are things that we are very aware of.

I think in it, Delta Adapts itself does pay a considerable amount of attention to the Delta itself.

One of our own self-critiques of the work is probably that it does not do as much as it could to address some of the things that need to be happening outside the Delta to affect the health in the Delta.

I do, though, understand that the strategies, as Morgan mentioned, the strategies where possible do recommend activities that occur upstream or downstream from the Delta that are necessary to achieve the climate benefits that we are seeking in the Delta.

Commissioner Nelson continued: Just one last thought there and that is to follow up on Larry's comment a moment ago, and that is that it is going to be really important, given the breadth of adaptation actions that are relevant to the Delta, that it is going to be really important for the Council to think through the areas where you folks are really going to take the lead and try to drive the debate forward and really move the needle. You are going to have a really big, broad adaptation list.

Mr. Henderson stated: We love a good challenge.

Commissioner Nelson responded: Good luck.

Acting Chair Eisen asked: Any other comments or questions regarding the Delta Adapts presentation?

(No further questions or comments were heard.)

11. Adjournment. There being no further business, upon motion by Commissioner Nelson, seconded by Commissioner Eklund, the Commission meeting was adjourned at 3:51 p.m.