STAKEHOLDER ENGAGEMENT COMMITTEE

MINUTES

REGULAR MEETING
Wednesday, February 12, 2020
3:00 PM
(Paragraph numbers coincide with agenda item numbers)

1. WELCOME/CALL TO ORDER

The regular meeting of the Delta Conveyance Design and Construction Authority (DCA) Stakeholder Engagement Committee (SEC) was called to order at The Willow Ballroom, 10724 CA-160, Hood, CA 95639 at 3:01pm.

Barbara Keegan welcomed SEC members and the public to the meeting, acknowledging the hard work and time given to participation. She thanked the venue hosts and acknowledged the work of staff to prepare for the meeting. This meeting facility accommodates meeting size and allows for live streaming during the meeting.

The purpose of the SEC is to create a forum for Delta stakeholders to provide input and feedback on technical and engineering issues related to the DCA's current activities. The SEC is a formal advisory body to the DCA Board of Directors. As such, and like the DCA itself, the SEC is subject to public transparency laws applicable to local public agencies like the Brown Act and the Public Records Act. It is important to note that the SEC and its meetings are not part of the Department of Water Resources's (DWR's) California Environmental Quality Act (CEQA) public outreach process related to any potential Delta Conveyance project and therefore comments made at this meeting will not be tracked or recorded for those purposes. SEC member comments at this meeting will be recorded and tracked, but only for the purposes of the DCA.

2. ROLL CALL/HOUSEKEEPING

Committee members in attendance were Angelica Whaley, Anna Swenson, Barbara Barrigan-Parrilla, Cecille Giacoma, Douglas Hsia, Isabella Gonzalez-Potter, Jim Wallace, James Cox, Karen Mann, Malissa Tayaba, Dr. Mel Lytle, Peter Robertson, Phillip Merlo, Sean Wirth and Mike Hardesty. Ex-officio members Gilbert Cosio and Michael Moran were also in attendance. Tribal representative alternate Jesus Tarango also attended.

Committee members not present included David Gloski and Lindsey Liebig.

DCA Board Members in attendance were Director Sarah Palmer (Chair) and Director Barbara Keegan (Vice Chair). In addition, DCA and DWR staff members in attendance were Kathryn Mallon, Valerie Martinez, Joshua Nelson, Phil Ryan, Andrew Finney, Graham Bradner, Ken Bogdan and Katherine Marquez.

Ms. Keegan welcomed Peter Robertson, the Recreational Boating representative on the SEC, and asked if he would like to introduce himself. Mr. Robertson said he is a lifelong boater and has raised his family in the Delta. He would like to see things go as smoothly as possible.

Ms. Martinez reviewed housekeeping items. Members should sign in for accurate record-keeping. Members of the public can fill out and submit speaker cards in order to speak during the public comment period. Meeting is being filmed and webcast live and will be posted on the website following the meeting. Please be mindful of cameras and walk behind them if leaving the meeting. Emergency exits were reviewed.

Ms. Martinez provided an overview of materials provided to SEC members and members of the public. Documents were printed and provided on flash drives for SEC members. These documents included the current meeting agenda, meeting minutes from last meeting, question tracking packet, ppt presentation, map requested by Dr. Lytle, updated member roster, staff contact list, updated maps. A copy of the meeting presentation and some lookup tables were also provided. Additionally, the video of the last SEC meeting is available on flash drive.

Ms. Keegan reviewed meeting guidelines and norms. The chairperson presides over meetings and the vice-chairperson presides over the meeting in her absence. Discussion will be guided by the meeting facilitator, Valerie Martinez. At the last meeting, there were members who did not participate in the discussion, but each member has valuable input to provide and we want to ensure they have the opportunity. Staff will provide technical information to support the committee's work. Each meeting will be goal-oriented and purpose driven. The information provided is for purposes of discussion only and is subject to change. This is a moving process and all information being presented is the best information available today, but will be changing and staff will make every effort to highlight those changes when they occur. The committee holds no formal voting authority. We will seek consensus. All views will be listened to, recorded and reported. Participation in the SEC does not imply support for any proposed conveyance project.

Ms. Keegan reviewed the meeting agenda.

3. MINUTES REVIEW: January 22, 2020 Regular SEC Meeting

Ms. Keegan asked if there were any comments on the minutes, which were distributed to members, provided as hard copies at the meeting and posted on the website. Mr. Moran noted on page 22 a comment attributed was attributed to Mr. Moran but the comment was from Mr. Merlo. Ms. Keegan noted the correction would be made to the minutes. With this change, the minutes would be finalized.

4. DISCUSSION ITEMS/PRESENTATIONS

a. Follow-up and Roundtable on January 22, 2020 SEC Meeting

Ms. Martinez opened up the member roundtable for the January 22, 2020 meeting and other general input about outreach conducted or community feedback received. In refining the roundtable process, some prompts were provided to members after the last meeting in an effort to elicit more specific feedback.

Ms. Mann reported meeting with the Save California Alliance. She distributed copies of the proposed corridors maps to which the Save California Alliance has added year-round waterway usage points that lie mostly in the Eastern Corridor. A copy of the map was distributed to the SEC members and staff. The Delta is not for summer-only usage and is utilized year-round.

Ms. Martinez expressed gratitude for the map and indicated this type of feedback from committee members is helpful for the engineering team.

Ms. Mann said the intent is to show that a lot of people's way of life will be affected by the proposed project.

Ms. Swenson asked Ms. Mann if each of the locations is beneath the yellow labels that can be seen on the map. Ms. Mann said the map is not necessarily to scale, but the main idea was to provide the general location of these areas to people who aren't as familiar with the Delta waterways. Franks Tract Recreational area, for example, is located next to Bethel Island. Her community is near Discovery Bay and Byron, and many residents and businesses are concerned about all the proposed activity there. The primary truck route that traverses east to Stockton from Antioch, Brentwood and Discovery Bay is Highway 4, a single-lane levee, very old bridge route. There was discussion at the January meeting of possible road enhancements, but it's unclear how that would be possible on a road that has such considerable truck and vehicle traffic on a daily basis. The bridge is not very far above the water, so bridge openings would be required every time a barge needed to pass through.

Mr. Moran reported two events at the Big Break Visitor Center that provided opportunities to discuss Delta Conveyance in general. Approximately 50 people attended the King Tides with the Coastal Commission event many people of them have no idea what is going on. The Delta Protection Commission's Delta Leadership course was also hosted at Big Break Visitor Center and approximately 10 members attended a half-hour presentation and tour about how water moves through the Delta. Those attendees were particularly interested in understanding the reasoning behind having isolated conveyance versus not. Even though they had a lot of information, there was still much that they were able to learn about how water moves through the Delta.

Mr. Hsia met with members of the Locke community who are concerned mostly about construction, especially truck traffic on the aging roadways in Hood, a community with a treasured heritage. He also attended the Walnut Grove public scoping meeting where the Deepwater Shipping Channel was mentioned again. Mr. Hsia thanked DCA staff for responding to his question from last meeting about the Deepwater Shipping Channel. He intends to suggest it as an alternative in the CEQA process.

