San Francisco Bay Conservation and Development Commission
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March 27, 2015

TO: All Commissioners and Alternates

FROM: Lawrence J. Goldzband, Executive Director (415/352-3653; larry.goldzband@bcdc.ca.gov)
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SUBJECT: Draft Minutes of March 19, 2015 Commission Meeting

1. **Call to Order.** The meeting was called to order by Acting Chair Chappell at the Ferry Building, Port of San Francisco Board Room, Second Floor, San Francisco, California at 1:09 p.m.

Then the Chair announced the process for speaking at the public hearings on the sand mining permits; that there would be speaker cards first for general comments and then cards for each application. He further explained the process and that staff was available to help if there were any questions. The Chair requested that speakers refrain from repeating themselves.

2. **Roll Call.** Present were: Acting Chair Chappell, Commissioners Addiego, Bates, Cortese (represented by Scharff), Gibbs, Gioia, Gorin, Lucchesi (represented by Alternate Pemberton), McGrath, Pine, Randolph, Sartipi (represented by Alternate McElhinney), Sears, Spering (represented by Alternate Vasquez), Wagenknecht, Ziegler, Zwissler. Assembly representative Michael Sweet was also present.

Acting Chair Chappell announced that a quorum was present.

Not present were**:** Governor's Appointee (Wasserman), Alameda County (Chan), Department of Finance (Finn), San Francisco County (Kim), Senate Rules Committee (Nelson), Association of Bay Area Governments (Techel), Secretary for Resources (Vierra), U.S. Army Corps of Engineers (Hicks), Governor's Appointee (Vacant), and Association of Bay Area Governments (Vacant).

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

There were no public speakers to comment.

Acting Chair Chappell moved to Approval of the Minutes.

4. **Approval of Minutes of the February 5, 2015 Meeting**. Acting Chair Chappell asked for a motion and a second to adopt the minutes of February 5, 2015.

Commissioner McGrath had a point of order: I was not present. I understand this still allows me to vote on the Minutes. Can they be adopted if I abstain?

Executive Director Goldzband replied: Sure.

MOTION: Commissioner Addiego moved, seconded by Commissioner Vasquez, to approve the February 5, 2015 Minutes. The motion carried by a voice vote with Commissioners Gibbs and McGrath abstaining.

5. **Report of the Chair**. Acting Chair Chappell reported on the following:

a. **New Business**. Does anyone have any new business to propose? No new business was proposed.

I am pleased to inform you that Supervisor Jane Kim has been appointed as the representative of the County of San Francisco.

The staff recently held in Solano County the first of our "road shows" on the Commission's program to respond to a rising Bay. I would appreciate it if Commissioner Vasquez could briefly provide us his impressions of the event.

Commissioner Vasquez presented the following: I want to thank Chairman Wasserman for encouraging us to do this. This was the first presentation of this kind in Solano County. What I took away from it was that people were very interested. We had about 100 people show up, planners, city managers, council members, mayors and just folks in general concerned about the issue.

The one thing that they really wanted to see more of was a bigger study of Solano County all together. The Commission only has regulatory powers over just the edge of the waters but the folks up in Rio Vista and Dixon were also interested. We had FEMA there. There were more questions than answers that could be provided. I see a future workshop in this. I am hopeful that BCDC staff will help us with that. It was well received and it was covered by the newspapers. I feel very good about it and I feel very good about the staff making a presentation. I want to thank you again.

Acting Chair Chappell announced: We do have a card for public comment, John Coleman.

Mr. Coleman commented as follows: I would like to invite the Commissioners and those in the audience to our 28th Decision Maker Conference on April 9th at the Scottish Rite Temple in Oakland. It's an all-day event. We are going to be focusing on the decision makers' action in growing the maritime and industrial economy to secure a sustainable future. One of our confirmed speakers is Congressman Jarod Huffman. Our three panels are going to focus on laying the foundation, the competitive value of the northern California maritime and industrial economy. We will discuss framing the issues and risks to the Bay Area maritime and industrial economy and finally to building the future solutions to assure sustainable growth to the Bay Area industrial economy. The economy is changing in the Bay Area. We also know that the ports and harbors are critical to the economy of the Bay Area. We will be talking about this as well as what happens along the shoreline and how do we protect the industrial base while at the same time protecting the environmental aspects of the Bay that we like and enjoy so much. We do have a rate for government officials as well. Thank you.

b. **Next BCDC Meeting**. Our next meeting will be held April 2nd, here at the Ferry Building in San Francisco. At that meeting we will take up the following matters:

(1) We will consider a contract with AECOM for work to support the Adapting to Rising Tides Project in Contra Costa County.

(2) We will have former Executive Directors Michael Wilmar and Will Travis providing the next in the BCDC history lessons.

(3) We will have a briefing by Caltrans on the Bay Bridge.

(4) We will have a briefing on the proposed Treasure Island Project.

c. **Ex-Parte Communications**. That completes my report. In case you have inadvertently forgotten to provide our staff with a report on any written or oral ex-parte communications, I invite Commissioners who have engaged in any such communications to report on them at this time. (No Commissioners reported ex-parte communications)

6. **Report of the Executive Director**. Executive Director Goldzband reported:

Thank you very much for being here today. This afternoon the Commission will take up two very important issues, and one thing that is common to both is the element of surprise. My late uncle, a banker in Chicago, once told me that the shortest period of time is the period between the time that you put some money away for a rainy day and the unexpected arrival of the rain. While we still await that rain, I think that today's meeting will demonstrate our staff's ability to successfully work through unexpected issues in various fashions successfully and, I hope, help you understand complex issues.

BUDGET and STAFFING:

Steve Goldbeck has worked closely with the Senate Finance Committee and the Legislative Analyst's Office during the past couple of months as they consider how we are expending our current year budget and hope to spend next year's augmentation proposed in the Governor's budget. Steve Heminger, Executive Director of the Metropolitan Transportation Commission, and Bijan Sartipi of Caltrans, asked BCDC staff to provide their teams with a briefing on our Adapting to Rising Tides program, commonly known as ART. They and their staffs are very taken by the probability that ART could provide a very successful vehicle to help them determine how best to protect transportation assets as part of a shoreline-wide ART program. So, our staff has developed a work plan that Steve, Bijan and I shall present to Caltrans executives next month in Sacramento and for which we shall ask funding.

I also want to introduce our newest staff member. Maggie Weber is standing in the back. Maggie Weber has joined our enforcement unit after spending a couple of years working with the Coastal Commission. She earned her undergrad degree in history at San Diego State University. She earned her law degree at Southwestern in Los Angeles.

POLICY:

Steve Goldbeck and I had the pleasure of being in Washington, D.C. two weeks ago during the week of very cold weather and a large amount of snow. We attended two meetings: the national Coastal States Organization annual meeting and the annual National Oceanographic and Atmospheric Administration's (NOAA) Office for Coastal Management meeting. Both meetings brought together our coastal zone executive colleagues from around the country. CSO has undergone a rather large and positive transformation during the past three years under its new leadership and has found new influence on Capitol Hill and in the Administration. Steve and I – along with Charles Lester of the Coastal Commission and others – visited several Senate and House offices to talk about coastal programs and not surprisingly, they are very supportive. We are also starting to make some new relationships with members of Congress from the Central Valley. In front of you is a packet that we distributed which you might find really interesting. I also want to thank Brad, Joe and Sharon for stepping in during our absence in the midst of a very busy week.

I want to let you know of three things that are very important. First, Reggie Abad of our staff soon will send to you a new Emergency Contact Information form that will ask you for some confidential information, including your cell phone number. You don't have to complete the form if you don't want to. But if you do send it back to us please be assured that the information you provide is kept very secure and we will only contact you in case of an emergency.

Second, I want to make sure that you know that BCDC will begin posting audio recordings of our Commission meetings. While this is a new practice, our written minutes contain a very detailed summary of all our meetings, clearly state motions and communications, and they are the official record. So, this should not cause any worry. Also, when we move to 375 Beale Street – and I am knocking on wood as I say this – BCDC Commission meetings likely will be streamed live.

Third, I want to remind you that your California FPPC Form 700 is due in our offices on April 1 – which is a mere 12 days away. Please let Reggie or me know if you have difficulty either finding the form or completing its requirements.

Two more things before we go on. First, we are perilously close to losing a quorum and so we ask that you stay, especially during the public hearing.

Finally, you all know that BCDC has a 50th birthday in September and we are planning a really fun, educational event. We also decided we needed something of a new logo to actually talk about that. For the next year and a half you will see this logo on all of our documents, "BCDC at 50".

That completes my report Mr. Chair.

Acting Chair Chappell moved on to Item 7.

7. **Consideration of Administrative Matters**. Acting Chair Chappell stated that Bob Batha was available to discuss any administrative matters regarding the listing that was distributed on March 13th. He received no comments. He moved on to Item 8.

8. **Vote on Amendment No. Five to BCDC Consistency Determination No. C2003.003 – Department of the Army for Modernizing, Rebuilding and Maintenance Dredging, at Military Ocean Terminal Concord Pier 2**. Acting Chair Chappell announced: Item 8 will be a vote on the proposed Consistency Determination for the Department of the Army's modernization of Pier 2 at the Military Ocean Terminal Concord in Contra Costa County. This is a Commission vote on the Department of the Army's consistency determination for modernization of Pier 2. The Commission held a public hearing on this matter at its February 5th meeting. Rosa Schneider will present the staff recommendation.

Permit Analyst Rosa Schneider presented the following: On March 19th we mailed a staff recommendation on the Department of the Army's Consistency Determination for the modernization and repair of Pier 2 at the Military Ocean Terminal, Concord also known as MOTCO. In your folders is a copy of the amended consistency determination incorporating the language of the staff recommendation with the existing consistency determination for previous work at Pier 2.

The staff recommends conditional concurrence with the Army's consistency determination. Your conditional concurrence would authorize replacement of Pier 2's dual-level configuration with a single-level deck and numerous pier-side and land-side improvements.

Pier 2 is 70 years old and no longer functional. Without this replacement the Army's ability to ship munitions and performance operations in the Pacific theatre would be much less efficient.

The new pile-supported pier will cover 35,785 square feet or 0.082 of an acre less Bay surface area than the existing structure, thereby increasing the quality of the Bay habitat in this area.

Forty-five hundred creosote piles would be removed and replaced with approximately 1,000 concrete piles, occupying less of the Bay floor and improving water quality by removing creosote, which leaches harmful contaminants into Bay waters.

The pier would be slightly relocated to a location with more natural scour, thus decreasing the need for maintenance dredging. There would be a net gain of approximately 0.048 acres of tidal marsh due to the smaller size of the new pier approaches.

Special conditions have been included to ensure that impacts to water quality and fish and wildlife are minimized, that evidence of compliance with the Regional Water Quality Control Board's requirements is provided to the Commission prior to commencing any dredging, and that the project is consistent with your laws and policies on climate change and safety of fills.

The consistency determination is also conditioned to require that the Army develop a plan in conjunction with the Strong Motion Instrumentation Program of the California Geological Survey to record earthquake-induced shaking on Pier 2 and on the nearby shore as a reference.

Staff would like to make two corrections to the staff recommendation. First, the proposed public access for the project would be located at MOTCO's Gate One, not at the National Park Service Visitor Center in Martinez. The Army proposes to replace its current visitor center, which is out of date, with a new energy-efficient building and new landscaped area, subject to availability of appropriated funds.

Secondly, the Stormwater Pollution Prevention Plan described in the Findings Section 3(a)(2) is being prepared for the Regional Water Quality Control Board and not for this Commission. I'd be pleased to answer any questions.

Commissioner McGrath had a question about the two separate reports provided to the Commissioners: There was a different report on the table before us today. It looks like there are no significant changes in the actual recommendation other than the two that you mentioned. Is that correct?

Ms. Schneider replied: That is correct. The report that we placed in your folders just added the underlining and the strike-outs.

Acting Chair Chappell asked for a motion and a second to approve the staff recommendation. He also asked the applicant representative if he had reviewed the staff recommendation and agreed with it.

Lieutenant Colonel Timothy Zetterwall responded: I am the Military Ocean Terminal Concord Commander. Yes, I have reviewed the staff recommendation and do agree with it.

MOTION: Commissioner Vasquez moved approval of the staff recommendation, seconded by Commissioner Pine.

VOTE: The motion carried with a roll call vote of 15-0-0 with Commissioners Addiego, Bates, Scharff, Gibbs, Gioia, Gorin, Pemberton, McGrath, Pine, Randolph, Sears, Vasquez, Wagenknecht, Zwissler and Acting Chair Chappell voting, "YES", no "NO", votes and no abstentions.

9. **Public Hearing on BCDC Permit Application No. 2013.004.00, Hanson Marine Operations, for mining up to 12.03 million cubic yards of sand over ten years from Central San Francisco Bay deep water sand shoals located between the Golden Gate Bridge, Alcatraz and Angel Island, Marin and San Francisco Counties**.

10. **Public Hearing on BCDC Permit Application No. 2013.005.00md, Suisun Associates, for mining up to 2.45 million cubic yards of sand over ten years from Suisun Bay deep water sand shoals located in Suisun Bay south of Chipps Island and Van Sickle Island, Solano County**.

11. **Public Hearing on BCDC Permit Application No. 2013.003.00, Lind Marine Incorporated, for mining up to 1.25 million cubic yards of sand over ten years from the Middle Ground Island deep water sand shoals located adjacent to Middle Ground Island, near the Suisun Channel, Contra Costa County.**

12. **Public Hearing on BCDC Permit Application No. 2013.006.00, Hanson Marine Operations, for mining up to 400,000 cubic yards of sand over ten years from the Middle Ground Island deep water sand shoals located adjacent to Middle Ground Island, near the Suisun Channel, Contra Costa County.**

Acting Chair Chappell announced: Items 9, 10, 11 and 12 are public hearings on the permit applications by Hanson Marine Operations, Lind Marine Incorporated and Suisun Associates for mining sand from Central San Francisco Bay in San Francisco and Marin Counties; Suisun Bay, Solano County; and near Middle Ground Shoal in Suisun Bay, Contra Costa County. These are

public hearings on the applications to mine a total of up to 16.13 million cubic yards (cy) of sand from San Francisco Bay over a period of ten years. To minimize repetition, instead of holding four separate public hearings we will jointly hold the public hearings on the applications. Brenda Goeden of our staff will introduce the projects but Pascale Soumoy and Anniken Lydon also of our staff are nearby and each worked on the application summaries.

Let me also repeat what I said at the beginning of the meeting about speaking on the applications. We certainly want every individual who is here to speak on the subjects to do so. That being said, we want to be as efficient as possible so please check that you have completed our cards correctly. There are five different cards. The white card is for you to fill out if you want to make comments on the sand mining applications overall. There also are four cards of different colors that you may complete if you want to make comments on any individual permit applications. We assume that you will not repeat your comments – if your comments apply to all four applications please only speak once and make sure that the Commission knows that your comments apply to each.

Sediment Program Manager Goeden presented the following: Before I get started, Anniken Lydon is going to do a brief discussion of an errata sheet that we have prepared for you, which I believe is in your packets.

Sediment Program Analyst Lydon addressed the Commission: You have received an errata sheet in your packet for agenda items related to application summaries for Agenda Items 9, 10, 11 and 12. I will highlight a couple of these items for your attention. In terms of the organization, the first section is related to changes to all four applications and then I'll go through a couple of changes to each individual application.

Regarding all four applications, one of the first items is related to the section on sand transport on page 12 of the application summaries. There is a sentence that says:

"The volume of sand that cannot be estimated is not likely to be greater than the total volume estimated from the Delta suspended sediment from local tributaries, and this is estimated to be 375,000 – 400,000 cy, and would likely be within the same order of magnitude on an annual average basis."

This sentence should be changed to say:

"The volume of sand that cannot be estimated for local tributaries is not likely to be greater than the total volume estimated for suspended sediment and bedload from the Delta and would likely be the same order of magnitude on an annual average basis."

Regarding the item below that. In all four applications in the sections related to discussions of Delta smelt descriptions of this species as "endangered" should be changed to say "threatened."

Additionally, applicants have informed staff that in terms of mining operations, barges are not ballasted prior to mining operations, so that will also be changed.

Regarding Hanson Marine Operations' application for Middle Ground Shoal, which is permit number 2013.006.00. One of the first items that has changed is related to the Commission's jurisdiction. On page 1, paragraph 2 of the application summary there is a discussion of the Middle Ground Shoal lease as located in Solano County and this should be corrected to say that the Middle Ground lease is actually located in Contra Costa County.

On the second page of the errata sheet, regarding project volumes for the Hanson Middle Ground permit application, on page 36, paragraph 4, the last sentence. This is related to volume restrictions or seasonal restrictions and also the total volume for the project. On page 36, paragraph 4 there is a discussion of Resource Agencies not limiting mining activity seasonally in Central Bay. This is summary is actually for the Middle Ground lease area and so the sentence should say:

"In their review of the project, the Resource Agencies placed seasonal limitations on mining activities in Suisun Bay."

There are seasonal limitations on the miners working in Suisun Bay. And that includes Lind at Middle Ground, Hanson at Middle Ground and also the Suisun Associates lease.

For the Hanson at Middle Ground application on page 36, paragraph 5, there is a discussion of the overall ten-year volume at the Middle Ground lease as being 2.45 million cubic yards (mcy). That is incorrect and should be changed to 400,000 cy, which would be 40,000 cy annually in mining.