Ms. Swenson spoke with local reclamation district managers who expressed the opinion that whether the proposed project has two or three intakes, the hydrodynamics of the river would change in ways including reverse flows. Because the intakes would be 3,000cfs, the reverse flows would cause erosion. The levees are currently taken care of is through property assessments of the private lands the reclamation districts oversee. The increase in erosion and the repair of that erosion as a result of increased hydraulics of the river would become the responsibility of the land owners through the reclamation districts' assessments. That would be unequitable, unfair and not something that should be allowed to happen to folks. We have to

understand how the funding works currently to make sure we aren't setting up a system where taxpayers are paying for the construction and also for the ramifications of the construction.

Ms. Barrigan-Parrilla reported meeting with about three dozen local Delta and statewide environmental justice (EJ) organizations. There are still questions about truck trips in regards to the construction schedule. It makes sense that information is being presented from the top down, step-by-step, and only so much can be presented at each meeting. What's going to be happening simultaneously throughout the whole project? A cumulative analysis is necessary to understand the true impact, especially for AB 617 communities in Stockton. There are about 30,000 commuters a day going from Stockton to Sacramento and another 40,000 going to the Bay area. There could be huge economic impacts if there are truck trips generated from concurrent construction of the intakes and the Southern Forebay because truck traffic would be in both directions. Has there been outreach done to COG's for traffic analysis, and what are the real economic impacts? EJ communities are also concerned if there are increased truck, rail and barges out of Port of Stockton, how will that affect Stockton's economic recovery? Looking at what happened here with the arena or any city, major construction closes mom-and-pop businesses. She would like to see the trade-offs because impacts due to increased traffic could offset the job numbers generated by tunnel construction work.

What kind of outreach is currently being done with the Port of Stockton? This project could interfere with their economic development. The Port is expanding its opportunities in other directions.

There are also concerns about harmful algal blooms and stakeholders are looking for answers.

Mr. Cosio reported he meets monthly with about half a dozen reclamation districts (RDs) in the North Delta and said RDs are repeatedly concerned whether or not the impacts of the proposed project are actually understood. Before the SEC process began, Mr. Cosio said he was interviewed by the DCA staff and they knew he testified against WaterFix and all the details discussed during that process. DCA also talked to a lot of other witnesses that were against WaterFix. It was his understanding that these meetings were supposed to provide not only the basics of the design, but also indicate that some of the impacts were understood. In the last meeting the truck trip numbers presented were only for the intakes. When are we going to get the whole big picture of the impacts? DCA staff needs to start thinking outside of the design box. Anybody can design a project, but the key is going to be the impact that project has on the local community.

When dewatering around intakes is discussed, it brings to mind problems that currently exist on the levees and Delta farm ground. Everything is connected by water. There are very porous levees and very porous foundations. Dewatering will cause land movements, just like the San Joaquin Valley groundwater extraction and subsidence. Even individual homeowners' foundations are affected by the underground water levels of adjoining properties. There was a local homeowner on Grand Island whose foundation was deteriorating and the house had to be propped up. An inspection of the homeowner's property revealed that the whole levee was cracking. The homeowner hired a geotechnical expert who said that some eucalyptus trees planted on the property line and up the side of the levee had sucked the water from the ground, causing the whole ground to go down. These types of changes happen fast. This project has deep dewatering planned that will impact the surface. The top layer is sand, then

there is the top level of foundation, followed by a very weak organic layer that is going to start shifting and then there is a layer of sand where a lot of water is under the levees. When you start draining that, it will really impact the surface. This is the kind of thinking that has to go on at these meetings. The questions asked before on WaterFix need to be addressed, because they will come up again. There will be more lawsuits with the same questions, so they should be nipped in the bud.

The response to request for the DWR borings data was that DCA didn't know if the data could be provided legally. Landowners were thrown off by that response because this is supposed to be a transparent process and the data should be provided without a Public Records Act (PRA) request. Hopefully that information will be made available.

Mr. Wallace talked to farmers and other community members about intakes. Since the intakes are an encroachment on the Sacramento River and will change the hydraulic characteristics of the river, how far upstream and downstream will new infrastructure such as riprap or levee raises be put in place? How far upstream and downstream will the levees be affected and what kind of mitigation will be used? How do changes to the East Bank affect the West Bank, and what kind of mitigation will be used? Where will water pumped in the dewatering process go? It can't be drained onto the islands because the drainage on the island is already used by the farmers and they are very much at capacity. The question of dewater and subsidence is a big issue. The Alaska Viaduct Product dewatering caused the settlement in downtown Seattle, not the tunnel process itself. These are the kinds of questions people want answered, and the SEC is the venue to provide them. The DCA should provide SEC members with more than just general public information and vague answers; they know a lot more than they are telling the SEC.

Mr. Wirth works with four environmental groups, two of which are umbrella groups with a broad reach. The general consensus is frustration that the intake locations are the same locations from the previous effort. The terrestrial species stakeholder group during the last effort worked to address the impacts from those placements and it had been so difficult that new experimental techniques were created to try to minimize the impacts. These placements were not selected with terrestrial species in mind. They were not selected with aquatic species in mind, either. The selections were made for engineering and cost considerations. We were told at the first SEC meeting that our fingerprints would be seen all over the final project, but we are starting to believe this was a prescient statement, but not as intended. What is needed is for this committee to be able to shape the project, not leave our fingerprints all over the final design. A true stakeholder process would be looking at the placement of these stunningly environmentally disruptive intakes afresh with the view of balancing and minimizing the impacts to terrestrial and aquatic species and all the other concerns around this table and to have as a mandate whether or not we should even be designing a project that is so disruptive to the Delta.

Dr. Lytle had a number of discussions in his area that primarily centered around the development of the new Eastern alignment. The concept was questioned and it was asked where is the Western alignment. Why is the Western portion of the Delta not being considered for this project? This question needs to be addressed, particularly when there are Congressional representatives that are supporting some type of Western-type alignment project.

Ms. Barrigan-Parrilla said another point of consideration is in infrastructure needed in order to construct the tunnel. As with the WaterFix project, power lines, additional roads, increased barge operations, train terminals, etc. are needed and they all take years to build. Even if permits are granted for the project, that infrastructure will still need to be built. If this committee is looking at total construction impacts, we should be talking about the disruption of developing that infrastructure as well. Whether the tunnel runs through the center and deals with the issue of subsidence or runs through the east and affects more urban populations, the environmental impacts of the needed infrastructure are going to increase across the board.

Ms. Mann read a statement from a member from the Save California Alliance regarding the intakes. The letter expressed the opinion that Intakes 2, 3 and 5 cannot be placed in any of the locations shown on the preliminary drawings. Prior hearings show these agencies can't approve intakes in those locations because it would not be consistent with the public trust doctrine. It is unacceptable to locate the intakes in such close proximity to Delta legacy communities. DWR wants the intakes in these locations only because they claim an existing water right in these locations. DWR needs to put the intakes somewhere else and initiate new water rights in order to do so. When will a realistic consideration of the intake locations occur that includes locations other that what is currently being discovered [sic]?

Mr. Hardesty said conversations have been difficult to start in south county because intakes are so far away and bandwidth is currently taken up by the biop projects in Solano and southern Yolo County. The issues that come into play are hydraulic changes that will take place after the intakes are constructed. Water elevations and water quality are issues of great concern for municipal and agricultural water users in the region around Prospect, Briar and Liberty. Currently those areas are dealing with convergence of substantial acreages in the order of 10-15 thousand acres in Solano County to support these projects. There is not a great deal of love for any projects until these issues get put into the mix for discussion. What are the impacts? How will those impacted be made whole? The technical and engineering information doesn't resonate with the local community.

Mr. Cox spoke to a wide range of people, not just fishermen. Most fishermen asked why have intakes at all? There were seven different plans submitted that would not have taken any water from the Delta, but it seems those plans were not given any consideration. Mr. Cox reported that he happened to have a conversation with person who was a member of the Delta Stewardship Council who was part of the previous project's decision-making process and express the opinion that the current proposed project will not fly because it's the same thing with just a single tunnel. There is still no conformance to laws that initiated all of this.

Ms. Swenson said community members also mentioned levee maintenance and flood fighting. Currently, RD's are patrolling levees on a 24-hour basis, especially during periods of high water. All day long they are driving around looking for soft spots or boils or anything that would potentially cause levee damage or breaks. The concern is that construction will disrupt that process, putting Delta communities directly in harm's way. How will you overcome the challenge of not disrupting RD routine levee maintenance during periods of high flood? How will we mitigate for the required seasonal and annual inspections to ensure reclamation districts are able to keep the community safe?

Ms. Gonzalez-Potter asked if there is a comparison document that compares WaterFix to the new proposed project and highlights the key differences from the administration's perspective and why those changes are being made? This question comes up in a lot of conversations and it is complicated to try to explain to the layperson. Ms. Mallon said the previous project was well documented, while this project isn't yet well defined at this stage of the process. The best description is in the NOP; it is a single tunnel with a capacity between 3,000-7,500cfs.

Ms. Swenson asked some farmers if they'd want to give up some of their prime agricultural land to haul roads in order to provide access to the potential intake sites. It would be great to get a local Delta fish screen expert who actually builds intakes to come talk to the committee.

Ms. Swenson asked Mr. Ryan what was the largest intake facility he has built that utilizes tee screens. Mr. Ryan said there hasn't been a 3,000 cfs tee screen facility constructed. Ms. Swenson asked for the size of the largest intake facility that utilizes tee screens. Mr. Ryan explained the screens themselves are the same size, but the total number of screens is what varies and there hasn't been an intake facility that has put 30 screens together in one structure. The largest diversion with tee screens is around 1,200 cfs. DCA is working directly with the tee screen manufacturer.

Ms. Swenson asked for confirmation that there hasn't been an intake facility with the number of anticipated tee screens utilized in one single intake facility. Mr. Ryan said that for flat panel screens there is a 3,000 cfs facility for an irrigation district up by Hamilton City and a 2,500 cfs intake facility in Red Bluff. Those are the largest intake facilities and they are tens of river miles apart, so they are not in the same proximity.

Ms. Swenson asked if there have been three intakes of a similar size utilizing tee screens within the same proximity. Mr. Ryan said neither screen size has been used at three intakes within the same proximity.

Mr. Cosio said the biggest screen manufacturer around is ISI in Freeport. Mr. Ryan indicated that the DCA is currently working with that manufacturer. Mr. Cosio said Russell Berry, President of ISI, was at the last meeting. Their cylindrical (tee) screens can be viewed at their facility in Freeport or there is one at RD 999 that is about 100 cfs that is pulled out of the water this time of year. Mr. Ryan said Natomas Mutual Water Company also has a set that they can bring up on a hoist and there is also a small tee screen in ISI's yard that can be inspected pretty closely.

Ms. Swenson asked if ISI is a consultant to the DCA. Mr. Ryan said they are not consultants but a manufacturer that he has worked with on several projects all around the U.S.

Ms. Keegan said it might be possible to arrange a tour for interested SEC members. Ms. Swenson said a tour would be great.

Ms. Mallon said a tour would be helpful to see both flat and cylindrical screen types. A trip to Red Bluff would enable members to see a similar size facility. Seeing a launch shaft might also be helpful as well so members can see what these sites look like.

Ms. Mallon followed up on Mr. Wallace's earlier statement and said there's nothing DCA is knows that is not being shared with members. The geotechnical work is a bit behind and dewatering is flagged for follow-up. The intakes discussion was pretty high-level, but the discussions will return as the engineering moves along. The focus of these initial meetings is really the siting and then we will dive deeper into those issues. Members were asked to submit their requests for follow-up so the staff can ensure they all get answered. All questions and requests are logged and DCA will follow-up on them.

Ms. Martinez noted questions that come in between meetings are also being added to the log. If you think of a question after the meeting, feel free to contact us and we will add it to the question log. There may be other committee members who have similar questions and the responses would benefit them as well.

Ms. Swenson noted the presentation said more information would be provided after further study by acousticians. Will acousticians conduct on-the-ground surveys in the actual Delta? Ms. Mallon said the DCA would like to and might need permission to enter some properties.

Ms. Swenson said SEC members would like transparency about how whether the other levees across from the proposed intake sites will need to be raised, widened, etc. This is a big question for Clarksburg, as there are homes directly on the levees across from the intake sites. Ms. Mallon said modelling has not yet been done and asked Mr. Ryan to provide some information about the hydrodynamics modeling that will be done in regards to the intakes. Mr. Ryan said that the modelling of the river is in several steps. The first step is to run a 1-D HEC-RAS model to assess the potential impact of the intake structures on the river and determine significant impact locations, if any. Even if the modelling shows that the impacts are within USACE guidelines, the intention is still to run a minimum 2-D model on the affected areas. That should show where more localized changes are and what impacts might be happening on both sides of the river, upstream and downstream. It takes a while to move through the steps and it is necessary to do the steps in order, with as much definition as possible and in consideration of any alternatives developed in the NOP process, but the team is working to set the stage for that. Sediment management modeling will also be performed later in the process. Three-dimensional computational fluid dynamics modeling will also be performed for the intake structures themselves to study the more specific impacts to the flow streams to ensure there is uniform flow across the screens. The intention is to perform the full suite of state-of-the-art modeling on the river and structure to determine if there are impacts and develop solutions if there are.

Mr. Moran asked if there is a possibility of flows being slowed down due to the project, thereby enhancing flood protection in particular stretches and reaches. Is there a possibility that the project itself could be used as a flood control mechanism?

Ms. Mallon indicated that will all be part of DWR's work in the CEQA process.

Ms. Giacoma met with different groups that mentioned the issues of the aquifers. Farmers and residents in the Delta use well water. Aquifers, with the peat soils, are delicate. What will be the impact of dewatering and excavation on aquifers? Can members have a detailed map identifying groundwater and aquifers in the Delta?

Ms. Keegan said there will be time during breaks to dig deeper into some of these discussions.

b. Basics of Tunnel Drive

Ms. Mallon introduced Katherine Marquez from DWR who is attending in place of Carolyn Buckman. Ken Bodgan of DWR's legal team is also attending and may assist in responding to questions if necessary.

Today's discussion is focused on launch shafts. Launch shaft sites are required about every 10-15 miles for launching the Tunnel Boring Machines (TBM's). Each launch shaft site requires several hundred acres of land for construction. These sites are focal points of delivery, concrete liners that form the interior of the tunnel and also stock piling of the RTM that is created as the tunneling moves forward. The team will provide a brief introduction of what happens at launch shaft sites, data on what liner delivery looks like in order to keep pace with the machine and information on the amount of acreage needed for stock piling. DCA will also share the methodology it has developed for evaluating the location of launch shaft sites and the results of the applied methodology for sites that are within the 10- to 15-mile intervals along both corridors.