Regarding the Suisun Associates lease at Suisun Channel there is also a jurisdictional correction related to the offloading sites. The sentence should say: "The sand offloading sites are within the Commission's shoreline band jurisdiction and the Commission's secondary management area of the Suisun Marsh, but are not the subject of this application."

Also related to studies in Suisun Bay, there is a paragraph on page 36 of the Suisun Associates application that is also applicable to other Suisun Bay permit applications that discusses a benthic study or agreement between the applicants and some other agencies, including ours, about a benthic habitat study. The benthic habitat study is specifically related to Central Bay and there has been to date no agreement on a benthic study for Suisun Bay.

The last application summary that I am going to speak to is the Lind Marine summary for Middle Ground Shoal.

One of the first things is a jurisdictional correction. On page 5, paragraph 1: The sand offloading site that Lind Marine owns in Collinsville is actually within the Commission's secondary management area of the Suisun Marsh and not within the Commission's shoreline band jurisdiction.

On page 37 of this application summary there is also a section related to Section 5 related to Dredging, Navigational Safety and Oil Spill Prevention. In this section there are multiple references to "Hanson Marine" and they should all be changed to "Lind Marine."

On page 37, paragraph 6, line 4, there is also a volume correction for this particular application. The application summary states that over ten years 12.03 million cy would be mined, however, this should actually say 1.25 million cy over ten years for Lind at Middle Ground.

Lastly, there is a correction in Section 6 related to the public trust. On page 39, paragraph 4, there are multiple references to "Hanson Marine's Central Bay project" and these references should be changed to reflect "Lind's project at Middle Ground."

And with that, these corrections will be made and included into the information for the staff recommendations.

Commissioner Zwissler had a question: Do any of these numbers roll up into any of the summary charts and conclusion-type things or were these just numbers that were mistaken, like typos, within the thing?

Ms. Goeden answered: They were mostly typos and so the summary numbers are correct.

Ms. Goeden made the following presentation:

Sand mining in San Francisco Bay basically takes place in two locations, one in Central Bay and then also in Suisun Bay.

Overall there are four mining applications. Hanson Marine Operations is the primary operator in the overall total volumes of the project, mining approximately 75 percent of the total volume in Central Bay. They also have requested a portion of mining at Middle Ground Shoal in Suisun Bay, which represents about 2 percent. Lind Marine has also requested mining on Middle Ground Shoal, which is approximately 8 percent of the total volume. Suisun Associates, which is a joint venture between Hanson Marine Operations and Lind Marine, have requested mining at Suisun Channel with about 15 percent of the total volume.

There are four Central Bay Lease areas and they are located between Angel Island, Alcatraz and the Golden Gate Bridge and they are highlighted in pink on the map. While you see several shapes, there are four leases and each of the leases have two to three parcels, so there are a couple of parcels per lease area.

In Suisun there are three applications and three operations. Middle Ground Island is a privately-held lease; it is owned by the Grossi family that they have leased out for mineral extraction to multiple miners. In this case they are providing leases for both Hanson and Lind Marine. Then Suisun Associates, which is the joint venture between the two, is the longer lease area off in Suisun Channel, which is located at the confluence of the Sacramento and the San Joaquin rivers.

The total mining that has been proposed is 16.3 million cubic yards over ten years. The acreage is approximately 3,900 acres overall, including all the lease areas in both Central Bay and Suisun.

The total proposed mining is 1.63 mcy a year.

With that the miners have requested that we authorize peak mining years of up to 1.95 mcy in any year. There is not a specific number of peak years and they would happen according to market demand. The peak mining that would happen would have to stay within that overall ten-year volume.

Of the projects, Hanson is the one company that is operating in Central Bay and they have requested approximately 12 mcy over ten years.

Middle Ground lease has also requested by Hanson, in their request they have asked for 400,000 cy over ten years.

Lind Marine, also at Middle Ground, has requested 1.25 mcy over ten years. Suisun Associates, has requested 2.45 mcy over ten years.

Each year would have an annual limit, again with the peak volumes, if the Commission chose to authorize them.

Previously, when we came to talk with you all about sand mining and sediment transport you had posed some questions to us and we promised to come back and talk a little bit more about them as we got to the staff summary.

The first question that folks had asked about was what is BCDC's authority here? There is a two-part answer to that question. We certainly have authority and jurisdiction over all the mining areas that have been proposed with the exception of Suisun Channel, where you see the most eastern bend of the proposed mining. Our jurisdiction ends right about where that lease bends down and to the right. That portion is in the jurisdiction of the Army Corps and the Water Board but it is not in BCDC's jurisdiction.

We also have authority over impacts that happen within BCDC's jurisdiction and those include things like sediment transport, impacts to Bay bathymetry, fish and wildlife impacts, water quality, et cetera, all the things that are covered by the Commission's laws and policies.

We also have authority over impacts that happen outside of BCDC's jurisdiction because we interpret the McAteer-Petris Act allow us to consider environmental impacts to the entire Bay Area under Section 66605.(d). And that would include the same impacts that we would see in the Bay but also impacts to beaches on the coast and coastal erosion.

Another question that has been asked is how do we apply CEQA when we are looking at sand mining projects?

The State Lands Commission was the lead agency on the CEQA review and they completed the review as required; and certified a final EIR in 2012.

BCDC has the authority and responsibility not only to review the CEQA document, comment on the CEQA document, but then to do additional analysis as needed or required. So we can go beyond what the CEQA document has examined.

When we do a review of a project we not only use the McAteer-Petris Act, the Bay Plan, the Suisan Marsh Act, the Suisun Marsh Protection Plan and Solano County's Suisun Marsh policies when we are looking at projects in the Suisun Marsh area, but we also include additional scientific information, input from the public, additional information provided by the applicants. We also had a science panel, which we have mentioned before, to help us think about these issues.

Another question that has been asked is how do greenhouse gases fit in? BCDC doesn't have any policies on greenhouse gases or emissions. Our policies are specific to San Francisco Bay. Air quality is the purview of the Air District. However, we do have the ability to consider impacts to the entire Bay Area. So when we are thinking about greenhouse gases we need to think about how much sand should be mined from the Bay in comparison to how much sand should be taken from land-based quarries or imported from other areas, such as British Columbia.

The CEQA document analysis for air quality maximized the volume of sand that would be imported from either land-based quarries or British Columbia and did the analysis for greenhouse gases there, in comparison to lesser volumes mined in one location or another. So when the Commission is looking at greenhouse gases they need to consider the tradeoff between mining impacts to San Francisco Bay, the water quality, the animals that live there and air quality emissions and congestion along the roadways.

Another question, which unfortunately I cannot really answer 100 percent for you all today, even though we have tried, is how much sand is there? It's the million-dollar question or the million grains of sand question. Everybody would like to know how much sand is there. And if we take one million, two million, or twenty million cubic yards out of the Bay, what is that in comparison?

What I can tell you is we know that sand is a limited resource. It is not something like trees that we can continually plant and grow. It comes from the Sierras and works its way out to the coast.

There are basically two types of sand that we consider when looking at mining in the Bay that I have tried to explain in the staff summaries. One is what we would call stationary sand, bedded sand, or relic sand. Sand that is literally sitting in the Bay and has been there for a long period of time and is not moving; it is just there. If you could stand on it, it would be what is underneath your feet.

And then there is sand that is in transport or sand that is moving. And it is moving from the Sierras in the water, with the water down to the Bay, out to the coast.

And so we looked at the question, can we figure out how much bedded sand there is, how much sand in transport there is?

When we looked at bedded sand we could not come up with a number. We have looked at seismic reflection surveys in Central Bay and we can tell where bedrock is across one transect. The sand or sediment on top can be between 30 feet or 300 feet deep but we do not have a good way of estimating that.

Similarly, in Suisun Bay another seismic survey looked and could not find bedrock three miles down but we do not know exactly what is on top. We know there is sediment on top but we do not know the quality or the type of sediments sitting on top, although likely a good portion of it is sand.

As far as sediment in transport, we looked at the most recent research that was done on suspended sediments coming out of the Delta and we are able to separate out fine grains from coarse grains and come up with a number that we have included in the staff summary and what we think is about 300,000 to 400,000 cy on average is coming out of the Delta.

We also looked at the tributaries. There is not as much information on the tributaries. Unfortunately, there are more tributaries than the two rivers that come out of the Delta but the data is not as good. So what we have found is the best estimate we could come up with is maybe around 300,000 cy also but that is really super rough and very, very much a less-than back-of-the-envelope calculation.

But we also know with work on flood control that flood control managers are removing coarse-grain sediment as they are dredging out the channels to keep them open for flood control, so it is likely that less of that sand will be making it into the Bay. And lastly, we know from the EIR and also from work by Patrick Barnard, that at least for Central Bay, between 5 and 15 percent of the sand that is mined is being replenished.

So moving away from the sediment numbers, Commissioners have asked us what has been authorized, what has been mined? If you were here before when Rosa was talking about sediment transport you'll have seen these slides before. This one is Central Bay. What is shown in green is what the Commission has authorized from the 1970s forward to 2013, we have not included 2014 yet, and then the orange is what was mined over that period of time. And you can see that, in the early to mid-2000s, we had pretty significant mining going on.

Similarly, in Suisun Bay we also had quite a bit of sand that was authorized from the 1970s but not as much was mined. This is a combination of Middle Ground and Suisun lease areas. This one is also a combination of a number of different miners.

Moving on to what is before us today and in the next couple of weeks. We have shown again the historic mining in orange. The volume of sand that has been historically mined, and this is Central Bay, and what is proposed from the applicants at this point. So again, this is 1.2 mcy per year shown in the bars on the black from 2015 through 2024. The gray box at the top represents the peak volume of 1.45, which could happen in any year. I could not really represent it well because it would not happen every year. Certainly in years that they did peak there would be other years that are lower, but we tried to visualize for you what a peak mining level would look like in comparison to the historic mining.

Similarly, this is Hanson at Middle Ground. I will also note here that Hanson has historically had 500,000 cy authorized for mining at Middle Ground and for their own reasons have not chosen to mine that. You will also note that from 2001, 2002 forward up until today there has been no mining going on by Hanson at Middle Ground. That is why there is that blank there. It is not actually a reporting error, there just has not been mining activity.

Lind at Middle Ground historically has done quite a bit of mining. It is their main mining site. What they are proposing now is actually is about 100,000 cy less than what they have previously mined at Middle Ground. And what they have done in their proposal, is shifted that 100,000 cy from Middle Ground to Suisun Associates lease. I will talk a little bit more about that in a minute.

Here is Suisun Associates, this is the joint venture between Hanson and Lind. Historically, from my understanding, they have split the volume 50/50. They are currently requesting 300,000 cy. I am not sure if they would continue to split it 50/50, but remember here that Lind is moving 100,000 cy from Middle Ground to Suisun Associates. And then there is an additional 100,000 cy increase beyond that volume.

Next we will turn to the questions that you as Commissioners need to answer and they are based on the San Francisco Bay Plan.

The first one is: Are the proposed projects designed to minimize harmful effects to the sediment system?

The second one is: Would the projects conserve habitat and wildlife and would they minimize harmful effects to them?

Are there feasible alternatives to mining sand from the Bay?

Are additional studies needed to better understand the project and its impacts?

Are the proposed projects designed to minimize impacts to water quality?

Do the proposed projects adequately mitigate for adverse impacts?

Are the proposed projects consistent with the Commission's policies regarding dredging, navigation safety and oil spill prevention as well as the Public Trust needs?

So to talk a little bit about the first question, impacts to sediment resources or to sand resources: You have seen this graphic before. This is out of Patrick Barnard's work in the special issue of *Marine Geology*. But through mineralogy and biogenic surveys they actually took samples of sand from Point Reyes all the way down to Pacifica, in through the mouth of the Bay, all the way up to the Sacramento and San Joaquin Rivers. They looked at the mineral composition, pollen, glass shards, volcanic shards, anything they could to establish what the sediment source was for the sand. They were looking specifically at sand.

What they came up with was this sediment transport pathway. What you can see is primarily the sand is coming from the Sierras, traveling through Suisun Bay, through the Carquinez Straits, through the deep water channel of San Pablo Bay, straight through the middle of Central Bay and then to the outer coast. There are some smaller arrows there as well that represent other pathways that are definitely happening, but the stronger pathway through the mineralogy and the provenance work is the heavier line. The dotted lines represent less certainty in the studies. They looked at seven different methods to try to identify this so they feel pretty confident that this is the case.

So, as sand is transiting along and moving through the system, a question the Commission needs to think about is, is the sand that is being removed from the system through mining causing impacts to the Bay system?

Another part of looking at the sand resource and the impacts to the sand resource itself, is as the sand travels along is it making it to Bay beaches? We do not have really good information about whether or not the sand is truly making it to the Bay beaches. For example, Point Pinole is one that is right along the pathway of the sand transport. We also need to consider, are there impacts to the Bay bedform? Because not only are we looking at Bay bathymetry but Bay bedforms, that actually constitute part of the habitat that the animals live in and within.

Looking a little bit more at Central Bay. We are fortunate again to have a fair amount of work that was done in this area. Both Coast & Harbor Engineering through the EIR that State Lands did and Patrick Barnard's work separately, we have change analyses to consider. So the map on the left is looking at the difference in depths or bathymetry of San Francisco's Central Bay bottom between 1997 and 2014. The areas that are shown in red are areas that are over 2 meters deeper than they were in that period. The areas that are blue have been accreting. You can see the lease areas. And if you were also able to see the areas that were mined, that the heavily mined areas are actually in that area right off of Point Knox Shoal and then again on the Presidio.

Similarly, folks have been concerned and we have heard concern expressed about the Bay sediment transport and the Bay bathymetry but also the outer coast. There is concern that sand that would be transiting through Central San Francisco Bay would not make it to San Francisco Bar, feed the Bar and transit potentially along the Bar to the coastline there, particularly Ocean Beach.

This particular piece is incredibly complicated. There are things like tidal prisms that have been changed since the 1850s, there is development along the shorelines, there is a deep water ship channel that is dredged to the middle of the Bar; and all of those things contribute to whether or not that Bar is healthy, and sand is moving in the right direction. It is actually shrinking. Scientists have shown that it has been shrinking, it is closer to the shore; it is lower than it has been. But concern has been expressed over if additional mining continues to happen at high levels that it may further impact the San Francisco Bar and Ocean Beach.

One of the things that has been shown about the Bar is as it gets closer to the mouth of the Bay, the transport zone changes to Ocean Beach. So what folks know now is that northern Ocean Beach is getting more sand and southern Ocean Beach is getting less sand and they believe that is partially because of the change in the shape of the Bar.

Middle Ground. So we do not have very much information about Middle Ground at all. What you see on the right side of the slide is a multi-beam survey that was done at Middle Ground, sometime between January and April. It was the first time a multi-beam survey has been done here. So multi-beam surveys provide you far more information than single-beam surveys, lots and lots more data.

What I wanted to point out about this slide is the mining that takes place, due to both equipment limitations and limitations put on by the Resource Agencies, really only happens in that dark blue area on the bottom of the lease. The red area, because it is too shallow and because there is spawning grounds and sensitive habitat there, it is off-limits for mining. But one of the things I also wanted to show you, just because it is so fascinating, is the picture in the upper left, which is the green picture. That is actually Middle Ground shoal when you look further out. There is an enormous sand bar right off of that island that we did not even know existed. This is from some aerial surveys that were done and provided on the Internet. So when we are looking just at the lease areas we miss really interesting land forms like that.

From the survey, though, you can see in the blue area we are seeing quite a bit of deepening right in the area where the mining has occurred. And the EIR says that the sand for this lease area they believe is primarily coming from the source right there; that it is surrounding sources and within that lease area. And this is the one they say is the most erosional.

Suisun Channel, this longer lease area. It has not had as much mining on it most recently and it does seem to be our most stable lease area. It is right at the confluence of the Sacramento and San Joaquin Rivers so it is getting the first push of sand as it comes out of the Delta.

You can see very little red in this survey. This is a change analysis between 2008 and 2014. But what you mostly see is yellow to light green, which is more stable. Again, the EIR said that this area is primarily getting sand from the surrounding areas.

Moving on to the biological resources of the Bay. Again this is one of the areas where it is really hard to fully understand the impacts. The mining happens in areas that are extremely deep. In some cases it is very turbid. It is expensive to study there. There are a lot of fast-moving currents, particularly in Central Bay, so there is just not a lot of information available.

So the information we drew from to write the staff summary was the EIR. It had a fish entrainment study that was done but I believe it was all theoretical, done by Applied Marine Sciences. There was a benthic survey that was done for Central Bay, which was pretty limited in scope but it was what was available. We also reviewed some papers from USGS. Not a lot available. We also tried to get in touch with the Cal Academy of Sciences, not a lot available. But there was also a good report that just came out from the Nature Conservancy and NOAA on juvenile fish and invertebrates that use sandy shoals and estuaries. So that is where we drew our information from.

The areas of impact that we have potentially identified are impacts in open water. There are fish and critters that live in the water above the sand, generally called pelagic fish. They can be entrained from intake of water into the drag head; they could also be entrained from a vent pipe. But the really great thing the miners did in the last couple of years was put a fish screen on the intake pipe, which really cut down on entrainment of juvenile and adult fish but cannot, unfortunately, take care of the plankton and the eggs that would be in the water column.

Also another area of impact is the bottom itself or the benthic community. There are animals that live both on top of the sand and within the sand. The biologically active area is approximately 5 to 12 centimeters [correction: inches], generally, deep. When you are removing that layer you are taking not only a food source but the critters that live there and they have to regenerate.