Unlike intakes, launch shafts have more flexibility in siting. DCA is eager to hear member input on the ranking methodology and the ranking results. This type of input is the at the heart of why this committee was formed; to leverage Delta stakeholder knowledge and incorporate that input into the engineering work to reduce effects. While the sites have been ranked in general categories of favorability, sites have not yet been selected and will only be selected in consultation with the SEC.

Ms. Mallon introduced the engineers who will be presenting at this meeting. Andrew Finney, Lead Geotechnical Engineer, will start the conversation and discuss what takes place at Launch Shaft Sites and the construction that occurs there. Mr. Ryan, Engineering Manager and Intakes Lead, will go through some foundational informational on traffic counts and drive lengths. That information will set the stage for the siting discussion. Graham Bradner, Levees and Forebays Lead, will cover the siting methodology and results. DCA tries to bring each of the team members that work on different aspects of the job so that SEC members can get to know them and feel comfortable asking them questions directly during the meeting.

At the next meeting, we would like to spend a significant amount of time getting SEC member input on the material presented tonight. We will then discuss the other aspects of the tunnel drive- retrieval and maintenance shafts. If possible, the meeting will also include discussion of any possible uses of the tunnel material, as that drives a lot of the siting. The hope for the siting discussion is that members see DCA's emphasis on logistics. DCA is sensitive to what SEC members are sensitive to, such as truck traffic that comes through the Delta. Relieving the load from roads by using some barging and rail access and balancing the three different ways to move things around would be beneficial in terms of reducing effects.

Ms. Martinez explained that we are refining the process from last meeting so we have time to get through meeting. At the last meeting, questions were answered during the presentation, but that didn't provide enough time to make it through the whole agenda. At this meeting, SEC members are asked to hold questions until the end of the presentations. Notepads have been provided to each member for jotting down questions.

Mr. Finney said the goal of the information he will be presenting is to give an introduction of what is happening at the launch shaft sites. The key components of the tunnel drive were discussed. The Tunnel Boring Machine (TBM) is launched from the launch shaft site and is where the majority of tunnel project activity occurs. At this site, material is removed from the tunnel and brought to the surface. Concrete liner segments that construct the tunnel itself are delivered for placement inside the tunnel.

Mr. Finney showed an illustration of the key components of a tunnel drive, including the launch shaft, maintenance shaft and retrieval shaft. Maintenance shafts are intermediary locations between the beginning and end of the tunnel drive where the TBM head can be inspected. The retrieval shafts are the termination point of the tunnel drive where the TBM is retrieved. Maintenance and retrieval shafts will be discussed at future meetings.

Given the state of technology with tunnel boring machines and the current understanding of Delta soil at the tunnel's horizon, DCA is estimating 10 to 15-mile tunnel drive lengths are acceptable.

The main activities at the launch site are the launching of the TBM, delivery of pre-cast concrete tunnel liner segments, removal of tunnel spoils (RTM), power supply and ventilation and worker and emergency access.

Mr. Finney presented an animation of the TBM, its trailing gear and the process of RTM removal. The RTM is transferred up into the launch shaft and off-loaded onto a conveyor system. The conveyor system moves the material around on the site, taking it through a potential mechanical dewatering system and to a point of temporary stock piling. The animation also showed the delivery and storage of pre-cast tunnel liner segments on the site.

Pictures illustrating launch shaft sites were shown. At the top of the site, there could be a rail link or spur or a barge landing facility, depending on where the site is located and how the tunnel segments are transported. By far the largest area required is the temporary stock pile of the RTM. The acreage shown in the presentation depicts the needs for a 6,000cfs alternative with a single 15-mile drive.

Mr. Finney showed an animation depicting the construction sequence and timing. At the end of six months, the site be prepared, which may need to include ground strengthening at some locations. In certain areas, rail spurs or barge landings may be constructed. At the end of the first year, the raised shaft pad construction would be complete and some of the facilities such as RTM dewatering, contractor's trailers and cement production will be started. At the end of year two, the shaft would be completed, concrete segments stock piles would begin and the RTM stock pile area would begin. At the end of year three, there would be a full stock pile of tunnel segments and the tunneling underway.

The two key components of these sites will be discussed: RTM generation and tunnel segment liner storage. Launch shaft sites are so large because RTM is only generated at these sites, not at maintenance shafts or retrieval shafts. As a reminder, RTM is the material that is removed from the ground as the tunnel is created. It is comprised of clay, sand and silts. It generally comes out of the tunnel as the consistency of toothpaste. It is anticipated that this particular

tunnel boring would be an earth pressure-balance type tunneling machine, but the other alternative is called a slurry tunnel boring machine. Soil conditioners are typically used with earth pressure balance machines to maintain the consistency of the soil. If the material's moisture content is too high it can be dewatered mechanically or physically dried prior to stock piling. It is anticipated there would be a continuous soil and water testing program to confirm the quality of the material for beneficial reuse.

The slide photo shows RTM loaded onto the start of a conveyor system that transports it to a stock pile. In the slide photo it has just rained and it shows material draining off of the stock pile. That would be in a bermed-off, sealed area or the material would be mechanically dried prior to stock piling to avoid that scenario.

RTM drying options include air drying on land or mechanical dewatering. Air drying involves spreading the soil outdoors and allowing it to dry. This option is seasonally affected and is not possible during the winter; it is also land intensive. It is important to note there are a number of measures taken to manage dust and stormwater. No water would be able to leave the site without being captured, tested and potentially treated. Mechanical dewatering spins RTM in centrifuges to remove water. Mechanical filters and belt presses could also be used to reduce the moisture content. Mechanical dewatering can be housed indoors to allow seasonal water content reduction of RTM.

A typical RTM testing plan was discussed to determine whether RTM should be reused or discarded. Samples are taken, logged and profiled, then held in designated zones until test results determine it is safe for use. Depending on test results, material is either released for use or hauled off-site to a landfill.

A number of environmental engineers on the team are currently intensively reviewing the currently available environmental data associated with the soil samples from the 2009-2012 geotechnical investigations. Some of the initial observations indicate that there are background levels of some naturally occurring metals in the area. Some samples indicated that cadmium is slightly elevated, but there are none near the human risk level. There were a few detections of TPH's (Total Petroleum Hydrocarbons) that were probably from leaking underground storage tanks at the surface. There was one detection of a TPH range sample out of all the laboratory testing performed, and additional sampling will be conducted. As part of the geotechnical investigation, just as important is the environmental testing for both naturally occurring TPH's and metals as well as any other potential contamination. DCA engineers are also developing exposure scenarios such as dust and residential construction to ensure there is an understanding of the possible pathways of exposure. They are also developing plans to control RTM particulate matter.

RTM that is determined suitable for reuse can be used in a number of beneficial ways. The primary reuse would be for the Delta Conveyance Southern Forebay embankment. This will reduce the amount of truck traffic in the Delta that would be required for hauling RTM away and importing new materials for embankment construction. RTM deemed acceptable for reuse could also include other Delta conveyance facilities, Reclamation District levee maintenance, other restoration projects in the Delta, land subsidence mitigation projects, road improvements and potential commercial sale.

Pre-cast, reinforced concrete liners would be shipped to, stacked and stored at the site and would be going into the tunnel. They are typically provided and manufactured by the tunnel contractor at a purpose-built facility. Just like RTM, only launch shaft sites (not maintenance or retrieval shafts) require space for liner storage.

Potential Pre-Cast Liner Fabrication sites were identified throughout the Delta. There are a number of facilities that exist in or around Stockton. There are additional preliminary sites where there is potential to develop a pre-cast segment construction yard. For the 6,000cfs tunnel, every tunnel drive needs approximately 50 segments per day to meet the demands of roughly 40ft. of tunnel per day. The delivery options for that number of segments include 25 trucks, 1 rail car or one barge per tunnel per day. While many projects allow the contractor to select the facility in which to cast the concrete segments, DCA's preference is to identify those locations ahead of time so that transportation impacts can be identified and mitigated. Pre-cast fabrication sites are primarily being looked at near rail and barge sites in order to reduce truck traffic and associated impacts such as air pollution.

Ms. Keegan asked if there were any questions on this presentation. Mr. Cox asked about water disposal that is extracted during the dewatering process. Mr. Finney said it would go through an environmental process to determine if the water was suitable for discharge into the river or land applied if that was suitable in certain locations. Mr. Cox asked if the dewatering process creates odors. Mr. Finney said studies will be conducted to determine if any odors are anticipated. The drying process itself doesn't create odors. As to whether the soil would off-gas anything, that question is important and will need to be addressed as it relates to naturally occurring hydrocarbons and/or organic materials. That is part of the environmental sampling that will be conducted. Part of the benefit of using soil conditioners is that water is bound to the soil particles themselves so that things like odors will be less of an issue.

Ms. Barrigan-Parrilla said so much of what has been presented today has already been discussed through CA WaterFix and a lot of soil detail info is being left out, such as methyllization or mercury, soil conditioners, and legacy mercury. Mercury is the primary concern at the State Water Resources Control Board. What can be done with soil to create habitat projects due to legacy mercury? That soil would not be beneficial for species such as fish. Do soil conditioners aggravate the methyllization of mercury? There's also arsenic and chromium 6. It was said sampling would be done, but that was already in the prior Conceptual Engineering Report for WaterFix. More information about mitigation is what is needed from this committee. What is seepage when tunnel segments are put together? What is air pollution from truck traffic and cement construction? Mr. Finney said the logistics part of the discussion will take place later in today's meeting.

Mr. Merlo asked how much noise will be produced by shaft boring process? How many tons of concrete will be poured on the launch shaft site pads? How much peat dirt will be displaced in the process of excavating? When peat dirt is displaced, what mitigation efforts will be made to make sure the peat doesn't increase the asthma problems in the Delta?

Several schools are within 12-15 miles of tunnel shaft pathways. Public health data indicate noise, air and water pollution cause declines in cognitive development and academic performance. Launch shafts could have a significant impact in terms of air pollution and potentially water pollution. What types of mitigation will be provided to schools in terms of

noise, air quality and water quality? Ms. Marquez reminded members that a detailed environmental analysis will be conducted and mitigation measures would be discussed during the CEQA process.

Ms. Giacoma asked about the composition of soil conditioners. Mr. Finney said the products DCA is considering are environmentally-friendly rather than petroleum-based. The soil conditioners under consideration are foaming agents comprised of long-chain sugars. Our environmental review indicates that the materials safety data sheets just say to avoid putting the product directly in your eye, but are otherwise safe for the environment, air, etc. Ms. Giacoma asked if SEC members could have a list of the actual product names. Mr. Finney said a list can be provided, but to keep in mind manufacturers do develop new products.

Ms. Swenson asked how many launch shaft pads are being proposed? Do soil conditioners need to be removed from the soil before it is reused? How do you analyze the cumulative effects of existing chemicals combined with new chemicals introduced into the environment by the project? How is the safety of the soil determined? Mr. Finney said the environmental team includes human health and ecological health risk assessors. Typically, they identify exposure scenarios and then determine if any soil used is safe for the types of scenarios that may occur, such as a home gardening scenario for sites planned for residential use.

Ms. Swenson asked if barge and rail trips could be included as round trips. Mr. Finney noted the preference and indicated the main point was to demonstrate the relative comparison that the same number of segments that take 25 trucks to deliver could instead be delivered by 1 barge or 1 rail car.

Dr. Lytle asked about the concept of tunneling and noted Ms. Mallon was a great tunneller in New York, but has there been anywhere a tunneling project with this magnitude, soil condition, length, etc. has ever been performed? Mr. Finney said there is a list of major tunnel projects that can be provided to SEC members. There are soils unique to this area, but mixed alluvial soils at the tunnel depth are very common in tunneling projects. DCA also conducted an independent technical review from the foremost North American and Japanese contractors who analyzed a balance of schedule, cost and length.

Dr. Lytle said soil conditioners can be a proprietary mix and may contain other ingredients besides just the long-chain sugars. The 2014 studies on RTM indicated there are lot of questions about the quality of the RTM. RTM is a misnomer and “spoils” is more appropriate because it isn’t certain that the excavated soil can be reused. If the soil contains cadmium or arsenic, it can’t be dealt with. The salinity of groundwater is also being overlooked. The groundwater beneath the Delta is saline to highly saline. What is done with saltwater that is brought to the surface? This discussion can’t be blown over because it is an inherently difficult issue to deal with; it has to be addressed, even without considering the concept of environmental impacts. How is this going to be feasible? DCA is proposing a launch shaft site directly upstream of the Stockton intake structure and DCA needs to be aware of Stockton’s sensitivities.

Dr. Lytle noted the NOP mentioned launch shaft sites would be elevated 45 ft on an island, which is a very significant issue. Being able to construct a site like that is very difficult from an engineering standpoint. Stockton’s intake pump station settled over two feet because of muck

soils. During construction, a telephone pole moved outside of their facility moved 13ft overnight. Levees protecting the launch sites, as well as logistical access to them, must also be considered or the entire project could be put in jeopardy.

Mr. Cosio asked if RTM is subject to waste discharge requirements. Even putting this material on the back of a levee creates a situation because the Water Board assumes every drop of water underground is drinking quality. Regardless of what is in soil or water, it will be hard to comply with their requirements. Do you plan to rehabilitate the levees at launch sites and to what level in order to protect construction operations? What goes on between the launch shafts? The original project had dewatering along the pipelines in addition to construction.

In regards to the waste discharge question, Ms. Marquez said the environmental review process will determine what type of permitting will be required. Part of those permits would include a robust sampling program such as the example provided by Mr. Finney.

Mr. Cosio asked if that information would be received because dredge materials haven't been able to be certified for usage on levees. Mr. Finney said the RTM is coming from over 100ft down.

Ms. Tayaba asked if DWR has started consulting with tribes? Launch shafts siting, staging area and levees are very concerning to tribes. Ms. Marquez said that AB 52 consultation letters and other notices were sent out to tribes when the NOP was released. Requests have been received and DWR is currently in the process of setting up those meetings.