Water quality is another area of potential impact; the turbidity of the materials going overboard.

Also there were limited impacts to listed species, which have been mitigated for.

The mitigation and minimization measures that have already been incorporated include: miners have reduced their volume. Originally they came in and asked for 2.04 mcy overall for every year and they have reduced it down to 1.6 mcy. They have put fish screens on their water intake pipes.

They have lowered the position of their drag head in the water column to help eliminate some of that entrainment as they are sucking water up and priming their pumps. They have purchased mitigation credits for longfin smelt, Delta smelt and salmonids.

They have agreed to do a combination of providing $100,000 worth of work and funding to help remove marine debris in the form of derelict pier pilings, abandoned vessels, et cetera, through CalRecycle. Buffer zones around shallow water habitats have been established.

In Suisun they needed to do a little bit more, primarily because of the Delta smelt that are in that area, so they have also been limited more in depths during different seasons and also volumes during the spawning season. And they have also been asked to keep mining more distant from the shoreline during certain periods of time.

So far we have been talking about studies because we do not know as much as we would like to know, either about the habitat and the ecology of the area where the mining is taking place but also about the impacts of the mining itself.

So far the miners have agreed to do a benthic study in Central San Francisco Bay and we have been talking about doing that same study in Suisun Bay because we believe Suisun Bay is also important. They have agreed with the Water Board to do a water quality effluent study.

We are considering some additional studies but have not reached agreement yet. Potential potential studies are the benthic study in Suisun Bay, trying to help better understand the sand transport between the Central Bay and the outer coast to help alleviate concerns about Ocean Beach erosion, sand transport from tributaries to the shoals is virtually unknown, and there is also some potential that they could do some coring to help us understand the depth and volumes of the sand beds.

And then regards to the last three policies, this is kind of a catchall slide. The dredging policies have pretty much been discussed with the Fish, Other Aquatic Organisms and Wildlife in Subtidal Area 2 policy. But the one piece that needs to be a little considered more is the minimization of volumes. Basically Dredging Policy 2 says to dredge only the minimum that is necessary for the project. So that is an interesting question for the Commission.

Also our oil spill and navigation safety policies direct us to make sure that they are prepared for and have a plan in the event of an oil spill and minimize hazardous materials.

And then the Public Trust Policy. We along with the State Lands Commission must consider both the public trust needs and the public trust uses and make sure the project is consistent with those.

Finally, the policies. So you all get to decide these seven questions, which are:

Whether the proposed projects are designed to minimize harmful effects to the sediment system?

Whether the projects would conserve habitat and wildlife and minimize harmful effects.

Whether there are feasible alternatives to mining sand from the Bay?

What additional studies are needed?

Whether the proposed project has been designed to minimize impacts to water quality?

Whether the proposed projects unavoidable adverse impacts have been adequately mitigated?

And whether the proposed project is consistent with the Commission's policies regarding dredging, navigation and oil spill prevention, and the Public Trust?

So we have had a number of public comments and we put them together in the packet for you today because they have been coming in over time; literally since last July. But the general areas of concern that we have heard are loss of jobs, concerns over greenhouse gases, increased mining during a period of sediment decline in the Bay, eroding beaches and shorelines and eroding San Francisco Bar and effects to the outer coast, specifically Ocean Beach.

So that is my presentation. I believe what we do next is have our applicants come up and tell you more about their project and then we will have the public hearing.

Mr. Roth addressed the Commission: My name is Mike Roth. I am Vice President of Region West for Lehigh Hanson. We are one of the two sand miners. The other one you will be hearing from shortly, is Bill Butler with Lind Marine, and you will also be hearing from Christian Marsh, which is our outside counsel that has been helping us on this project.

I think we have all seen that sand mining has been going on in the Bay for over 70 years now. Hanson entered the sand mining business in 1999 by acquiring two privately owned sand mining companies. The reason we did that is important. We were very close to losing one of the largest aggregate sources in the Bay Area, which was out in Pleasanton at the time, it has since closed, because we were depleting our reserves and we knew we needed to try to find a home for those missing reserves. That deposit used to produce 3 mcy per year for 40 years but we finally exhausted those reserves. And you are going to see that is a trend that is continuing in the Bay.

We are looking for renewing our three, ten-year permits, one in the Central Bay, one in Suisun Bay, one in Middle Ground Shoal, you have seen that. The existing ten-year permit that we have been running on was for 1,940,000 cy, that was for Hanson. Our new, proposed ten-year permit is for 1,365,000 cy, which is a 30 percent reduction in sand mining.

We get the question a lot, you know. What is the sand used for? Is all sand the same? And again, it is something that we do not generally look at in our normal lives unless you are in the business. But sand is involved in everything we do, whether it is your home, the bridge you drove across, the streets you drive on, the schools your kids go to, the churches you go to, sand is involved in every construction project there is, and road, no matter where you are coast to coast. So sand is a critical, critical component of the society that we live in. And the interesting thing is, there is no substitute for sand. It is not like if sand disappears we go, we'll just keep doing what we're doing. No you won't, because you need sand to do everything that we're talking about there.

Some of the uses of sand: concrete, asphalt, base fill material, beach and wetland restoration. Many of you are aware that Crown Beach over in Alameda was recently rebuilt, if you will. The sand had washed away over the prior 25 years. We mined 83,000 cy of sand, brought it to Crown Beach and discharged it on the beach and rebuilt that entire beach. As East Bay Regional Park said to us, this would never have happened if it wasn't for the fact that it was Bay sand, so there's no invasive species. You delivered it to us by water, you eliminated 4600 truck trips through the streets of Alameda, and it was all done because of the ability to take Bay sand and put it back where it once was.

The other thing is, when I say sand isn't all the same. The construction industry that we are in today has huge demands. And again, from a layman's perspective, you're like, well concrete must be real easy to make, sand must be real easy to make. It isn't at all the same. And I wouldn't say that we are making rockets or silicon chips, but at the end of the day both of these materials are very, very complex once you get involved in them.

Why is the Bay sand so good? Its particle shape is very good for high quality concrete uses. Its water demand is exceptional. Its gradation is very important to us. We have a real homogeneous gradation that makes it very good sand. And again, it is just very, very durable sand that is good for the construction industry.

Let's take a look at sand demand. The Department of Conservation has a very old group within it that is called the California Survey. And what they did is they analyzed, because they keep track of all this, from 1981 through 2010, that's 30 years, California, this is the whole state now, consumed 140 million cubic yards of construction grade aggregate, what we're talking about with the sand in the Bay. The average person, that means during that period of time, consumed 4.4 cubic yards per person.

ABAG, now we're talking about the nine-county Bay Area. ABAG projects the population base to grow from 7.2 million in 2011 to 9.3 million, a 30 percent or 2.1 million person increase in the nine-county Bay Area.

So why is that important? Well, if you look at that 4.4 cubic yards per person over the prior 30 years and you multiply that by the 2.1 million people that our region is going to grow by, you need 9.2 million more tons of material, construction grade material, than we are consuming today. Rule of thumb: About 50 percent, 45 to 50 percent is sand, the remaining 50 or 55 percent is aggregate. That's how we build.

Another thing is housing is supposed to grow as population grows in that nine-county area. ABAG has it at 660,000 units over the next 30 years. That's 22,000 homes will be built in this region over that period of time.

Interestingly enough, if you look at when we were in the great depression or recession, however you want to look at it, that we just went through, housing in the nine-county Bay Area bottomed out below 5,000 starts in 2010 and now we are going to average 22,000 units for the next 30 years. The interesting thing is residential construction, the homes we live in, are the most sand-intensive structures. And what I mean by that, is if there is one construction dollar to build a home and one construction dollar to build a hospital, the sand intensity is much greater in that one dollar in residential construction than it is in a hospital. Because obviously you are putting stucco down, you are building sidewalks. The house has a lot of sand in it, is what we are saying. The roads to build it. You can look at a hospital and you're going, it's mostly equipment, right? So sand intensity for that residential component is huge versus most construction.

Let's take a look at supply now, we have looked at demand. Supply. Again the Department of Conservation. They look at the nine-county Bay Area in two regions, the north region and the south region. What they are telling us is that we have 11 to 20 years left of permitted reserves in the entire nine-county Bay Area. If you take that literally, they are telling you, no matter what happens, within 20 years we are out of construction-grade sand and gravel.

Reinforcing that, is you can take a look at the next bullet down. Since 2001 there have been six high quality construction aggregate quarries closed, representing 7 mcy.

Three additional aggregate quarries are going to close in the next five to ten years, representing 1.5 mcy.

There is another source and people have talked about it and that's the Canadian aggregate that's come down. The only reason Canadian aggregate is here, because we don't really want it here, but the fact is we are running out of reserves, so Canada found an opportunity to come into our marketplace and they are bringing down a very high quality material. It is used specifically in high-strength, high-performance concrete. That is the only application it goes into because it is very expensive.

And I would like to point out that they are permitted at 4.5 mcy annually; it's a huge quarry. They are already at 3.5 mcy, they have got a million cy to go. Use rule of thumb, 50/50, 50 percent sand, 50 percent rock, that's how they make us take it because they have to stay in balance. That means there's another half a million cubic yards of sand left and their permit is capped out. So

they truly aren't the answer. And then you have to look at the carbon footprint. You're bringing that sand down 1,050 miles from the quarry down to San Francisco Bay where it's brought in. That's a big carbon footprint that we can do without.

In the recent past, we have gone through a great recession. I think everyone in this room, your counties, your cities, you have all experienced it; we as people have experienced it. And at the end of the day construction felt it just as bad as everyone else. Housing construction is slowly recovering.

We have been operating, both sand miners now, since 2010, on our old permit reserves. We started this process in 2006. Our EIR took six years and now we have been working with BCDC for an additional three years. We are out of permit reserves. We are barely hanging on right now, both sand miners, because again, we are living off our permits from 2010 and holdover sand. Is that fair to say that you look at our numbers and you see how depressed they have been for the last four or five years? That's because we have no sand to sell. All we are doing is we are going to our good, loyal customers and we are allocating sand to them saying, this is all we have, this is all you get, because we are slowly but surely running out of reserves.

And lastly, at the current rates, sand mining hasn't been economically feasible for any of us. We have been hanging on, both sand miners, for the last four or five years and during some very, very difficult financial times because of these limited reserves and how long this permit is taking.

Let's transition to air quality.

Bay sand is a local resource. It is not coming down from a thousand miles away. It is not being driven in from Pleasanton. From the quarries out in Pleasanton and Sunol today to San Francisco where the sand is consumed is 82 miles round trip.

The Bay sand depots that we have, one is at Pier 92, where the City placed both ready-mix companies in San Francisco. The other one that we have is in the Oakland estuary, right in the center of the markets. To take a look, you can say that one barge of sand, that barge brings in enough sand to eliminate 134 truck trips from Pleasanton every day. That's 11,000 miles and 134 trucks that aren't on the road.

Let's take a look at a bigger number. What does that mean for every 100,000 cy of sand. You have seen the numbers thrown out there. We have dropped our numbers by 30 percent or close to 300,000 cy. 100,000 cubic yards, that's 5,600 fewer truck trips if we bring it from Pleasanton/Sunol, which is the closest source of high quality concrete sand. It's 460,000 fewer miles, 92,000 gallons of fuel that we are not burning and 920 tons of CO2 that isn't emitted into the air. And Lord knows, if anyone is driving in on 580 or coming up 680, you don't need 5,600 truck trips on the road because traffic is bad enough today.

I'm wrapping up here. We had a study done by Environ. Basically what Environ said is, if we take sand away from the Bay sand mining process and we replace 35 percent of it with Canadian sand and 65 percent from Pleasanton, what does that do to emissions? All air emissions will

increase, period, period, period, they are all going to increase. SOx is going to increase 4,400 percent, NOx is going to increase 510 percent and CO2, greenhouse gas, AB 32, what we all hear about, is going to increase 240 percent.

In conclusion, sand is a key ingredient of building material that is essential to the needs of the Bay Area.

Sand supply is decreasing, demand is increasing.

Air emissions, truck trips and traffic congestion are dramatically reduced by using the Bay sand.

Bottom line, we are asking the Commission to approve the renewal of Bay sand permits for another ten years with average and peak volume limits that are proposed in the application. Thank you. Next up is my colleague, Bill Butler, from Lind Marine.

Mr. Butler spoke before the Commission: Good afternoon, Mr. Chair and Members of the Commission. I am Bill Butler, Vice President of Regulatory Affairs with Lind Marine, the other sand operator in this process. Before I talk about Lind Marine's business specifically, I just want to take a minute to describe how a sand harvest event takes place. So to do this, maybe to pep everybody up a little bit, we are going to watch a movie.

Both Lind and Hanson use barges equipped with pumping equipment to harvest sand. A tugboat positions the barge within a lease area. The dredge pipe is lowered to the substrate surface and the pump is started. As harvesting continues the suction drag head is lowered into the sand and kept beneath the surface of the sand. The water to create the sand slurry is drawn through the sand itself or through the vent pipe in the top there, which as Brenda mentioned earlier, is now equipped with a fish screen to prevent fish entrainment.

The sand slurry is pumped to the barge where it flows down a chute equipped with screened gates. The sand-size material and water flows through these gates and the oversize material flows down the chute and is discharged through a pipe that passes through the bottom of the barge. As the sand slurry fills the hopper the water is displaced by the sand and water and a small amount of fine material is discharged back into the Bay.

Harvest depths range from 60 to 90 feet or so for Hanson in the Central Bay and are much shallower, 20 to 45 feet deep, for Lind Marine in Suisun Bay. Once the barges are loaded they then transit to the sand offload and distribution terminals where the sand is stockpiled and then loaded into trucks or consumed right onsite by our customers.

Lind Marine, which was formerly Jerico Products, is a small, family and employee-owned company with a long history in the Bay. Our heritage companies have been operating in the Bay for nearly 100 years. Lind began mining sand back in the '70s at Middle Ground Island shoal and in Suisun Channel and we have been operating there since.

Lind Marine only operates in Suisun Bay, so we only harvest sand from the Middle Ground Shoal and the Suisun Associates lease; we do not operate in Central Bay.

Our sand is utilized; we take it to Petaluma, to Napa and in Collinsville, where it is used locally in the northern Marin, southern Sonoma County and Solano County markets.

We have all seen a lot of numbers already about volume so I won't spend a lot of time with that. But I would just say that Lind Marine's annual permit volumes represent only about 15 percent of the total overall volumes in the sand mining project. But to Lind they are a much larger, critical part of our business. This is our only source of aggregate materials, and without these materials the livelihood of our company is really at risk.

Just talking about the volumes. We saw the graphs about the past volumes in the past few years. Mike Roth talked about that a little bit. I just want to add one point. If you take a little longer look back in the economic cycle before the recession that we are just coming out of, the volumes that we are talking about for Lind Marine, those were the volumes that we were attaining during the other part of that economic cycle.

Lind Marine sand is not only used in construction materials, including hot mix asphalt and ready-mix concrete but it is also used extensively for environmental remediation projects. Projects like the Chevron Castro Cove, Hunter's Point, Alameda Naval Air Station, those are examples. In those projects the sand was delivered directly by barge and never touched a road.

The key point I want to make is that it is a local resource used for the local economy. It is efficiently harvested and transported to sites right near where it is used. As an example, in Napa, our sand is delivered to our customer, Syar Industries, where it is used right on-site in the manufacture of asphalt and ready-mix concrete.

Mike Roth already elaborated on the air emissions the Bay sand operations provided. So I just wanted to say is another key, specifically in the Suisun Bay leases, much of the sand mining occurs directly in the ship channel or adjacent to it, so there is a benefit of reducing maintenance dredging that is needed in that area.

We'll talk a little bit about feasibility. Feasibility is a component in several of your policies. Simply stated, it is not feasible to completely replace Bay sand with alternative sources. You have heard that domestic land-based sources are limited and depleting. Not all of those sources just provide sand and some don't provide sand at all. Ones that do provide sand typically provide rock as well and require purchase of rock to go along with the sand to maintain balance in their operation.

With regard to import of sand from British Columbia. As Mike pointed out, it is really important to note that it is a different grade of sand than we are talking about here. It is high-grade sand used specifically for high-strength concrete. The situation for Suisun sands in particular, is it is not suitable. The British Columbian sand is not suitable for hot mix asphalt or other construction needs that the Suisun Bay sands meet currently. And with both of those alternatives, obviously the air, traffic and cost impacts are greater. For Lind Marine in particular, alternative sources are not feasible.

As I mentioned, the Bay sands are Lind's only sources of aggregate material. We don't own or operate any other aggregate sources and we don't import sand into the Bay area.

I would like to introduce Christian Marsh who will finish up for us and talk about the process and some of the environmental aspects.

Mr. Marsh spoke before the Commission: Thank you, Chair and Commissioners. Christian Marsh: I am permitting counsel for Lind and Hanson and have helped them through this process. I am going to switch gears a little bit and go back in time to talk about the environmental review that has taken place and try to tie that in with some of the Bay Plan policies.

The environmental review process was started back in 2007. We had a six-year environmental review process with the State Lands Commission. It is important to note that the state is very particular about not letting applicants participate and review administrative drafts or have any interface with consultants that they utilize and so it really was an independent process. That process ended in 2012 with certification of an EIR.

All of the environmental issues that are implicated in the Bay Plan policies were part of that environmental impact report and review conducted by the State Lands Commission. There are two impact areas that I want to focus on here, there are a number of issues that have come up under the Bay Plan policies.

First, with benthic habitats. As Ms. Goeden mentioned earlier, there's a lot of uncertainty about the potential impacts to benthic habitat. However, the State EIR and Applied Marine Sciences (AMS) did evaluate these issues and AMS ultimately concluded that they "could detect no effect of sand mining in the Central Bay leases." Suisun has other issues that we are already overtaken by invasive species. But the thought is that the reason for that is because of the natural instability of the sediments and the dynamic nature of that area.

With regards to sediment the State EIR and its expert consultant, Coast & Harbor Engineering, evaluated at full volumes, 2 mcy per year, what the impact of this project would be on the sediment transport system and specifically sediment supplies outside of the lease areas. And concluded that "it is not expected to result in the substantial alteration of sediment transport patterns or the morphology of the seabed outside of the vicinity of the lease areas" and in particular would not result in a substantial decrease in sediment supplies to the offshore Bar and Ocean Beach.

We have had a very significant and intense regulatory process with many of your sister agencies. They have also issued many of their approvals. The only one left at this point is the Army Corps of Engineers.

The California Department of Fish and Wildlife evaluated the project for Delta and longfin smelt; ultimately concluded that the incidental take permit they issued minimizes and fully mitigates the impacts of this project on those fish species. US Fish and Wildlife Service and NMFS have now both issued their biological opinions and approved full volumes, the 2 million cubic yards,

and found that with minimization and compensatory mitigation there will be no jeopardy to federally-listed species - these are sturgeon, salmon and also Delta smelt – and no adverse modification of critical habitat.

And then lastly, in January, and I'll get to this a little bit more in a few moments. We were before the Regional Water Quality Control Board, which authorized Waste Discharge Requirements and Water Quality Certifications. There the Regional Board found, with reduced volumes, the 1.6 million which we'll talk about in a moment, the project would comply with all water quality standards and protect beneficial uses. Many of these species and habitat and water quality issues are the same issues that you are grappling with in terms of the Bay Plan.

The BCDC process has probably been the most intensive permitting process that I have been in, in the recent past. We had in the last two years over 15 meetings with staff. We provided numerous technical materials, many at staff's request.

The staff held a January 2014 Science Panel on the two issues that I mentioned earlier, benthic habitat and sediment transport. The panel essentially confirmed what Ms. Goeden was saying earlier about the uncertainties. It is important to note that that panel did not result in any conclusions or findings that were not congruent with the Environmental Impact Report.

Now this Commission has met three times for staff briefings and then this hearing today and we'll have another meeting next month. So a very intensive process.

One of the questions that Ms. Goeden raised and is actually a question that this Commission raised at the last briefing was the amount of sediment coming into the system.

We applaud the staff's efforts at trying to develop an estimate of what that number would be. I think we would all acknowledge that it is very difficult to do without additional data, including on bedload. The estimates that have been provided are uncertain. We believe that additional science is necessary in order to come up with a more accurate estimate.

But the important point I would like to make is, one of the conclusions of the CHE report, at least for Central Bay, was that most of the material that was coming out was material that was already in place and it is not material that is coming in through the sediment transport system. Consequently, understanding what that number is of how much sediment is coming into the Bay may not be critical to policy decisions related to the Central Bay leases. And there are other issues with the Middle Ground and Suisun leases, which we can talk about.

All of that being said, we have proposed and we will also talk about this in a moment, is a technical advisory committee on sediment transport issues that would look at what are the key questions and what are the key priorities for data gaps and how do we fill those and analyze the overall role of sand mining in the sediment transport system. So this may be one of the issues that that technical advisory committee tries to tackle.

The other question that came up was how much sand is within the Bay. I would agree that there are some ways to potentially estimate some minimums but it is very hard to do. It is a pretty vast resource. I would note that ADEC in 2000 when they were evaluating whether the San

Francisco Airport would have enough sand did an evaluation of Central Bay, at least two of the leases, and found that there was at least 60 mcy there. We don't know the quality of the sand and whether it's all the right sand but that was just for two lease areas and they only went to a certain depth. So let's just say that the resource could be significantly higher than that.

Bay Plan consistency. I am really going to focus just on the two subtidal policies because those have tended to be, I think, the more challenging.

Subtidal Policy 1 states that the projects in subtidal areas should be designed to minimize and, if feasible, avoid harm. Subtidal Policy 2 similarly says that projects in sandy deep water should only be allowed "if: (a) there is no feasible alternative; and (b) the project provides substantial public benefits." I would note that BCDC staff had previously interpreted "harm" to mean substantial harm and not just any change in the Bay.

Specifically, if you go to these issue areas and you look at the Environmental Impact Report, I think you will find that there was a lot of congruence that the EIR found. And the regulatory agencies, particularly the Regional Board with regard to water quality and the federal and state wildlife agencies regarding fish, that there would be no substantial harm to those resources.

Specifically, with regard to feasibility, the EIR did evaluate reduced project alternatives, and specifically an alternative that would take us back to the baseline volumes that were mined between 2002 to 2007. Which was the baseline that the EIR used and found that with each increment of reduced sand mining, climate change and other emissions would increase substantially. That for environmental and policy reasons we don't want that, and so we are making an expressed finding that that's infeasible. They also found that it would be infeasible on economic grounds.

On Alternatives, we have talked about what are the alternatives for Bay sands in terms of substituting those sands for regional uses. I'm a lawyer and, of course, need to look at the scope of review, and so for me it's important to understand that when you're looking at alternatives it is not just can this region survive with a different resource, it is: are the applicants before you able to essentially shift resources and feasibly do what they want to do, do what they are asking to do in a reasonable and feasible manner.

As my colleagues have already mentioned, there really are no feasible alternatives. We can't expect Lind to enter entirely new markets like for surface sands or for BC sands.

There are technical differences between the types of sand. And then again, for environmental policy reasons we believe it is infeasible.

The other thing I wanted to mention is we talked about the acreage of these lease areas being about 3,000 acres. But that is not where mining takes place. Mining is both limited to those lease areas but also only occurs within subareas of each of those leases. The estimates based on actual, real time data and tracking is that a mining event or mining events in a year disturb about 2.2 percent of available sandy habitat. And that is an even lesser portion of the entire Bay. And then

lastly, due to limited storage at offloading facilities, sand is mined only in response to immediate demand. That way it is essentially self-minimizing, which some of the slides that Ms. Goeden had up about being permitted amounts and not all of those being fully utilized, that's because we are minimizing through operation of the market.

In addition, there are a number of avoidance and minimization measures. I am not going to go through these because Ms. Goeden did before on some of these. These are all in addition to the provisions or the conditions in the Mitigation and Monitoring Reporting Plan that was adopted by the State Lands Commission. At least many of them are in addition.

On volumes. In the last permit cycle the volumes were authorized at 2.2 million. In 2013, when Lind and Hanson applied, they only applied for 2,040,000 cy. As I mentioned, in January the Regional Water Quality Control Board has limited those volumes further to the 1.613 mcy. That is an average over ten years. The 1.95 million cubic yard peak, which is really critical if the applicants are able to attempt to make use of increased market or fluctuations in the market.

I would also note that the Regional Board did something else, and that is they targeted additional reductions in volumes in southern Central Bay leases. This was in response to the recommendation from Patrick Barnard to try to avoid two specific lease areas because those are most associated with the transport pathway seaward for sediment. The Regional Board was being responsive to that recommendation and so that is now included as a condition. So much minimization has already been included at this point.

We talked about additional studies earlier. We have proposed a further technical advisory committee to focus on sediment transport. We think that that would help gather the key data and information that would be important, both to verify that the approvals that we are asking for next week are true to their word, that there would not be substantial harm, but also to help inform future policy decisions.

Then, compensatory mitigation, which we have talked about. I would just add that all together the monitoring, mitigation and further studies we are estimating to cost at least $2 million so it is not a small amount. Lastly, substantial public benefit is another key element in Subtidal Policy 2. There has been lots of discussion about that. I will just say both the Legislature and the State Lands Commission has recognized a number of substantial public benefits of sand mining, my colleagues have discussed many of those benefits and these are just some of the samples here.

To bring it home, here are some of the public projects that have actually relied on some Bay sands. There are numerous public benefits, all of which we have tried to spell out. In conclusion I would note we submitted a very lengthy set of materials yesterday, apologies for the extra paper. We do hope that you will get a chance to read some of those analyses and papers before the vote next month. In particular we did a technical feasibility analysis at the request of staff that goes into a lot of the implementation of Bay Plan policies.

Also we have here today Scott Fenical who is with Coast & Harbor Engineering. He actually conducted the to answer any questions on the technical issues related to sediment.

Thank you and we appreciate your time.

Acting Chair Chappell continued the meeting: Thank you, Mr. Marsh and Mr. Butler and Mr. Roth. We will now open the public hearing. Before we invite speakers from the public to come up, are there questions or comments from Commissioners?

Commissioner Gibbs was recognized: Brenda, could you go back to your very first slide about our jurisdiction. I have two questions. One is about jurisdiction and then there's another.

At some point as you were going through this slide you said that we were allowed to consider impacts outside of the 100 foot zone throughout the nine-county Bay Area Region.

Ms. Goeden replied: I didn't use those words but I know what you are getting at. If you look at the last bullet on this slide, it's impacts outside of BCDC's jurisdiction. Basically, in 2003 or 2004, the McAteer-Petris Act was amended to include Section 66605(d), which references the ability for the Commission to look at environmental impacts to the Bay Area. It doesn't say "entire." It says, the Bay Area. We interpret that as our ability to look at impacts to the Bay Area including the outer coast because it is part of the Bay Area.

Commissioner Gibbs pressed for additional clarity: In deciding what we are going to do about any particular permit application? Ms. Goeden replied: Yes, I believe that is the case. That is my understanding. Commissioner Gibbs continued: I'm looking at our counsel and the Executive Director because that seems to be a new and expanded formulation from what we have been dealing with for some time; certainly during the formulation of the Climate Change Policy. It seems expanded to me. Chief Deputy Director Goldbeck added: That is what was amended into the Commission's law, that you can look at environmental impacts in the Bay Area. Now whether you choose to and how you choose to implement that, you need to consider. In terms of the Climate Change Policies, the Commission adopted policies that said it specifically wouldn't look outside of its jurisdiction in implementing those policies.

That is correct. That is something that you considered in terms of looking at the impacts of rising sea levels on the shoreline and said, you are going to explicitly put your policies to apply to the Bay and the shoreline band for climate change impacts. Commissioner Gibbs repeated his understanding of the situation: It just seems to me that this is a new kind of formulation and it's important. Counsel?

Deputy Attorney General Tiedemann further clarified: Our office has not been asked for an opinion on this. We can provide one for the next meeting and certainly before the Commissioners make their decision. Commissioner Gibbs added: Well I guess we should ask then.

The second question I had was, a lot of the discussion seems to be about the potential harmful effects of sand mining on Ocean Beach and erosion on Ocean Beach. Could you explain the connection between mining at further points up in the Bay and sand erosion on Ocean Beach? Ms. Goeden replied: The concern has been voiced from numerous folks that in mining sand from Central Bay, the sand is in transport from the Sierras through the Bay to the outer coast. The idea is that if you are deepening the Central Bay area sand is coming in and filling in those areas as we have seen with the bathymetric surveys, rather than transiting to the coast. That the areas that have been mined are getting deeper and wider but it's hard to measure exactly. We also have

heard from the EIR and other studies that between five and fifteen percent of what is being mined is being replenished. The idea is that if you're taking out here it is not continuing to transport out to the coast. If it is in transport moving to the outer coast, it would potentially go to the San Francisco Bar, move along the Bar and then to the beach. It is more of an indirect pathway.

Scott Fenical from Coast Harbor Engineering has done a modeling study that has looked at that. He has estimated 0.2 to 0.3 percent of what would be in transit would be affecting the Bar. Unfortunately, modeling, in particular sediment transport is an extremely difficult thing to do. One of the things that we are thinking about, and potentially going to suggest to the Commission for consideration, is to do tracer studies of sand that would help validate that model in the actual sediment transport to sea to see if what the model seems to be saying is correct.

Commissioner McGrath had questions for Ms. Goeden: Please find the slide on the proposed rate of mining and the historic rate of mining. I got very confused on this at the Regional Board as to what was involved. There is conflicting testimony from the Baykeeper and the like. It is clear with a surface look at this (slide) that you would get a different average mining rate depending on when you sampled. It looks to me like the peak volume that is proposed is roughly the average of the period from 1996 to 2008, approximately. Ms. Goeden answered: I think the peak volume is looking at the highest level of mining that had occurred and trying to match that.

Commissioner McGrath clarified his position: I misspoke. I meant the average that is sought to be permitted is roughly the average from 1990 to 2008. Ms. Goeden replied: I think that is about right because if you looked at the baseline from the CEQA document which was 2003 to 2007 it is lower; it is 1.4 million cubic yards.

Commissioner McGrath continued: And that would be less than the amount that they were historically permitted for but it is also not clear. When this comes back I would like to make sure that I can work my way through the averages and the numbers and the impact of the Regional Board's limitations on this, so it is really crystal clear what happened historically and what this corresponds to.

Ms. Goeden added: We've tried different ways to represent this and it is difficult to really do a great job. For your reference, the history of the mining permits and the longest period that we have authorized mining has been five years, sometimes it has been 30 months, and it has varied. In the older days it was 30 months and then it went to a year and then up to five years. There have been time extensions that have been just a year and this is representative of the last several years. We certainly have numbers that have been reported so we can give you an Excel spreadsheet if that is what you want. I don't think the whole Commission wants that. We can break it up into five-year periods or ten year periods and put a bar behind it that shows what was authorized for that period. If you have some idea of how you would like to see it, I would be happy to try to work that out.

Commissioner McGrath replied: We received a letter from the Baykeeper from last December arguing for a lower period of averaging. They have tried to present the best case that they could as has the applicant. What I'm looking for is some comparison between what you think

is a reasonable long term average to compare the proposed numbers to and how that compares to what they were permitted to do. Ms. Goeden replied: I have actually done those numbers for a 15-year average. I can provide that.

Commissioner Zwissler was recognized: I have a question about questions. I have a process question. Executive Director Goldzband then offered some guidance: My suggestion is, have questions from the Commission now to actually explain something that was unclear to you that Brenda said or that the representatives said. If you don't have any of those specifically, I would suggest, Mr. Chair, that we actually move to the public comments.

Commissioner Zwissler had a question: This question is for the applicant. I got confused when you were speaking about how sand was running out. The reason that there has been a decrease taking of sand is because it is a depleting resource and it is running out. And yet, we are hearing that we don't know exactly how much there is but there is plenty. I could not quite tie together your comment about that it was running out but that there is plenty.

Mr. Roth replied: The Department of Conservation who studies all mineral resources in California has said that when they look at the nine-county Bay Area; they are saying, when we look at the construction-grade aggregates within this area, there is anywhere from 11 to 20 years of permitted resource remaining. Commissioner Zwissler pressed for more clarification: So that is not specific to the sand in the Bay? That is everything? Mr. Roth answered: That is correct. Mr. Bill Butler spoke: Commissioner Zwissler, I just wanted to clarify that a little bit. The Department of Conservation looks at permitted reserves. The difference was that it is the permitted land-based reserves that are running out. That was the difference between Bay sand and the permitted land-based reserves. It is the permitted land-based reserves that are depleting.

Commissioner Addiego had a question for the applicant: Someone had a slide that showed that the California aggregate that was used over the last 30 years, I think it was 1981 to 2010, was 140 million cy with half of that being sand? Mr. Roth replied: Yes that is correct. They look at it in tons and it was 180 million tons over that 30-year period that we averaged and I converted that to cubic yards.

Commissioner Addiego continued: And so half of that was sand, the 70 million cubic yards? Mr. Roth replied: A good rule of thumb is sand is usually somewhere 45 to 50 percent of the construction aggregate, yes. Commissioner Addiego added: So that would work out to two and a third million cubic yards a year? Mr. Roth responded: That is per year. That is 140 million cubic yards per year that the whole state consumes.

Commissioner Addiego continued: So our portion from the Bay, the 1.9 million cubic yards in the peak years just satisfies the Bay use.

Mr. Roth agreed: That is correct. All the sand stays within the nine-county Bay Area. Commissioner Pemberton had a question: I'm not sure of the process but I have a number of questions. Executive Director Goldzband offered guidance: It is our preference to go to the public unless there are questions that specifically clarify what has been said by our staff and by the

applicants. That is because, in general, we would want the Commissioners to ask questions about everything that they have heard including those comments by the public on what they have heard as well.

Commissioner Randolph was recognized: I think it was the last speaker who made a statement that I didn't quite follow. It was said that the flow of sediment into the Bay, being transported in, isn't actually material, that this is about the sediment that is already in place? Maybe I was not understanding that. Could there be a clarification of whether movement of new sand into the Bay is material or not.

Mr. Christian Marsh responded: What I was referencing was, in the Coast and Harbor Engineering report they concluded that most of the sand that was being taken out in Central Bay is sand that is already in place, meaning it is sand that has been there for some time as opposed to sand that is immediately being transported through the system. That is the difference. The conclusion is, if what we are taking is relic or sand that is existing in place, it is not sand that is part of that active transport system then you are not disrupting the amount of sand that is going out to the offshore bar or Ocean Beach. That is exactly the premise.