Ms. Martinez noted that some of the rich discussion involved comments appropriate for DWR's scoping and encouraged members to submit them in that forum. Questions or comments about alternatives and things that should be studied are scoping comments and need to be submitted to DWR through their scoping process. There are DWR scoping meetings currently in progress. Upcoming scooping meetings include Stockton on February 13th, Clarksburg on February 19th, Brentwood on February 20th and Redding on March 2nd. SEC meetings are focused on construction and construction effects.

Mr. Moran said SEC members have been receiving some information and comments from people but the source is not always clear, such as one that was entitled "Western Delta Intake Concept." How should this information be treated? Mr. Nelson said the information provided was from a member of the public and should be treated as a public comment.

Ms. Keegan recessed for a short break, noting there was food available for the SEC members and then the public is welcome to partake as well.

c. Launch Shaft Siting

Ms. Palmer reconvened the meeting and introduced Mr. Ryan for the launch shaft siting discussion.

Mr. Ryan provided a short orientation to the information provided about logistics and explained to members how to use the Logistics Lookup Tables provided in their packets. As a reminder, there's a substantial construction area required at tunnel launch shaft sites and RTM will be

stock piled. There is also a potential loading and hauling at the site, as well as liner segments being hauled and moved around the site.

One of the factors in determining the sites is transportation logistics. Utilizing rail or barge would divert a substantial amount of traffic off of the roads. One train delivery could deliver as many segments as 25 trucks. As a reminder, the length and diameter of the tunnel dictates the number of liners needed as well as the amount of RTM produced.

A 6,000cfs tunnel moves at about 2 miles per year. The engineering team is looking at drives that are within the 10- to 15-mile range. The total length of the tunnel is about 40 miles from end to end. For that length, there will be 3-4 tunnel drives and 2-3 launch shaft sites needed. The reason the number of launch shaft sites needed is less than the total number of tunnel drives is because one of the launch shaft sites could be used to tunnel in both directions. The information presented is for one launch shaft site. If there is a launch shaft site where there is tunneling in both directions, the information would be doubled for that site. There will also be 2-3 retrieval shafts for taking the TBM back out. Those facilities could be combined as well.

SEC members were provided with logistics lookup tables and an example of one of the tables is also printed on foam board and displayed in the meeting room. There is a table for each of the capacity alternatives: 3,000cfs, 4,500cfs, 6,000cfs and 7,500cfs. Most of what is discussed in the meeting is the proposed project of 6,000cfs. This is preliminary information that provides the tunnel diameter, the speed of tunnel boring, the round trips generated for liner deliver trucks, RTM production, area needed for stock piling at various depths and the transport trips required to haul the RTM away. The transportation calculations are based on trucking, rail or barge. Please note that each of these calculations reflect the number of round trips that would be required if ONLY that mode of transportation was used exclusively and not in combination with other transportation modes. The tables were distributed at the January meeting and the tables distributed at this meeting have been updated. Information is preliminary and will change again because they are updated as more info is available and refined.

Internal diameter is a function of flow. The external diameter is a function of the internal diameter and the thickness of the liners. The speed of tunneling is also tied to the diameter; larger tunnels move more slowly than smaller tunnels. The distance per year is based on two ten-hour shifts, five days per week. Segment deliveries indicate the daily number of segments required based on the diameter and speed. Larger tunnels require larger segments and therefore less of them may fit on a truck. The criteria of deliveries are shown on the table, such as the assumptions trucks would be hauling 10 hours per day at 24 tons per load. Flatbed rail cars are estimated at 100 tons per car, and there are 2,000-ton barges that can go pretty much any location under consideration.

The tables also show RTM production storage and hauling estimates, which also vary based on the capacity of the tunnel and speed of boring. The height at which RTM is piled determines how much land would be needed for stock piling and that is reflected in the tables. If RTM is hauled offsite, there are estimates based off of using 16 cubic yard trucks at roughly 24 tons, or 65 cubic yards per rail car at 100 tons or a 2,000-ton barge at roughly 1,300 cubic yards.

Launch Shaft Logistics Maps were also provided to show areas with favorable access. On the first map, the green areas show areas that are more favorable because they are accessible by at

least two modes of transportation: a road and either a train or a barge. These are sites that have been determined as suitable for launch shafts because they have multiple access.

There is also a map that indicates roads suitable for heavy traffic, even though some road improvements may be needed. Another map shows areas that are reachable by barge. The other map shows the location of railroads and where it's possible to put railroad access. There is an additional map available but not provided that shows barge landing locations.

Ms. Palmer explained that questions would be taken at the end of the next technical presentation in the interest of time.

Mr. Bradner introduced himself and explained the approach and methodology on analyzing potential launch shaft sites. All of the maps and backup data are included in the printed materials in the SEC member packets and made available to the public. DCA would like committee member input on both the approach and results of the analysis at the next meeting's roundtable discussion.

A handout provided and printed as a display board in the meeting room helps explain the siting methodology. There are four major criteria categories: construction considerations, geotechnical/geologic information, property and land use considerations and existing infrastructure. Within each major category there are several sub-criteria. Along with these criteria, there is an importance factor. The criteria rankings are multiplied by the importance factor to provide a total score for each site based on engineering considerations. This is a work in progress and DCA welcomes SCE member input on the importance factors, the criteria and the ranking process.

Ms. Mallon noted that the rankings are just design and construction considerations. Environmental considerations will absolutely be included as well, but DCA's specific task is confined to the design and construction-related criteria.

Mr. Bradner first discussed the Central Alignment. There are a couple of fixed points displayed on the map provided: the intakes on the north end and the Southern Forebay on the south end. The Central Alignment connects those two points together within the NOP corridor. There are some key constraints that inform the process. The sections in grey- Staten Island, Mandeville Island, Venice Island and Bacon Island- are difficult to access. These are areas that don't have barge or access in addition to good quality roads. Since these sites are not being considered, we look at the remaining available areas. There is a potential 5 to 10-mile drive zone between the area north of between Staten Island and the intakes (Launch Site A) and a 10 to 15-mile potential drive zone between the area north of Staten Island to near Bouldin Island (Launch Site B). It is assumed that a launch shaft would not be constructed at the intakes, so driving from Launch Site A to the intakes is the only conceptual option for the Central Alignment. For the tunnel between Launch Site A and B The difference between the two sites is that on Bouldin Island the tunnel drive could go in either direction; the tunnel could be bored from the north down to Bouldin, or from Bouldin up to the north. Down at the Southern Forebay the tunnel could be driven north up to Bouldin, which would require a launch site down near Clifton Forebay that would generate a lot of potential material that could be used for construction of the Southern Forebay embankments. One advantage of Launch Site A is its close proximity to the rail line that is just on the other side of I-5. One advantage of Launch Site B is that driving

up from the area of the Southern Forebay would provide the opportunity to potentially use 100% of the RTM.

The site rankings were then presented for the Central Corridor's Launch Site A and Launch Site B. A map of Launch Site A was shown with a color-coded depiction of roughly 250-acre plots of land within the NOP corridor ranked according to the main criteria and sub-criteria and weighted by the importance factors. Grey areas represent areas not under consideration because they did not pass initial criteria. Green represents more favorable areas that scored between 4-5 according to the ranking criteria, yellow represents acceptable areas that scored a 3 and orange represents less favorable areas that scored a 1 or 2. Each land block was screened and scored using this method. For example, on Launch Site A, all the sites are colored orange on the criteria for Proximity to Barge Routes. Proximity to Existing High Voltage Substation and/or Existing High Voltage Transmission Lines are also orange and not a differentiating factor for the blocks of land within Launch Site A. What is a factor in this case is proximity to road and proximity to rail. Both criteria are heavily weighted in the ranking process, as indicated by the importance factor.