Commissioner Randolph added: It just seemed to be inconsistent with what Brenda was saying a moment ago about sand being taken out and deepening, then other sand filling in. Mr. Marsh replied: I think that we would all acknowledge that some of the sand is depositing in the Bay. The rates that have been estimated are somewhere between five to fifteen percent of what is taken out is then replenished, meaning it is travelling through and traps that sediment. If that number is small then it means the number that is coming into the Bay isn't as critical.

Acting Chair Chappell continued: If there are no more questions we will go to the public. We have three minutes for each speaker and we encourage you strongly to not repeat yourselves.

Mr. John Coleman with the Bay Planning Coalition spoke:

I want to reiterate that sand is a vital resource. It is important to all aspects of the Bay Area's maritime economy. It is a local resource. It is harvested, transported on water. It's local jobs and reduces truck traffic and associated air quality emissions, providing these local jobs.

The amount of sand that is used, I am not going to go through it. We have seen all the different projects that have benefitted from it. But the bottom line is the environmental benefits I am going to talk about in terms of the GHG emissions. During the six-year EIR process conducted by the State Lands Commission, the EIR certified in October 2012, the key conclusion of the EIR was that the majority of impacts related to the project were less-than significant and all of those were fully mitigated to less-than significant.

We are talking about being able to reduce carbon dioxide, if we are to move away from the current process and transport it in, we would be increasing our carbon dioxide by 240 percent. Each barge load of sand is equivalent to approximately 134 truckloads of material and each 100,000 cubic yards of Bay sand means there's going to be 5,600 less truck trips on the road, which is equivalent to 460,000 miles or 75,000 gallons of diesel fuel or 832 tons of CO2.

If you are looking at it from a job perspective, it is also an environmental perspective. The EIR concluded that it is mitigable and the project and its impacts are insignificant. What is significant is the fact that they can be mitigated. The bottom line is the project cannot be overstated. Sand is a local resource, provides local jobs and serves the Bay Area economy.

When we talk about the graph up there where it goes up and down, clearly the last several years during our recession/depression the need for sand was taken out and that's why the numbers are so far down compared to the previous years. You heard from the applicants that they only take it when it's needed, and that is one of the most environmental ways you can look at a resource. You are taking it when you need it versus taking it over a long period of time and having to store it someplace else. It is an environmental benefit to the Bay; it is also a job producer for the Bay. Thank you very much. This is for all four projects and the Bay Planning Coalition is in support of all four.

Former Assembly Member Nancy Skinner: I think we all face difficulties when we make these kinds of decisions in terms of the particular purview of our jurisdiction. And I just want to start out, my introduction to this issue of sand mining first came up when I was on the Park Board and we were dealing with Crown Beach. I was glad that the District had access to local sand from the Bay so that we knew that we were not causing the truck emissions and such.

But I have to say that I kind of doubted the efficacy over time of adding sand to Crown Beach because of the pattern of erosion and sea level rise and such might at some point make it where you have to question whether it is worth it. But interestingly enough, in our last addition of sand we have now got a situation at Crown Beach where a threatened species, the snowy plover, is now overwintering. So we find these interesting environmental benefits where we do not always expect them.

We use this sand locally, which has obviously been pointed out again and again. When I was in the Assembly I was Chair of the Natural Resources Committee and we started to look at the state agency that looks at mining resources who brought it to our attention that all of these aggregate materials in California were starting to be depleted and our existing rules and permitting process were probably not going to allow for new facilities to be opened.

We are in this situation where we have adopted SB 375, the Sustainable Communities and Climate Protection Act, where we have asked all of our local governments and the state to increase infill development, which basically means increasing construction. So what are we going to be in the situation of? Pushing the environmental burden of the materials we use onto other places? Here we who have the best environmental regulations of anywhere, for sure, probably in the world, but definitely in the country.

So I started looking at and was almost going to do some legislation around trying to protect local sources of aggregate materials. We think about the locavore food movement and we say, we should be growing food locally, we should be doing this and that locally to reduce greenhouse gas emissions, to reduce air pollution emissions, to reduce all of it. I think we need to look similarly at our aggregate materials.

Obviously, you have the ability to require some of the studies to answer some of the questions that have been raised that do not seem yet to be answered. But that does not necessarily mean that you either have to limit the time period of the permit, or within reason, the quantities, because you have the right within the permit to revisit it at any point, it is conditional. If new environmental information comes forward, either from your own studies or others, you can review and change that. So that is what I wanted to share, thanks.

Mr. Forester was recognized: My name is Eli Forester; I am here with the Silicon Valley Leadership Group. We are a public policy trade association representing 400 of Silicon Valley's leading employers. Silicon Valley Leadership Group would like to express support for the Lehigh Hanson/Lind Marine, Incorporated sand harvesting application currently under review by the Commission. As you know, Hanson/Lind Marine sand is used for construction activities throughout the greater San Francisco Bay Area and as a local resource helps lower public and private construction costs.

Alternatives will significantly impact greenhouse gas emissions in the region and it is critical to the Bay Area economy and the environment that BCDC continue to allow this local sand harvesting at the historic levels requested in the permit application. The San Francisco Bay and Delta sand mining project is projected to reduce 4.7 million miles of traffic on Bay Area roads every year resulting in greenhouse gas emissions 45 times lower than those associated with the evaluated "no project" alternative. In summary, we respectfully request BCDC approve the Lehigh Hanson/Lind Marine Sand, Incorporated harvesting permit at the historic levels previously approved by the Commission. Thank you for your time.

Mr. Lewis addressed the Commission: I am David Lewis, the Executive Director of Save the Bay. We are very supportive of continued sand mining in the Bay but not at the levels requested by the applicant and that is based on the information that you have before you. I want to highlight some of that information just so that it stands out from the large volume. I thought Brenda did a good job of highlighting some of the most important factors.

The first question she posed is whether the project is designed to minimize harmful effects on the Bay under BCDC's policies? And I think the answer that you have heard is clearly "No" because sand is a limited resource. There has been no dispute, in fact, one of the applicants has just acknowledged, that sand is only being replenished after being mined at 5 to 15 percent. That is not disputed. This is a shrinking resource.

The mining has also been less than authorized. And while, as Commissioner McGrath has pointed out, that average depends on which set of years you look at, the EIR is based on a set of years that was significantly above the average over the longer period of time, so that is not a good set of years to peg the future average to. It is also clear that the science is inadequate to give you confidence that continuing sand mining at current high levels, historically high levels, will not have detrimental effects on the Bay.

The beach replenishment issue that is highlighted in the Coastal Commission's letter, which I highly commend to you, is even more critical because of sea level rise. Sea levels are going to be rising. We are going to need more sand and materials, certainly no less, to be able to have the beaches keep track. And that is a factor for all of us in the Bay Area, not just those of you from Marin and San Francisco and San Mateo counties that house the beaches.

So I want to highlight for you in the Coastal Commission's letter on page 6. They really make a very strong case for the minimal replenishment arguing for a new authorized level that is significantly lower than what is currently permitted and what the sand miners are asking for, closer to the range that has been mined over the last several years, about 335 cubic yards per year. So, Save the Bay would recommend that you encourage the staff to draft a permit that is aligned with what the Coastal Commission, your sister agency, is asking for. This is an appropriate, precautionary approach given the scientific uncertainty and also given the scientific certainty that this is a deplenished resource.

I would actually take the comments of Former Assemblywoman Skinner and reach a different conclusion from them. Of course we want to have local sources. But, if we mine this sand that is a limited resource in the Bay at a faster clip, we are going to use it up faster, we are not going to have that local resource and that is going to have a deleterious effect on our economy as well. Thanks very much.

Mr. Dunham spoke: Daley Dunham, Special Projects and Legislative Affairs Manager for the Port of San Francisco. I am speaking on behalf of the Port but also on behalf of the City and County of San Francisco. I am here to express our support for the applications as they are before you for Lind and Hanson Marine. The vast majority of the sand that is harvested from the Bay is deposited on the tidelands within the jurisdiction of the State Lands Commission for the benefit of all Californians. In particular just nearby, the Brandon Street Wharf, one of the City's great new open spaces, was literally built with sand from the Bay to construct the new public open space on the Bay for new views and enjoyment of the Bay.

It doesn't stop there. All of the critical infrastructure along the waterfront uses sand from the Bay, most notably the great seawall on which we all sit at this very moment. And as the time comes to repurpose the seawall to address sea level rise it would be preferable to do it in a way that does not unnecessarily add a glut of new gases to the Bay air shed that are the very reason for sea level rise to begin with. Again, we support the measures as they are before you. Thank you very much.

Mr. Flanders was recognized: My name is Jason Flanders; I am here on behalf of San Francisco Baykeeper. First, I would like to highly compliment the fine work of the staff on the staff report. I think all of the information is presented very objectively and very thorough.

Baykeeper opposes the continuation of what has been 70 years of unsustainable mining in the Bay. You have heard that the Environmental Impact Report and the applicants do not deny the plan to completely exhaust sand as a resource. Instead there is an attack on the science and a focus in on uncertainty.

I thought an analogy to climate science might be helpful. Yes, the system is large and complex and you can't look at one project and say, this additional greenhouse gas contribution is going to raise degrees Fahrenheit this much. But there is an emerging scientific consensus of anthropogenic impact. And any uncertainty, I would argue, should be resolved in favor of common sense that the complete exhaustion of this resource is going to adversely impact beaches and sandy habitat.

Comments on a couple of Bay Plan policies. Subtidal Policies 1 and 2 require that sediment movement impacts be minimized and scarce resources be conserved. Those are independent requirements from where each of those policies later go on to describe as adopting feasible alternatives if complete avoidance is possible. No one here today is talking about an alternative for complete avoidance. Instead I urge you to focus on the minimization and conservation requirements that can be achieved by simply lowering the extraction rate to some sustainable level as has been occurring for years.

With regard to climate impacts. BCDC's Bay Plan emphasizes protection of coastal resources. That is an immediate impact of the project. The importation of British Columbia sand is, I would argue, speculative. You have also heard the applicant say that it is sand of a different quality, not directly interchangeable, used for different projects. So why is it going to be one or the other?

With regard to air quality impacts, this parade of horribles that all these future projects are going to be somehow permitted to violate all of our air quality laws. We would hope that our sister agencies do not permit.

With regard to the Public Trust doctrine the staff report, regrettably, says "mineral extraction from Trust properties is an accepted Trust use." Numerous authorities have directly contradicted that. Namely the late Professor Joe Sax has stated that in Boone v. Kingsbury "The Supreme Court of California recognized that mineral exploitation was not itself a Public Trust use." Similarly the Supreme Court of Alaska has stated "We reject the contention that mining is a Public Trust purpose." As such, this project cannot interfere with trust resources.

BCDC Does not have to limit its approval to what was approved by the State Lands Commission. CEQA requires that BCDC still exercise its jurisdiction. I would also quickly comment on this notion that somehow the Legislature has said BCDC has jurisdiction over projects in the Bay, the Coastal Commission doesn't, and yet BCDC can't look at coastal impacts. I don't think the Legislature could have intended such a result, thank you.

Mr. Espinoza took the floor: My name is Ben Espinoza. I represent the Napa and Solano Building and Construction Trades Council on behalf of the 14 unions and over 10,000 members that we represent. I am here today to express our strong support for these four projects. This sand is a critical component for our local economy. It is used in thousands of construction activity projects throughout the greater San Francisco Bay Area. The list of new or restorative projects that rely on this sand, whether private development, public works or even environmental restoration, is numerous.

To mention just a few benefits, locally harvested sand reduces project costs. It keeps our environment cleaner as it minimizes the need to ship or truck sand from faraway places. These operations sustain a middle class workforce that makes the Bay Area an affordable area for our members to live and raise a family. The sand is a critical and very much needed public benefit. The demand for this sand and the construction projects that are created with the sand will not change. But changing the source of the sand will have a negative impact on jobs, the environment and the local economy.

An Environmental Impact Report has been completed and certified by the California Lands Commission on a 3-0 vote. The EIR demonstrated that a majority of the potential environmental impacts were less than significant and for those that were significant, they will be fully mitigated.

I can tell you that I started in the construction trades in 1971. Ironically, I represent 14 trades. I come from the cement masons trade and I can tell you, you can't have concrete without sand, that you can finish a project. So I fully support the applicant and I want to thank you for your time.

Mr. Wren commented: My name is Ian Wren; I am Staff Scientist with San Francisco Baykeeper. I am here to plead with you to review some of the independent scientific recommendations as well as those of the Coastal Commission, which call for a drastic reduction in mining intensity to more closely approximate the annual load of sand from the surrounding watersheds.

Although the Regional Board recently did reduce mining volumes compared with the EIR, the authorized volumes are roughly equivalent to the baseline extraction rates over a period of peak mining intensity, as correctly identified by Commissioner McGrath. This time also coincides with a period when USGS found the highest rates of erosion within the Bay and along the coast.

Now Mr. Marsh suggested that it doesn't matter how much sand is entering the system because his clients are mining a relic, non-sustainable resource. However, surveys conducted in 2014 show that erosion of the Bay floor was actually reversed slightly between 2008 and 2014, coinciding with a period of more sustainable rates of mining, suggesting net addition of sand over this period. Using these surveys in addition to loading studies conducted by SFEI and USGS over the last several decades, sustainable extraction rates can and should be calculated.

To get a sense of what is being requested. The Transamerica building, for example, is about 320,000 cubic yards. So each year roughly four Transamerica buildings worth of sand would be removed from the vicinity of Angel Island and adjacent to SF. Over the ten-year length of this period about 37 Transamerica buildings worth of sand would be removed and about 50 Transamericas would be removed from all lease areas over ten years, which are roughly located along the conveyor belt leading to the coast. That's a lot of sand that could be replenished along the San Francisco Bar and Ocean Beach.

I also get the sense the Commission would like to see sustainable sand extraction in the Bay and is concerned about tradeoffs regarding greenhouse gas emissions associated with sand imports. The applicants recently provided emission estimates which were not part of the EIR and therefore not subject to review. And I would suggest close scrutiny of these estimates, which are the basis of some of the comments made today.

Some questionable commnents were made, such as the failure to recognize that large imports of sand are going to continue from British Columbia on an ongoing basis as explicitly stated today by the mining companies. They also failed to conduct calculations based on a range of potential extraction rates and how the region may use sand and concrete resources more effectively through green infrastructure, recycling and other regional land sources not mentioned earlier.

But what has been most disturbing about the permit process is the applicants' claim, a commitment to a science-driven approach, but they have consistently tried to obfuscate the science and have cherry-picked statements made by scientists to introduce uncertainty and advance their conclusions. What they failed to address are the reams of peer-reviewed literature that challenge their conclusions and specifically call out the need to better manage sand resources in the Bay to avoid further erosion and mitigate sea level rise.

Mr. Cluver voiced support for the permits: My name is Andreas Cluver, I am Secretary-Treasurer with the Alameda County Building and Construction Trades Council. On behalf of the 28 crafts represented under our council and the 40,000 men and women living and working in Alameda County we strongly urge you to support the applications, the four applications that we are discussing today for the sand harvesting.

In addition to the Alameda County Building Trades Council I also speak on behalf of Mike Theriault with the San Francisco Building Trades Council, with James Ruigomez with San Mateo and Jose Garcia with Santa Clara who couldn't be here. Along with Ben Espinoza with Napa/Solano who you heard before and Bob Lilley from Contra Costa County, that represents the entirety of all the Building Trades Councils in the Bay Area in strong support of the sand harvesting applications.

I am not going to repeat what my colleague Ben Espinoza said, I just want to add to that and I want to focus on the issue of jobs. That in addition to the dozens of good, middle class union jobs represented by the Operating Engineers Local 3 that are currently conducting the work, the indirect jobs that will be lost as a result of the failure of these applications is significant. As many of you know, we are coming out of a massive recession that hit construction particularly hard. Many of our members are just going back to work. But with imported sand construction costs are going to increase and it is going to increase the construction costs of many of these projects and that is going to be a negative push towards continuing the boom that we have got going and putting a lot of these men and women back to work.

So we strongly urge you to support the applications on behalf of all the building trades in the Bay Area. Thank you very much.

Mr. McLaughlin addressed protection of waves, waters and beaches: My name is Bill McLaughlin; I am with the Surf rider Foundation, San Francisco Chapter. Our mission is to protect the world's waves, waters and beaches. Our organization includes more than 2,000 members here in San Francisco and the greater Bay Area. Most of us surf and recreate at Ocean Beach so sand is a critical resource for Ocean Beach. It helps shape the fine surf that we enjoy and provides a beautiful shoreline environment.

According to the USGS, at the south end of Ocean Beach we have a serious and significant erosion problem. It has been occurring for several decades now and no end is in sight. Most of the shoreline is now underwater except during the lowest of tides. According to the USGS, a significant reason for this erosion tread is because we have a decreasing amount of sand coming out of the Golden Gate.

I won't go into the science so much about how this works because we heard it all today but the gist of it is that with sand mining activities we have a very unknown scientific scenario with exactly how much sand mining is going to impact the size of the San Francisco Bar and the amount of volume of sand coming out of the Golden Gate. We believe that those quantities need to be really correctly identified before any type of sand mining of this caliber is permitted.

We also would like to underscore that we agree with the Coastal Commission in their letter to the BCDC regarding these issues. That sand mining in the Bay should be done at a sustainable level and we not take out more sand than is coming into the Bay and again, that more studies should be allowed. We particularly share the Coastal Commission's concern that any new sand mining not lead to further erosion out at Ocean Beach. Thank you very much.

Mr. Lilley read a letter into the record: My name is Bob Lilley; I represent the IBEW and the Contra Costa Building and Construction Trades Council as well as the East Bay Leadership Group. A lot of these points have been mentioned but I was sent here by our CEO Greg Feere who asked me to read the letter that was sent on December 17, 2014. This letter is over his signature. It reads:

"Dear Chair Wasserman and Commissioners:"

"On behalf of the Contra Costa Building and Construction trades Council and the thirty unions that we represent with over 30,000 Building Trades men and women, I write to express our strong support for the Lehigh Hanson sand harvesting application currently under review by the Commission."

"This sand is a critical component of our local economy. It is used in thousands of construction activities/projects throughout the greater San Francisco Bay Area. The list of new or restorative projects that rely on this sand, whether it is private development, public works or even environmental restoration, is numerous."

"To mention just a few benefits, locally harvested sand reduces projects costs. It keeps our environment cleaner as it minimizes the need to ship or truck sand from faraway places. These operations sustain a middle class workforce that makes the Bay Area an affordable area for our

members to live and raise a family. This sand is very critical and is a much needed public benefit. The demand for this sand and the construction products that are created with this sand will not change. But changing the source of this sand will have a negative impact on jobs, the environment and the local economy."

"An Environmental Impact Report has been completed and certified by the California Lands Commission on a 3-0 vote. The EIR demonstrated that a majority of the potential environmental impacts were less than significant and those that were significant will be fully mitigated. We respectfully urge that you approve the application from Lehigh Hanson for continued sand harvesting in the Bay."

"Sincerely, Greg Feere, Contra Costa Building and Construction Trades Council."

As I mentioned, I am also a board member of the East Bay Leadership Council. This is a private sector regional business group, represents over 300 employers. As a labor representative I am also joining with the employers of the East Bay in favor. They cite three basic reasons: This is a significant benefit to the regional economy. It is, as mentioned before, a crucial ingredient to construction; that has been pretty well documented. And also we made our decision based on the environmental benefit. Thank you very much. I appreciate you letting me come and speak and I look forward to your vote. Thank you.

Mr. Feinstein addressed the Commission: I am Arthur Feinstein with the Sierra Club and also representing Citizens Committee to Complete the Refuge. This has been a long process. I was taking part in it, I guess it was seven years ago, when the leases were expiring. BCDC, this agency, brought together a bunch of different stakeholders, the mining industry and environmentalists, I was with Audubon at the time, to look at what did this mean in terms of renewing the leases, knowing there was going to be an EIR. At that time the extracting companies came in and said, there is no impact. We will be taking out millions of cubic yards but there is no impact. You know, just logically, intuitively, any way you look at it, it really strains credibility to think that you can take that much out of a resource and say, there is no impact, not to worry.

And then seven years go by and they are saying the same thing but now we have evidence to the contrary, that is not just intuitive because the USGS has done a lot of work here. It hasn't gotten a lot of play in this discussion. But they have done recent work which clearly shows the sand bar issue, the Ocean Beach issue.

The San Francisco Estuary Institute and, Dr. Peter Bay, a well-known bay ecologist, have also documented the fact that San Francisco Bay used to have many sandy beaches, of which there are very few now. Why do we have so few beaches? Because there is so little sand. Why is there so little sand? There has been a history for 70 years of extreme extraction of sand from the Bay. It doesn't take a lot of work to figure out that when you do something there is an impact. And to say that there isn't is really not credible.

Nobody is saying that you should not take any sand but we do believe that you need to start taking a lot less.

We are finding out with climate change and everything else we are doing to the world that what we do to our resources actually affects us. It is not just the little critters, you know you might feel sad for them but, eh. But it is actually affecting us now and our grandchildren and their grandchildren. I speak as a grandparent now and I worry very much about what the world is going to be like for my 12-year old granddaughter. Yet we continue to have these things come forward that are destructive and we don't try and make solutions out of it. So I urge you to look at what Baykeeper is recommending. Let's keep getting sand but let's reduce the levels. Let's allow the Bay to recharge itself the way it once did.

Assemblywoman Skinner talked about Crown Beach and the fact there's snowy plovers there. Well that's very nice but those snowy plovers used to be all around the Bay because we had sandy beaches; we don't have them now. So I urge you again to put some restraint on the extraction industry. Thank you.

Acting Chair Chappell asked: Is there anyone here representing the San Mateo County Building Trades Council? He received no response and moved on to the next public commenter.

Ms. Morgan addressed the Commission: I'm Sierra, I'm a student at San Francisco State and an intern at Ocean Research Foundation. I just thought it was really interesting that I seem to be the youngest person in the room so I am glad I am here to speak out for my future and my peers' future and my future kids and everything.

Permitting these companies to increase their sand mining is really concerning to me because it has already has had impacts, how the erosion rates have increased 50 percent between Ocean Beach and Point San Pedro since the 1980s.

And it is just making me really concerned about how everything is about the demands now; we need to supply this demand. But there are a lot of things that we can't supply that are in demand because it is not sustainable. So I believe that if you increase your sand mining you definitely have to do a lot more tests that will see how it will affect my generation and the future for everybody else. Thank you.

Acting Chair Chappell asked if anyone representing the East Bay Leadership Council was present. He received no response and moved on to public speaker Mr. Rowen.

Mr. Rowen addressed sand mining in general: My name is James Rowen; I am here to talk about the issue of sand mining in general, all four applications. I first would like to thank the staff very much for helping me with the process when I came in. I really appreciate it. And I really want to thank all of you because you are the Bay Area Conservation and Development Commission. I hope I got those names correct, this is the first time I've been here. That is what we are talking about today, we are talking about conservation and development of the Bay. The most environmentally sophisticated region, I think, in the United States.

Today I am asking you to support the application of two companies, Lehigh Hanson and Lind mining who are part of that system. John F. Kennedy once said, "we all breathe the same air; we all use the same land." Just as much as the people that want you to restrict the operations of these companies, these companies as well use the Bay and so do the construction workers. So in a sense I

am asking you to approve their application because they are a local company providing local jobs, sensitive to the needs of the local environment. These are not people from British Columbia or from some other place in California or from Southern California or from Florida or Texas or et cetera. No, these are people that are businesses within the Bay that employ people of the Bay. The construction workers that you have heard about, they want an environment too. They want an environment that is as much sensitive to the resources as everyone else. And I believe these two companies, they are not the great sand pirates of a book about Jack London that seek to grab it all. No, if you look at their application, they are as respectful of the environmental consequences as everyone else.

I would much rather you regulate two local companies than worry about whether someone from British Columbia, who you have no jurisdiction from whatsoever, increasing greenhouse gases to bring in the sand that we need to continue the construction of environmentally friendly houses in the Bay Area. I have been looking at these issues ever since I was a kid on oceanographic vessels looking at salinity and temperature readings in the South Bay. We didn't have this Commission; as good as it is now, looking at that. Now we do and now we have companies that want to work with you. So I think you ought to take advantage of the situation by allowing these two companies to pursue their applications, to pursue their work, hiring construction workers that are just as much a part of the Bay Area as everyone else. So I would support their applications because you have the advantage. You are the Bay Area Conservation and Development Commission working with Bay Area companies to manage responsibly the Bay. Thank you.

Ms. Lucas spoke: Libby Lucas, private citizen.

I would like to refer also to what Arthur Feinstein mentioned about the bathymetric studies that USGS has done on the floor of the Bay. I think it is much more dramatic than maybe you have been led to believe. If you look at the 1990 bathymetric studies there was an increase of six feet of sediment within the Golden Gate, just a buffer area that's rather large. The 2006 bathymetric studies say that there has been a loss of 90 million cubic meters of sediment within that area. And they say this happened since 1956. It happened since 1990, so it is much more dramatic, the loss that has taken place at the Golden Gate.

I think you have to also consider the aspect of this is all tidal action. You have got Bay rise of just a couple of inches that you will increase the volume of the water that is surging through that area twice a day. I know the piers of the Golden Gate go down quite a way, hundreds of feet, but you don't want to have a gorge develop right there, it is a very sensitive location. So I think that is a very critical, dramatic spot that needs a lot more evaluation when you consider what is happening within the rest of the Bay.

As far as the BCDC jurisdiction as to how far up into the Delta you go. You have got to consider how much sand is coming down and in drought years your pulse flows are just non-existent. So if you look at the 1990 Army Corps/USGS study of the sediment budget for the Bay you see that 1990 was a very low flow year. So I think that sediment load of 5.93 at Chipps Island,

which is sort of a good spot to check on this loading aspect, shows you how low that is. And so what you are being asked for from your building demands is a third of that sediment load. If we have seven more years of drought those loads will be just about the equivalent of what is coming down the system.

I think that you also have to think of the fact that nature abhors a vacuum. The equilibrium of the estuary is what is going to be the catalyst. No matter what people would like to have it produce, it can do just so much. Once some Commissioners were taken down Adobe Creek in Los Altos Hills with the soil conservation man, Cal Hampe, to analyze what happens with a stream when it hits a little restriction. The sediment drops out and then you have hungry water, which then erodes the riverbanks right below that. So if you take out too much sediment and sand you will be eroding your levees in the Delta as well as the problems down here at the Golden Gate. So it is a very complicated issue but please don't kill the cow. Thank you.

Ms. Judy Irving was called to speak and was not present. Acting Chair Chappell moved on to the next speaker.

Mr. Cobruno commented: I'm Michael Cobruno. Commissioners, staff, thank you for letting me be here today. I was going to read in a letter from the City of San Francisco that came in today in support of all four mining applications but I know that the Port of San Francisco already mentioned it. I do want to point out a couple of things that they do mention in their letter, though, that I think are critical that haven't been mentioned. One is, how critical this local sand mining is for the reduction of both public and private construction costs. And I can speak as a former Planning Commissioner in Oakland for seven years, of: (a) how important it is to keep those costs down, but (b) also how we do, we talk about being environmental.

And one of the things we always talked about at the Planning Commission that I am very proud of is that we wanted LEED standards, we wanted the most environmentally friendly projects that there were. And I think that the largest project that we had while I was there was Kaiser Hospital, which is a regional oncology center. That hospital was built to Gold LEED standards because we had local sand available; and had we not had that we wouldn't have been able to reach those environmental standards. And that also here in San Francisco holds true for the San Francisco Public Utilities Commission building and in San Leandro it holds true for the Kaiser Hospital down there, as well for a number of other projects.

I am currently also a Commissioner at the Port of Oakland. You guys are Commissioners so you know it's very rare that before you become a group of people who represent all of the building trades, all of the labor unions from all nine counties, all of the business coalition and business people, local governments, local ports, the Bay Planning Coalition - to see a coalition like this come around to something I think tells you how important it is to the economy because this is local jobs.

How important it is to the environment. We have heard about the reduction of truck miles and the carbon footprint. Which we talk about, we preach about it, and here we have an opportunity to really do something about it, and how important it is to keep this economic vibrancy that we have going in the Bay Area. The reason that people are coming here, that people are

moving here, the reason why the building trades are here is because there is a construction boom, and without that sand, that stops. And as the City of San Francisco letter I think so beautifully says, we need to not only keep that economic boom going and that vitality but we need to keep the costs down. And the only way we do that is by keeping that sand locally.

A couple of the people have talked about something that I think is so critical. Do not as a Commission give up your right to protect this environment to another jurisdiction that doesn't share our values. I can't tell you how important that is. We look up and down the coast of where this sand may come from, and we can control it. We also at the same time are reducing that truck traffic, which I know as an Oakland Commissioner, we deal with truck traffic and pollution and the impacts, particularly on minority communities, all the time. So reducing that is a critical, critical issue. Thank you for your time.

The following speaker addressed Agenda Item 9.

Mr. Perrine commented: My name is Scott Perrine, I am Vice President of Operations and Sustainability for Central Concrete Supply here in the Bay Area. We are the largest ready-mix producer here in the San Francisco Bay and the industry leader in regards to sustainable, environmental-friendly concrete and concrete production. Sustainable and environmentally-friendly concrete plays a critical role in expanding and maintaining our infrastructure, the constructing of schools, hospitals, high-rise buildings and our homes. With fine and coarse aggregates making up 80 percent of our product, high-quality local sand is key to our goal of maintaining the smallest carbon footprint in our industry. On average, Central Concrete utilizes 207,000 cubic yards of Bay sand annually, which equates to approximately 11,740 truckloads of sand each year. Our plant in San Francisco alone accounts for 47 percent of those truckloads, 5,518 truckloads annually. Fortunately, our San Francisco ready-mix plant and the Hanson Marine Operations' San Francisco facility are both located on Pier 92, so that's 5,518 truckloads that never touch the streets of the Bay area.

Central Concrete currently utilizes 12 aggregate trucks, looping throughout the day to deliver Bay sand to our various facilities. If Hanson Marine Operations were to no longer produce and supply Bay sand to operations we would be forced to purchase sand from other material providers outside our current operating area, tripling our daily truck demand to a total of 36 trucks on a daily basis. Twenty-four trucks may not sound like that much on a daily basis but when you look at that extrapolated out to an annualized basis, that is an approximate 1.7 million additional miles of truck traffic. That is also an additional 346,000 gallons of fuel burned annually. All that increases our greenhouse gas and our carbon footprint, not to mention inhibiting the ability to meet the strict LEED performance requirements that the state, counties and cities are all demanding of us.

Central Concrete would also be forced to purchase more foreign sand, which as you heard, currently is manufactured and shipped from Canada down here to the Bay Area. Barging material from Canada greatly increases our carbon footprint due to the distance the material is transported and the fuel that the ships burn. Foreign sand also takes away from the local Bay Area job opportunities and moves them out of the country permanently.

Purchasing sand from outside the area, foreign or domestic, will have a substantial, negative impact on concrete ready-mix cost. This impact to the cost of raw materials and trucking will result in a higher ready-mix price into the market, thus increasing the overall bill price of any project; basically, adversely affecting public and private funding opportunities, rehab and new construction products.

Some of the projects we have utilized over the years that contained Bay sand: Doyle Drive project, Yerba Buena off-ramps, Trans Bay Block 6, 270 Brandon Street, St. Luke's Hospital, Maxwell parking garage, Haas School of Business, Warham parking structure and Embarcadero. We could easily utilize 50 to 60 percent more Bay sand in our projects if we had the ability and the reserves. Thank you very much.

The following two speakers addressed Agenda Item 11:

Mr. Stephenson addressed the Commission: I am Ladd Stephenson, Syar Industries. I am in support of both projects but the Lind project. I have been purchasing this sand since roughly 1983. Trying to compete with them because I crush rock also to make sand. It doesn't happen. It's roughly 300 gallons of water – I haven't heard this brought up – to create a ton of sand, just washing sand. It is more when you crush it and start from the get-go. I have got two little examples then I'll get out of your way.

You are welcome to try this. All the sand that you are taking out of the Bay passes through this screen. When I crush it, 15 to 20 percent of it goes through this screen. That is essentially a product that I haven't found a good use for. And with that, I hope you support the project.

Mr. Lind spoke before the Commission: Good afternoon, everybody. I am Christian Lind, Vice President of Lind Marine. Obviously, I am here to support this project for Hanson and Lind Marine. Everything I wanted to say has pretty much been said today but I just want to bring it to a personal level. We are a century-old business. We have been great stewards of the Bay for a century now, mining oyster shell and sand. We are a historic part of the Bay and part of the heritage of this Bay and important to the maritime commerce of the Bay. We have got about 45 employees and their families relying on this project to move forward. This is our only source of sand available to us, we have no other sources. Our marine terminals have been developed to bring sand in by barge and either go directly into a plant, such as at Syar, where it never touches a public road until it is made into a product, or to go to a centralized location at a marine terminal where it is delivered a very short distance right to the customer. The other thing that has been touched on a few times that I feel is really important is not to export our environmental impacts to other countries or other places. It makes good sense to me to use the material we need that is available to us locally that we have available; we should be using locally.

The amount of agencies that regulate our business, it is hard for me to even remember all of them. We have full-time staff now just to keep us in line. I think definitely other places that the sand could be gotten would not have those same regulatory controls. So this is the best place for sand to be mined for sand that we need locally. It should be mined locally and managed locally. I think that's about all I have to say, thank you.

Acting Chair Chappell continued: That is the last speaker we have. I would like to suggest that we have a vote to close the public hearing and then to take questions and comments from the Commissioners. Alternatively you could vote to keep the public hearing open until 5:00 p.m. Friday in case there are other public comments that come in.

Ms. Goeden spoke: Commissioner Chappell, I do know that we are almost in receipt of a letter from the National Park Service, there just was not a signature on the letter. I have the draft but since it was not signed I did not feel it was appropriate to pass on yet. So that is supposed to be coming in today. Also, Mark Delaplaine from the Coastal Commission, he had a conflict today so he couldn't come. But he said if you had any questions for them regarding their letter he would be happy to respond in writing for you. So I just wanted to provide those two points as part of the public comment.

MOTION: Commissioner Bates moved to close the public hearing on Friday, March 20, at 5:00 p.m., seconded by Commissioner Zwissler. The motion carried by a voice vote with no abstentions or objections.

Acting Chair Chappell asked for Commissioner comments and questions:

Commissioner Pemberton posed several questions: I have a number of questions. I also wanted to give a little bit of context on a couple of issues.