As noted in the ranking table with an NA in the Importance Factor column, there was a pass/fail criterion applied for Access Suitability for Driveshaft Construction. If the site did not meet that initial criterion, it was not screened for further suitability. There are other pass/fail criteria within the property and land use category, such as conservation land, refuges, preserves and critical habitat. Any blocks landing on those types of land uses were removed from consideration and were excluded from the scoring and depicted in grey on the map. Only the sites ranked for consideration are shown; sites that are grey on the map are therefore not shown on the ranking chart.

With this methodology and ranking applied, Bouldin Island in Launch Site B is not ranking any sites in green for the final ranking because of geotechnical data and the different modes of access are not as readily available.

In regards to the Eastern Corridor, the major constraints are also on the corridor map. There are greyed out areas showing Cosumnes River Preserve and Rindge Tract. Rindge Tract doesn't meet the criteria for access or requirements for a large construction project. Considering the drive distances, a 10 to 15-mile drive puts a potential Launch Site A south of the Cosumnes Preserve down through Canal Ranch near the bottom of Brack Tract. Launch Site B is down on Lower Roberts Island and a little bit into Jones Island, and is about a 10 to 13-mile drive zone both from Launch Site A and the Southern Forebay. Similar to the Central Corridor, there is an option of tunneling north from Launch Site B, generating more material at Launch Site B, or tunneling south from Launch Site A, generating more material at Launch Site A. The tunneling from the Southern Forebay would progress from south to north, as would the tunneling from Launch Site A to the intakes.

Mr. Bradner reviewed the color-coded ranking maps for the Eastern Corridor. For Launch Site A, road access and firmer ground conditions influenced the final rankings in the Eastern Corridor.

Eastern Corridor Launch Site B has rail access and existing infrastructure that rates some areas as more favorable, but the geological/geotechnical conditions indicate there is some degradation of the soil in that area.

Ms. Palmer asked if there were questions.

Ms. Barrigan-Parrilla asked who is responsible for the weekly spoils reporting during construction. Ms. Marquez said what was mentioned earlier was an example of a type of sample program that would be implemented. The permitting process and environmental process will determine the actual time frame for sampling and submission of the data. DWR will be owner and operator of the project and will be responsible for compliance with the permits.

Ms. Barrigan-Parrilla asked if DWR would be putting up the data for the public to see. Ms. Marquez reiterated that the reporting program has not been determined yet, but suggestions or questions regarding this matter should be submitted as a scoping comment. Ms. Barrigan-Parrilla said she has had to submit a PRA to obtain data owned by DWR presently. The data was not made available upon request to Region 5 of the Central Valley Regional Water Control Board. A specific answer about harmful algal blooms (HABs) data accessibility to the public and frequency of reporting is requested. Not getting access to this data causes skepticism in the community.

Ms. Mallon said that legally-allowed data will be made available. Environmental tests come in hundreds of lines of "ND," but DCA will do what it can to make that data available during construction, but that is years down the road. Ms. Barrigan-Parrilla asked that data would be reported out for ease of accessibility. Ms. Mallon said this is the kind of thing as an SEC we could consider. Ms. Barrigan-Parrilla suggested an ombudsperson who makes the data accessible in real time so community groups do not have to go through a PRA and so there is proper oversight.

Ms. Barrigan-Parrilla asked how many miles it is from the Eastern Corridor's Launch Site B to the Port of Stockton. Mr. Bradner estimated it is about 3-4 miles away.

Mr. Barrigan-Parrilla asked if there has been any analysis on how far away the top end of Launch Site B is from urban housing to the east and north. Mr. Bradner said the screening process did consider sphere of influence maps published by each of the cities, but the analysis was at a pretty high level. Ms. Barrigan-Parrilla said anything this massive that lines up on the Eastern Corridor should be made available.

Ms. Swenson asked if the project is a 20-year build because the tunneling speed is 2.2 miles per year and the tunnel is about 40 miles long. Mr. Ryan said there are 4 tunnel drives and the longest potential tunnel reach is 15 miles, so the tunneling time would be 7.5 years. There would be more than one TBM running at the same time on each of the reaches. Ms. Swenson asked if members would be getting a cumulative analysis of noise, air, water, etc. for multiple TBM's running at the same time. Ms. Mallon said a cumulative analysis would be possible once the components are sited and it is determined whether materials are coming by road, rail or barge.

Ms. Swenson asked if conveyor belts will be moving RTM across farmland to the drying areas. Mr. Ryan said sites have not been selected yet, but conveyors may be considered for some of the sites to move material from the site to a rail siding, for example.

Ms. Palmer asked if a there would be two TBMs going in opposite directions from the same launch shaft at the same time, or if the machines would bore one after the other. Ms. Mallon said they would go both directions, but one after the other (i.e. not start at the same time).

Ms. Swenson asked if the build is still anticipated to be 13 years. Mr. Ryan said that is still the approximate estimate.

Mr. Robertson asked what is the anticipated labor load for each shift and the plan for caring and feeding. Ms. Mallon said data will be provided to answer this question, but personally she thinks food needs to come to them, but that will all be part of the detailed logistics plans.

Mr. Cox asked how close this construction is to residential areas and raised the point of noise for 20 hours per day from truck traffic and construction, leaving only four hours per day that nothing is going on. Mr. Ryan said that the two 10-hour shifts is only for tunnel drives and not at the surface facilities, which will likely be one 10-hour shift.

Ms. Mann said for 15 years it's going to be miserable.

Mr. Hsia noted that when barges go through, bridges need to open. Is it feasible to use barges at all, since opening the bridges stops the traffic in both directions? Mr. Bradner said that bridge crossings are a factor for consideration when discussing barges.

Mr. Wallace asked if new rail siding would be needed on existing rail lines if rail is used, or will DCA build a spur to the launch sites? Mr. Ryan said probably both. The way the railroad company wants to work is to leave cars on the siding and then construction contractors have their own mini-railroads where they pull the cars off and either empty or fill them and return to siding, and then the railroad picks them up on the siding and takes them away.

Mr. Wallace asserted that the project will be subject to the Federal Railroad Administration (FRA) if spurs are built, meaning it is subject to NEPA and can be discussed by the SEC because it is not CEQA. Ms. Marquez said that, as noted in the NOP, the project will need to go through the NEPA process. Once the lead agency has identified, it will be initiated with a Notice of Intent. Mr. Wallace said FRA has its own NEPA requirements that aren't necessarily the same as the Bureau of Reclamation or the USACE or USDFW.

Ms. Mann asked if tunnel boring would be in a straight line and asked about natural gas and water pockets. How are those avoided? What happens if you accidentally pierce one? What effect does that have on the employees underground? Mr. Bradner indicated in the siting study there are considerations for existing gas wells and gas production zones with the intent to rank and evaluate all known information. Mr. Finney said there will be an exploration program that determines and detects if there are buried or abandoned wells for water, natural gas and oil before tunneling takes place so they can be removed ahead of time. Natural gas is down thousands and thousands of feet, but wells are an important part of risk mitigation.