The State Lands Commission certified the EIR for these permits for the sand mining. There are a number – I won't get into all the details – but a number of things in the staff reports that our Commission disagrees with. I also wanted to address the public trust needs and that information in the staff reports. The Commission in its review of all of the impacts of this project on the various resources, as many people have said, found that the impacts were less than significant. I think the EIR really speaks for itself. It was an exhaustive, thorough, very comprehensive document that the Commission adopted on a 3-0 vote. The courts have affirmed the findings and the analysis in the EIR so I think that is important to know.

Then I also wanted to point out, on the public trust the analysis talks about the sand mining as being consistent with the public trust but that it may be inconsistent with other trust uses like habitat preservation or open space preservation. The State Lands Commission, as a landowner, has been making public trust consistency determinations for decades and decades. How we go about doing that is kind of as a balancing, looking at competing public trust uses. It is not necessary to find that the trust is consistent with every different use. There's recreational uses, marine oil terminals, the cruise ship terminal, the Ferry Building, all of those you could say, if you compared it to every use, it would be inconsistent with habitat preservation, it would be inconsistent with open space. But we look at that on balance and we look at what is in the best interest of the State in making that determination.

I also wanted to just ask a number of questions. In the staff report it says that the cost for the project is around $25 million and I wanted to better understand what that project cost of $25.2 million is for. Ms. Goeden responded: The total project cost you are referring to is in the Central Bay permit staff summary so that would be Hanson Marine. Where we got that number was from

the application. We asked for the total project cost from the applicant. I will ask them to explain that. Mr. Roth replied: I am caught off guard with that question so I guess what I would like to do is get the answers back to you so that they're accurate, by close of business tomorrow.

Commissioner Pemberton continued her comments: A couple of other things I wanted to touch on. I wanted to mention during the presentation on the EIR, the analysis on some of the impacts to fish was characterized as theoretical. I think that is wrong. It was not done as theoretical but using quality data from the Department of Fish and Wildlife.

I also wanted to ask about the greenhouse gas emissions. I think that Brenda said that that's not specifically a policy that BCDC has to consider so I am just curious. I know we are very forward thinking and proactive with sea level rise. How do greenhouse gas emissions fit into that equation? Because I think it is such an important issue for the State and there are such ambitious goals for greenhouse gas emissions. So I am just interested in knowing how that is evaluated in the context of how BCDC makes a determination about those impacts as it relates to various projects because it is so important. And I guess just to add to that - correct me if I am wrong - but I think as far as sea level rise, that is not necessarily a policy as I understand it, like an applicable Bay Policy, I may be mistaken. So how is that in relation to greenhouse gas emissions? How are those addressed outside of the policies and what is the process?

Ms. Goeden answered: I am going to start with your first question, which I don't think was a question, I think it was more a statement. You mentioned that I said the Fish Entrainment Study was a theoretical study and I did not mean for that to be offensive or denigrating. Basically, from my understanding of the study, Applied Marine Sciences took data from nearby areas, not on the lease areas but nearby areas, because Cal Fish and Wildlife does annual and probably even quarterly trawls where they look at different areas of the Bay to see how the fish populations are doing in a trend analysis. They have been doing those for a number of years and they use different kinds of equipment. None of the equipment that they use, from my understanding, deals with bottom organisms, it's mostly otter trawls that are catching different sorts of fish than what you would normally get across the bottom as well as, I think, a mid-water trawl. I am speaking off the top of my head, I am not sure that is entirely correct. My understanding is, Jay Johnson put that information into a model. He did not study fish being sucked up, per se, but looked at volume of water being pumped into the sand mining dredge and did calculations to estimate numbers of fish that may be entrained based on the populations of nearby areas and then compared that to the total population of those fish in the Bay. That is what I think he did and I call that "theoretical" more than "applied" I guess would be my other way of saying it in that he did not study the fish being sucked up. As far as I know that is pretty difficult to do so you have to take population numbers and make some assumptions based on volume of water and locations and things like that. So that was the reason I called it "theoretical" which maybe wasn't the appropriate word. That is my understanding of the study in a very broad summary of it.

Commissioner Pemberton replied: My understanding is – I think all the experts we have talked to – is that is a very credible way to make that determination. Ms. Goeden responded: I did not say it was not credible at all. We, in fact, used those numbers in all of our summaries. Those are out of that document. All the numbers that we included in the summaries are from Jay Johnson's

study from Applied Marine Sciences out of the EIR. So that's exactly where that data came from and we didn't say it wasn't credible. Commissioner Pemberton asked about greenhouse gases: Thank you. Let's be clear on that.

So the second question was regarding greenhouse gases. I am going to turn to Steve Goldbeck and let him answer that.

Mr. Goldbeck commented: I am actually going to turn it over to Chris but first, what Brenda had said about greenhouse gases is correct. Your law and policy does not have specific policies that you have adopted on greenhouse gas and greenhouse gas emissions. Really how we are getting at that topic is through, as you have heard, the feasibility analysis of alternatives and the impacts of the alternatives. With that I will give it to Chris.

Ms. Chris Tiedemann opined: There is a discussion that answers the question at page 33 of the staff summary for the Lind application; I think it is in all of the staff summaries. It is called Feasibility and Public Benefits. The Subtidal Policy 2 requires that the Commission consider the feasibility of alternatives to the project. The definition of "feasibility" that we use is the CEQA definition of "feasible alternatives" and that includes consideration of public policies surrounding alternatives. That's how greenhouse gas emissions are part of this analysis.

Commissioner Pemberton inquired further: For these specific permits then, how was that evaluated in the staff reports? Ms. Goeden replied: We provided the information to you from both the EIR and the applicants in the staff summary. We have not provided a recommendation yet, that is part of this discussion here. The Commission is supposed to consider whether or not the project is feasible based on the items that we have laid out in the staff report and the public testimony. So it is your turn to think about whether or not this project is feasible. We listed in the summaries what the different feasibility items are that you should be considering. So our hope is that as Commissioners you will think about that and provide some guidance back to us.

Commissioner Pemberton clarified some issues: In public comment I think it was stated that the baseline that was used in the EIR was not a good baseline. I just wanted to say that from State Lands' perspective, we would disagree. I also wanted to note that the trial court has concurred with the State Lands Commission as to that baseline being very, very appropriate. I also wanted to clarify what approvals have already been issued. Of course, the State Lands Commission issued the leases but what other approvals from state and federal agencies have been provided?

Ms. Goeden answered: As part of BCDC's filing requirements we are required by Bay Plan policies to get water quality certification, biological opinions when there is potential to take listed species, that would be in the case of the federal agencies, and an incidental take permit in the case of the state-listed species. I know the applicant said we have been in this process for years. Part of the reason why it took two years for BCDC to get to the point of being here with you today is because we were waiting for those other agencies to go through their process and be complete. In January we received from the Water Board the water quality certification and waste discharge

requirements, which was one of the filing requirements. I believe it was October of last year we received the biological opinion from the US Fish and Wildlife Service. In July and then again in October or November we got the California Department of Fish and Wildlife incidental take permit and then it was subsequently amended so we also have that amendment. Right after the Water Board we got the NOAA Fisheries biological opinion so that was, I believe, the 28th or so of January.

So right now the file is now complete, we are in the 90 day period to complete the permit process.

Commissioner Pemberton stated: So all of those agencies, state and federal in their independent analysis, have not objected? Ms. Goeden replied: The Water Board lowered the volume with the agreement of the applicants and provided conditions that both require a water quality effluent study and it also included a reopener clause. They had a number of questions about additional studies but didn't require too many more, just the effluent study. US Fish and Wildlife Service was really primarily concerned with Suisun because of Delta smelt and so they required mitigation at Liberty Island for the take of Delta smelt; and not a lot of take, just a small amount of take. They also put seasonal restrictions on those lease areas. They reduced the volume, I believe, from the months of December through June to lower mining volumes to help reduce impacts to Delta smelt. They also reduced the area that they can mine and they pushed them out into deeper water during spawning season. NOAA Fisheries required the benthic study because they felt that the benthic study in the EIR was not appropriate to fully characterize the impacts of the project to essential fish habitat. They requested mitigation in the form of credits at Liberty Island. Then in their conservation recommendations they actually recommended that no mining be approved beyond the baseline volume, which was in the CEQA/NEPA document, I think it was 1.45. But that is a conservation recommendation and it is made to the Army Corps, so the Army Corps can take up that conservation recommendation and so can BCDC. We both can take a look at that as getting advice from our Resource Agencies with additional expertise. That is probably not everything but it is close.

Commissioner Pemberton had an additional question: One last question on the public trust. Because in the public trust piece of the staff reports it talks about the mining being consistent with the public trust but you raise the issue that it may be inconsistent with habitat preservation or open space preservation. How does staff reconcile those two things? Ms. Goeden replied: Again, this is the Commission's position to take. Staff provides the information. The Commission needs to make the decision about whether or not the project is consistent with the public trust needs. As I explained in the staff summary, the State Lands Commission makes a determination that the project is consistent with the public trust use; and you have done that and I explained that in the staff report.

Commissioner Pemberton clarified a point: I think the State Lands Commission makes a determination that it is consistent with the common law public trust doctrine or that the use is consistent with the public trust doctrine. Ms. Goeden concurred: Yes, that would be a better way of saying it. Then BCDC's policy directs us to make sure that the project is consistent with the public trust needs of the Bay. So we look at yours and then make a comparison between the needs versus

the use and I have laid out the potential issues there. I think BCDC, like the State Lands Commission, would need to balance the different options. Because there is not a conflict as far as we can see at the staff level, with navigation but there might be with preservation of land forms and habitat. That is something the Commission needs to think about and balance as part of their decision.

Commissioner Pemberton expressed a bit of confusion: I am just confused about the concept of looking at it as weighing it by each use and applying the question of trust consistency to each use. Because, at least in my experience, that is not how I think the courts have looked at it or the State Lands Commission staff have looked at it. They have looked at it more as to whether the overall use is consistent with the principles of the public trust, which again, is why one of the examples like the Ferry Building is inconsistent with open space preservation or habitat. Various things are but they certainly overall have been found to be consistent with the public trust. So I am interested in knowing more about how BCDC staff would reconcile those two things, based on the way it is laid out in the staff report.

Ms. Tiedemann stated: I agree with your comments about the difference between what State Lands does when it makes a trust determination and what this Commission does. The Commission uses its standard for permit decisions, the Bay Plan policies. Unfortunately, in my view, the Bay Plan policies refer to the public trust needs of the area and that is the task before the Commission. That does not mean, and you stated this Commissioner Pemberton, that every project must serve every trust need. Obviously, port operations interfere with public access and open space, yet they are accepted trust uses of property and this Commission frequently decides on projects that serve port needs and not other needs. The Executive Director said at a previous meeting, there is no algorithm for making the decisions that are before you. You need to balance various policies and make the best decision that you can make. There is different language in the Bay Plan than the State Lands Commission uses for making its legislative determinations on whether use of property that the state owns is consistent with the Trust. I don't know if that answers your question but the Bay Plan language is different.

Commissioner Pemberton commented: I agree. I think by that you are meaning it, because it says, I think, the actions are consistent with the public trust needs of the area versus consistent with the common law public trust doctrine, if I understand you correctly. MS. Tiedemann replied: Yes.

Commissioner Gioia inquired: Just a couple of questions, including just requests for further information. On the greenhouse gas issue, just to be clear, who conducted the greenhouse gas analysis? There's a few of us here on the Bay Area Air Quality Management District. Were they involved in reviewing it? How was the analysis performed or who performed it? Ms. Goeden replied: As far as I know, the State Lands Commission in their EIR, they did a whole section on greenhouse gas analysis. I don't personally know whether that was staff or whether it was a consultant that was hired to do the work. I know that consultants did some of the EIR but I don't know if it was ESA who did it or staff. Commissioner Pemberton added: I am not sure for each element whether it was staff or the consultant but I can find out. I don't know if it matters, the EIR is the EIR.

Commissioner Gioia asked: Would the Air District normally be the entity that would review that? Did you get any comments back from Bay Area Air Quality Management District?

Ms. Goeden answered: Again, that would be a question to State Lands because State Lands distributed the EIR to all the responsible agencies. My assumption would be if they were doing an air quality analysis they would ask the air Board to review that. Commissioner Gioia added: Or the California Air Resources Board. One of those. Ms. Goeden agreed: Or the California Air Resources Board. One of those two to review it. But I honestly don't know. Commissioner Pemberton added: I think so. I don't know offhand.

Commissioner Gioia reiterated his question: That would be just a question, did CARB or BAAQMD, you know the local Air District or State Board do a review? Ms. Goeden responded and asked the applicants: There was a public comment today, and I don't remember who made it, but there was another air emissions analysis done recently; is that correct? Is there a new one that was done recently that you presented today? Mr. Marsh replied: To clarify, I believe it was Environmental Science Associates that conducted the air quality analysis for the EIR itself for the State Lands Commission. Then subsequently we have done a couple of supplemental analyses with ENVIRON, which is a consultant group that has an office here in San Francisco, that both looked at the alternatives analysis, which is in the technical feasibility analysis that you will see in your packets and then they did some subsequent calculations that we have summarized in some of our responses. But that is a supplemental analysis. I would say that the numbers between what was done for the EIR and later are pretty consistent. They are off a little bit. I don't recall seeing any comments specific from either the Bay Area Air Quality Management District or CARB.

Commissioner Gioia further inquired: It sounds like the supplemental analysis was definitely not submitted [to CARB or BAAQMD]. The question is whether the EIR emissions analysis, was reviewed, who reviewed?

Second, we saw some charts about history of sand mining going back to 1974. Is there a chart or can you provide just so we can get a long-term history? It looked like the 1974 to recent; I assume that the differences were due to demand for construction and housing. Do we know why the amounts varied as much as they did? Ms. Goeden replied: There are a couple of things there. One, this is the only history we have and it is from our permits. So we looked back. And actually it was Kate Dallas who was an intern at USGS many years ago who first was interested in the question of how much sand and sediment was extracted from the Bay and she started this process of looking at our permits to find what reports we had. This data is all the data we have available to us. As far as I know we are the only agency who seems to have this data because we have provided it to other folks who have asked for it because they don't have it. It is the reported history. And we do know from certain periods there was some mining going on that was not reported but we can't represent it here. We have to be upfront and honest about that. As far as I know there was no sand mining going on for pleasure, it was to supply the construction industry. So I think this represents kind of, building over time and changes in construction practices perhaps, but I couldn't really say.

Commissioner Gioia had an additional question: And maybe at some point the sand mining applicants could just comment about their perspective on the variation and what that was due to. And the last question, realizing that the Regional Water Quality Control Board and BCDC have different authority and different review responsibilities and therefore their decisions could be different, that it would be interesting to hear, Jim, you are on the Regional Board, at some point here in the discussion just your perspective of the flavor of the discussion at the Regional Board. And I know you were going to probably say it anyway so I'll just officially ask so you could at the right time just talk a little bit about the hearing at the Regional Board.

Ms. Goeden touched on sand mining variability: There was one interesting thing that was mentioned in some of our discussions with the sand miners about variability in sand mining. And part of it which we found fascinating, was the idea that when construction for homes is booming in Antioch and Pittsburg, far East Bay, the sand resources that are normally coming in trucks to the Bay Area go east, because that's closer to their quarries and they do better when they are supplying their own backyard. At that time, that was in the last building boom before everything went pop, when everybody moved east the Bay sand mining increased because now the market along the coast of the Bay opened up more quite a bit more and the competition was less. So that was one explanation that was given for really some high level of mining in the mid to late-2000s.

Commissioner Gioia added: It almost seems to track the housing market here in the Bay Area. Ms. Goeden agreed: Yes, it really does. It's fascinating, residential primarily. Commissioner Gioia: The residential more than anything, yes. Thank you.

Commissioner McGrath commented: Let me start with a little bit of a background. Twenty thousand years ago we would not be looking at the Bay, we would be looking at a valley and over there would be a very deep river and 300 feet more of elevation difference between this area and the coast.

There was a huge amount of water and sand going down through that. The features that we saw in the last 8,000 years when sea level rise reached the Bay were formed relatively quickly and there was a huge surplus of sediment. After the [hydraulic] mining era there was a huge surplus of sediment that has been left in San Pablo Bay from the hydraulic mining. Things have changed fairly dramatically.

We have put dams on most of the rivers and we've known for about the last 20 years, through the work of Phil Williams and Associates and through the USGS, that we are facing a fairly serious sediment deficit in the Bay. And that is needed to deal with sea level rise, deal with sustaining wetlands and, more recently, the importance of mineral deposits, that is the coarser sediment, as a base for those systems. I am going to go to my bottom line. My opinion is, these operations need to come to an end unless we can establish very clearly that all sand proposed to be mined is relic material. I am not coming out fundamentally different than Christian Marsh was. The question is, what we do about uncertainty and whether or not what is being proposed to be mined is relic material or is inactive transport. The active transport material is needed for the

recreational beaches on the coast, to prevent excessive erosion and for the recreational beaches up and down the Carquinez Strait, some of which are in BCDC's jurisdiction and some are not. Sand mining on coastal streams is largely come to an end in California because we realize now that it poses grave issues.

We need to look at some of those resources and perhaps some of the contrary results. When I looked at the slides for the Middle Shoal and what was restricted, what came to my mind almost immediately is, we've taken what may be relic deposits of sand that aren't in the transport area and we've said, these are important for habitat. So, we're going to mine over here in the active area.

I think we have to look at things a little more holistically rather than just up the recreational stovepipe, up the construction industry stovepipe, or up the habitat stovepipe. While I think that if we can't make a clear case that these are relic sands, they have to come to an end. I don't think that has to happen overnight. This is where I try to rationalize the Regional Board action and what I think needs to be done at this time.

First of all, there is a lot more information before us now about this. I've been to most of the hearings. I've kind of unpacked not only the EIR but the USGS material and the technical appendices. I find them, with all apologies to the State Lands Commission, less than compelling that they make a case that this is relic material and what should be done in the case that they are not. The first one looks at deepening and says, well, if we deepen over here on the shoal it is not going to have a really big impact on the velocities going in and out of the Bay. Well, that is true. But that is only the tiniest bit of the story of what happens at the mouth of the Bay and whether or not it is relic material.

The second study that went on looked at what happened after you had dug an excavation and it didn't fill in right away. They concluded that therefore they were relic. It is a possibility that they are relic. It is also a possibility that we just haven't had the kind of storm events that deliver the sand that would have covered up and demonstrated it.

There is a lot of sand at the mouth of the Bay. With all due respect to the debate about the amount, I am satisfied that the Regional Board's limitation of 1.6 which focused on the most important question, is it relic material or is it on its way to the coast; is okay for now.

We have to take very seriously the information gaps and needs to make sure that, over the next five to ten years, we know in fact, whether or not this is relic material. If it is relic material the impacts are localized. If it is not relic material it poses hazards to coastal resources.

We can measure currents and direction. We have fine Doppler meters that can be put on the bed. We can figure out whether or not, in fact, some of those areas have low currents. One of the startling bits of testimony from the industry that you have to think about is, this is really great, this is really well sorted sand at 60 to 90 feet. There are no waves at the mouth of San Francisco Bay that are sorting fine material off at 60 to 90 feet. What that means is that the current velocities which have nothing to do with the rivers at that point and everything to do with the tidal exchange

are sufficient to prevent any fine material settling on that. That tends to argue against them being relic material. It tends to be, argue that they are right in the middle of a very strong current field. We don't have sediment grain size information that would begin to define, here are the velocities are much higher than in other places because the sediment is not as coarse. We can measure those things.

We can use multi-beam surveys more frequently and in combination with what is coming out of the Delta to refine our assumptions. We need to have grain size in that. In terms of a monitoring program it needs to be robust. It needs to look at specifically the question of, is this relic sand and what do we need to know over what period of time.

Commissioner Zwissler had a question for the applicant: The applicant does not need to answer right now. They can answer it by five tomorrow. I am curious about the suggestions that some of the public comments were about reducing the levels of sand to be mined, maybe three or four-hundred thousand cubic yards. What are the economic or practicable impacts of that from your perspective? What does that mean in the real world if that was your limit?

Commissioner Gibbs commented: I have been shocked twice today. Just now by Commissioner McGrath and his words carry a great deal of weight with me because of his experience and the care with which he approaches all these issues. And he said, just shut it down. I was shocked earlier today when two representatives from the environmental community, Mr. Lewis from Save the Bay and Mr. Feinstein from Sierra Club came and took it for granted that there should be some level of mining going on because based on our experience you might have expected that they would say, no, zero activity. For me, the most compelling and simple statement of all was Mr. Feinstein's that obviously, the more that gets taken out of the Bay the more impact it makes sense that there would be. I too will be interested in the applicants' analysis of what some of the lower amounts might mean in the real world.

And also, I hope that staff will help provide us with some ways to think through this. At what levels are there meaningful impacts on the Bay and at what levels are there meaningful economic impacts on not only the applicants but the entire economy particularly the construction-based economy of the Bay Area.

Commissioner Bates commented: I appreciate all the comments today. My questions are more simplistic and maybe they are not easy to answer. It seems like we have been mining for 70 years. The question is, how can you continue to take more sand out? How much sand is coming in? When do we reach a level of sustainability? I certainly agree with the comments that we would like to keep the industry alive. We would like to make sure that we have sand. We would like to make sure we can do the construction work that is underway. The question is, you can't just keep taking it out and then as was pointed out, we do have all these dams. We do all these things and it is not like all of the mountains are becoming rocks and rocks are becoming pebbles and pebbles are becoming sand. It seems like at some point we run out or we over mine. And then where are we? My question and my concern is, is it possible to make a determination what would, in fact, be a sustainable level of mining that we could actually take out and continue to have a healthy industry?

Commissioner Sweet commented: The question is, if the permit is granted for less than the request, could it be on a condition that they could come back and say, here is where we are and here is where the construction industry is, here is what we are looking at, we would like to do more. Is that feasible or is that process just too complicated? Ms. Goeden replied: It depends on who you ask the question to. We have had this conversation with the applicants. We have talked about the idea of doing a five-year permit versus a ten-year permit. We are intending to include a reopener clause as part of the conditions if the studies show that there is something really significantly bad going on that needs some immediate action. We have talked about the idea of having a lower volume with the ability to come in and request an amendment. We regularly amend permits and part of our rationale for that is we do have a CEQA document that has a significantly higher volume and the leases have a significantly higher volume but the applicants would say, they said that they are so tired of this very, very long and painful and awful process that has been going on for years, that they have very little confidence that if they came in and asked us for an amendment and could show that the demand was really in need and that the studies were great that we would actually give them the amendment without any pain and suffering. That is the gist of our conversation. Would the applicant like to speak to this? Mr. Roth commented: This process started in 2006 and that is because most of our permits were going to expire in 2008. We thought two years would be plenty of time. Well, it is 2015 and nine years after starting, we are going to get close to a vote next month. We would we like to wrestle with this thinking that it took us nine years this time. What is it going to take us next time? It is almost like when we get this vote, we have got to start going for our next ten-year permit immediately thereafter if history repeats itself.

Commissioner Pine commented: I think the letter from the Coastal Commission certainly demands a lot of attention. Could you just kind of give us your response, at a high level, to their assertion that the mining would reduce the sand on the beaches and therefore should be lowered substantially?

Ms. Goeden answered: I would say that we are generally in agreement with the assertion that the sediment supply is not in good shape and I think we would generally agree that we believe there is a connection between the Bay and the outer coast. Unfortunately, we don't feel we have really solid science to say exactly what that connection is and how big of a connection it is, which is why we are considering the idea of some additional studies to try to validate the model and get at that question a little bit more. As far as the volume limits, that is a really difficult question. I think one of the Commissioners earlier said, you need to look at what is sustainable for the miners, what is sustainable for the system, what helps support the Bay Area economy. There is no magic mathematical equation and so I think we are still very much struggling with that question. We do have an environmentally superior alternative from the CEQA document, which is around 1.4, which is an interesting number, but I don't think that we have come to a conclusion yet on that.

Acting Chair Chappell asked for adjournment: Before we entertain any more questions could we have a motion to adjourn and move directly into a committee of the whole?

MOTION: Upon motion by Commissioner Pine, seconded by Commissioner Zwissler, the Commission meeting was adjourned at 4:42 p.m. by voice vote with no abstentions or objections.

The remaining Commissioners reconvened as a special committee to continue discussion of Items 9, 10, 11 and 12.

Commissioner Gioia asked: Could I ask a follow-up question on a comment that was just made by our staff? This 1.4 million cubic yards number you were talking about in CEQA, could you talk a bit more about that? Ms. Goeden replied: In the CEQA document the State Lands Commission evaluated the full project, which was the 2.04 million cubic yards overall. It evaluated a reduced project alternative, which was based on the baseline mining and the baseline was based on the actual mining volumes from 2003 to 2007. It evaluated clamshell instead of using a hydraulic dredge. Using a clamshell, which might eliminate some of the impacts from entrainment but would make mining less efficient. And it also evaluated the LTMS alternative, which basically meant mining seasonally. So looking at the different alternatives the CEQA document identified the reduced alternative as the environmentally superior alternative. But then the State Lands Commission in its findings on issuing the leases made some overriding considerations.

Commissioner Gioia asked: So the environmentally superior alternative, what was the average per year? Ms. Goeden replied: It was 1.426 million cubic yards. Commissioner Gioia continued: So that was listed as the environmentally superior alternative. And what was the peak? Was there a peak? Ms. Goeden responded: There were no peaks considered at that time. The peaks have kind of evolved in this last year's worth of discussion. Commissioner Gioia stated: Clearly the most important thing is the – I assume and maybe someone can sort of educate me – the total harvest amount is what is important, I assume. How important is the peak issue? Explain the issue with peak from a year-to-year basis. So talk about how those interact with each other, what is most important. I understand there is going to be from the applicants' standpoint an issue about why they want a peak, so we will hear that, and then also from the staff's perspective about how that works from the standpoint of the standards we use for environmental issues. Mr. Butler commented: So with regards to the difference between the average volumes, which basically provides a calculation method to give you a total volume over a ten-year period. Well as you saw on a lot of the graphics, the actual market demand fluctuates widely and it does vary, you know, greatly with housing demand, et cetera. And so the peak was a concept that we kind of came up with to be able to take some of that market fluctuation into consideration so that we could be looking at a lower average over time but then have the ability to meet market needs in particular years if they went past that average. Because we can probably say that there will be years where we would not meet that average level where the market is currently, but there could be years where something happens, if there is a big project that comes along or something like that, that we need that flexibility to be able to flow with the market a little bit, but yet keep the overall volumes down at a little lower level. Hopefully that explains that. In the past the permit has sort of provided a ceiling and then we have been running around down here under the market because we had to stay under the ceiling. This concept provides sort of an average over time but with the ceiling that

we would stay under that has been evaluated in the EIR, all the things that were evaluated with that. We would stay under that ceiling but allow the flexibility to be above and below that average over time; which is extremely important to us.

Commissioner Scharff commented: I am really interested in figuring out the connection with the science. What we don't know and how that plays into a robust monitoring system. Commissioner McGrath said we needed one, I heard other people talk about that. I wanted sort of the sense of, I'm sure there are different types of monitoring systems and different type of information we need. So when we look at this on the staff report I was sort of hoping we could flesh that out a little bit more. We have the California Coastal Commission calling for a robust monitoring program. We have the applicants saying they are doing a monitoring program. I don't know, I doubt they are the same monitoring program. So I would like to get a sense of what all this means in terms of what we are going to look at and what the different options in a monitoring program are. Also, how long it would take to get the information that we might need. I think that is a critical component of this.

And then the other thing I am struggling with a little bit is; I completely understand how important sand mining is to the economy and all of that, I heard all the trades talk about that. But we are talking about a finite resource so at some point it will disappear. Is this something where it goes away five years from now, ten years now, twenty years from now? How long can you continue to sand mine? I would like to know that from the applicant. Maybe they believe there is enough sand there to mine forever. Because it sort of cuts on the greenhouse gas emissions issue in my mind in that, if we can keep the industry going, and I am thinking sort of like a fishing industry a little bit. That if you mine it all too fast you may actually collapse your industry and we may lose it. Whereas, if you take less you may keep it going longer. And I am sort of curious as to what your reaction to that would be. Mr. Roth responded: Commissioner, I think those were all great questions. Those really are the ones that you have to struggle with to make the right answer. I guess what we are saying is we have already committed to quite a few mitigation and monitoring programs, so we have committed to a lot.

What you saw in the applications, and I think as well as staff's presentation is we know that we need more science to make good decisions. So what we are willing to do, and we would love to have Mr. McGrath on that, we want to form a TAC, a technical advisory council, that truly comes up with what are the right questions – you certainly hit on some of them – and then put the best science together to start tackling these issues. So that ten years from today if we are sitting here we have answers, at least we have moved the bar forward to come up with some of the answers to the questions you may have. And you hit on a very profound point. We are going back 20,000 years and then 10,000 years. Or maybe it was 20 million years, I forget what you said. But the reality is, you know, how much time do you need to truly know what is going on? We needed a lot of years to see this thing get to where it is today. Can you study something for four years and come up with an answer? I am not sure, but that is a very good question.

I guess the last question that you asked was how long is it going to last, right? In 2000 ADEC did a study in the Bay on two leases. So we actually have four leases out there. On two of them they actually did a study because they needed millions and millions of fill, what they were

considering fill, to build new runways over at SFO. So they stopped going down at 90 feet and they said, clearly this thing is going much further than 90 feet below where we are. So this is going down in the Bay, finding where the sand is, then they went down 90 feet. That was solid material for 90 feet. So they said in just two leases there's 60 million cubic yards of material; that's only in two. So we can start hypothesizing and saying, well what if you looked at four? What if you went down to 300 feet like some people said the Bay is before you hit hard rock. So there are millions and millions of tons. Does anyone know the exact number? No. But if we took out ten million over a ten-year period, I am not saying we are scratching the surface because I don't know but there are certainly many, many more millions of cubic yards remaining. Commissioner Scharff asked for clarification: So it is your view that the industry could last at the current rate for 20 years plus? Mr. Roth replied: Based on what ADEC found, yes.

Commissioner Sears had questions: I would like to follow-up with some questions for you if you wouldn't mind.

I am assuming like all good business enterprises you have done a business plan for the years ahead that is based on some information about what amount of sand you would want to take to make your business sustainable. Could you talk to us about the basis for creating your business plans? Mr. Roth replied: We bought this business back in 1999. Back in that period of time we were permitted for 2.2 million cubic yards. We never used 2.2 million cubic yards. As you saw in the graph, the economy jumps up and down. Commissioner Sears added: This is not a permit-related question; it's a business plan-related question. Mr. Roth responded: Okay. Back then yes, the business plan worked at 2.2 million cubic yards. As you saw recently, because our permit has basically stopped, we have been handcuffed trying to keep this business alive. I can tell you for the last five years waiting for this permit we have lost a lot of money. Commissioner Sears inquired: What does your business plan tell you that you would need to take during a year? Do you base your request for the permit amount based on a business plan that you have developed? Mr. Roth answered: I can tell you that I wasn't with the company when we acquired the assets but I could come up with a number, a breakeven number probably today. But I can tell you for the last five years we have been losing in the millions. Commissioner Sears asked: Do you have a business plan for the next ten years going forward? Mr. Roth replied: We don't go forward five years but yes, three years we do. Commissioner Sears added: Go forward three years for your business plan. So that would include analysis that the company has done of what your expectation is of the market, what is sustainable for your business and what that amount of sand is, right? Mr. Roth agreed: Correct. Commissioner Sears requested information: It would be helpful for us to have that information.

You also talked about doing some studies and creating an advisory task force. Do you have an estimate in making that proposal of how much time would be appropriate for the period of study to get the kind of information the various Commissioners have been asking for to try to get a sense of sustainability? Mr. Roth stated: I can't say I do, I am not a scientific person. But what we would be willing to do is help fund this TAC so that we could put together the people that would be able to answer those questions. Commissioner Sears asked: Are you willing to fund the studies themselves?

Mr. Roth answered: Up to a certain dollar volume and limit, yes. Commissioner Sears asked: What is that limit? Mr. Roth replied: We have offered, in addition to the $2 million that we are already spending, an additional quarter-million dollars. Commissioner Sears continued: Per year? Mr. Roth replied: No. Commissioner Sears asked: Total? Mr. Roth replied: Total. Commissioner Sears asked: For ten years or for a shorter period of time? Mr. Roth clarified: Over the ten-year permit. Commissioner Sears stated: Okay. Without a sense of how long and whether the studies could be completed sooner. So if the studies could be completed sooner you would still be providing that amount of funding? Mr. Roth agreed: Correct. Mr. Butler made some clarifications: I just want to make a couple of clarifying points. I think one of the reasons that we would form a TAC is to get the experts in the same room to tell us, okay, how long will it take to get the information that we need intelligently. But I do think that what we were talking about for as far as a study length, for funding that we have offered. We would certainly imagine that a lot of that work would be done in the first few years. And then there may be more, that may make more recommendations at that point.

Commissioner Scharff stated: Just to add on to my request for some information. Could you also give us a sense of how much you have spent over those seven years on this permitting process? Ms. Goeden asked for clarification: Do you want the total amount spent on BCDC's permit or the CEQA, the Water Board? Commissioner Scharff replied: All of it.

Commissioner McGrath added: I do take seriously the concerns about greenhouse gases; it's one of the things that we do have to weigh along with other factors. Trying to provide a long-term set of solutions at a lower price for sand mining is, I think, a valid objective. One of the things that I forgot to mention the first time is the mouth of San Francisco Bay and the Delta is not the only place where sediment was deposited at lower stands of sea level that may be available for harvesting. The borrow pit off Bay Farm Island comes quickly to mind. I believe about 22 million cubic yards was mined from that for construction of Bay Farm Island and Oakland Airport. There have been many years of mining of oyster shells in the South Bay. I would imagine if you looked at the offshore area of Alameda Creek, one of the larger rivers in the area, that you would find old deposits. So in terms of the long-term consideration of alternatives, not for the immediate term, I think we need to think a little bit about what alternatives are available over the longer period of time and perhaps when the permitting process should be started.

Acting Chair Chappell thanked everyone for their participation and closed the special committee.

13. **Adjournment**. Upon motion by Commissioner Pine, seconded by Commissioner Zwissler, the Commission meeting was adjourned at 4:42 p.m. by voice vote with no abstentions or objections.

The remaining Commissioners reconvened as a special committee to continue Items 9, 10, 11 and 12.

The special committee meeting was adjourned at 5:00 p.m.

Respectfully submitted,

LAWRENCE J. GOLDZBAND
Executive Director

Approved, with no corrections, at the
San Francisco Bay Conservation and
Development Commission Meeting
of April 2, 2015.

R. ZACHARY WASSERMAN, Chair