Mr. Moran asked about ventilation in the tunnel. Mr. Ryan said ventilation primarily comes through the main shaft, but the next SEC will discuss maintenance shafts.

Mr. Moran asked if the top of the tunnel is about 100 ft below surface, will these depths still be in the range of human habitation considering the deposition of the Delta over the years and sea level rise?

Mr. Cosio said on Central Corridor Launch Site A would impact permanent crops in Glanville Tract and New Hope Tract, whereas on Staten Island there aren't permanent crops and there's a levee that needs a lot of dirt. That's one area where the RTM could actually be taken from the shaft to the levee and there is a favorable landowner there that could probably use a lot of your RTM.

Mr. Wallace asked how first responders would be informed of all the construction. How would volunteer fire departments in Courtland and Hood respond to something that happens 190ft. underground? Ms. Marquez said the CEQA process will evaluate different public services throughout the Delta. Mr. Ryan said that because of the lengths of the drives, contractors will hire first responders that will be on site as a part of the office complex. Ms. Mallon said there are requirements in the Independent Technical Review (ITR) report for response time. If first responders can't be provided within a certain time frame, first responders are required on site. Depending on which site is selected and its access corridor, there is a possibility that has to be maintained on site.

Dr. Lytle said it would be helpful to understand how tunneling operates in regards to potential for seismic issues due to the tunneling and the motion of the drives. What is the subsidence potential for hitting various unknowns such as sand lenses? It would be helpful to understand what tunneling does in an unconsolidated soil type. Also, what is the seismic vulnerability of the tunnel itself? The Delta is a highly susceptible seismic area. How is the lining of the tunnel rated on seismic strength?

Mr. Wirth said this process provided a geography from which the SEC members were asked to work, but can the SEC members provide the criteria they find important and have DCA perform additional studies to determine how that geography might change through refinement or by shifting the priority levels? Ms. Mallon said it's exactly what DCA is looking for.

Ms. Mallon reviewed some topics that are for SEC consideration. The engineering planning process is to come up with a set of criteria for evaluating options and alternatives and then apply those criteria to those options, and that is what DCA has done. The process has been very transparent as to the methodology, how it was applied and the results. SEC members are invited to look at DCA's process and provide input on the methodology. If members have insight into other criteria, weighting factors, how the criteria was measured or the ranking process, please provide input. If DCA can use feedback to rescore, we can look at it and provide updates based on your input. Please also take a look at the color-coded results of the analysis and determine if it makes sense to you in terms of how you think about siting facilities. The logistics tables provide considerations such as how the height of the stock piles affects the amount of space needed, or how driving the tunnel in two directions at once from the same launch site would double the requirements. We've provided all the tools DCA uses to conduct

assessments and we would like your feedback. If you need help on developing your analysis, please send in your questions and we'll respond as quickly as possible.

Ms. Marquez noted that the information provided is a preliminary screening of launch shaft site locations and there is a full environmental analysis that will be conducted and may shift the exact location. In order to do the environmental analysis, it is necessary to narrow down the areas under consideration.

Ms. Swenson said she has flash drives of the meeting videos and can provide the file to anyone in the Delta who needs them since the internet in the Delta can make it difficult to view the meetings.

Ms. Mann asked if the committee should also be considering different sites for the intakes. Ms. Marquez reminded members the scoping process is currently underway. If there are suggestions related to alternatives such as alternative locations for the intakes, that comment can be submitted as a scoping comment. There are quite a few constraints that determined what intakes were listed in NOP.

Ms. Barrigan-Parrilla asked for the sphere of influence studies that DCA used in order to do this work. Mr. Bradner said DCA was able to obtain those maps from cities including Stockton, Traci, Lodi and Elk Grove. They are publicly available. Ms. Barrigan-Parrilla said to never mind the request since the studies were the sphere of influence of those cities and not of the project.

Ms. Giacoma asked for the ITR assessment results. Ms. Mallon said results are on next DCA Board meeting agenda and will she will ensure the report makes its way into the SEC meetings.

Ms. Palmer opened public comment for agenda items.

Osha Meserve, Local Agencies of the North Delta, said the answers being provided in the question tracking log are not accurate. Question 40 discusses availability of geotechnical data and said the Administrative Record for WaterFix was prepared, insinuating that material is available. However, the WaterFix Administrative Record was never completed and the litigants only received an index. The information is public and should be provided if SEC members are requesting it.

Additionally, an answer provided says that well data is private information, but DWR keeps a database of well data. There may be certain parts that are private, but there is a database it was required by SGMA that it be made public.

Question 52 says that the screens are designed to exclude smelt. This answer doesn't disclose that the project would take or kill smelt, and that is misleading. It also says that they can't have screens at the south Delta facility. This answer fails to recognize that the biological opinions actually include studies that need to be prepared in order to minimize or reduce takes in the South Delta. It may not be screens, but there are other measures that are available.

Question 59 says intakes are being designed for gravity flow, but that doesn't seem correct because there are pumps at the south end.

There was a question about the potential for the intakes to control floods. If there are to be some local benefits to this project, that should be up for discussion in this committee about whether it might be possible to help control flooding with intakes.

Matt Conover, RD 1002 and John McCormack Company, said there are 5,000 acres and 52 land owners in the area where the Launch Site is being considered, which will cause social and economic impacts. The Cosumnes River is the last undamned river in California and environmentalists have prevented a flood-control damn higher in the canyon. In 1996, it flooded 15 feet deep and lasted for months in the area where you want to have a staging area. You need to build high levees. We currently have 18 ft. levees and the instrumentation gauges forecasted up to 20 feet a few years ago which would have washed any cars over the top in two feet of water. If you're going to have big launch shafts with bore holes 50 feet wide, the design needs to include flood gate doors over the top of the shaft in case the levees break as they've been rumored to do three times. There were three evacuations in one season. The Nature Conservancy has told the Delta Stewardship Council that their plan is to break down our levees and flood us out all the way up to Delta Shores Mall by south Sacramento.

5. PUBLIC COMMENT – NON-AGENDA ITEMS

Ms. Keegan opened public comment for non-agenda items.

Robert Swenson, Agricultural Intern and junior at Delta High School, said he has lived in Clarksburg since the fifth grade and the Delta is his home. Friends, neighbors and the community helped shape him into the adult he is becoming. Members of the community created a youth group to promote honesty, hard work and integrity. The people of Clarksburg are there in times of need and that the world is not a lonely one.

Mr. Swenson would like future generations to have the same experiences he had as a child; a nurturing community that helps positively shape children at critical times. Plans to create the tunnels would deter members of the community from being able to remain here. It would destroy the bond the people of Clarksburg and the people of the Delta have with one another by creating unlivable conditions, dewatering, increased air pollution, increased construction traffic, increased noise pollution and loss of prime agricultural land. Not only has this community been supportive, but it has taught so much.

Mr. Swenson shared that he has interned for local intergenerational farmers that have taught him about farming in the Delta. Knowledge of the farmers is unbelievable and is the result of generations of family farming here. The wisdom they bestowed was once bestowed upon them by their mentors, bosses or family members. However, Mr. Swenson said his generation could be the last generation with a personal connection to farming in the Delta because of this project. Delta farmers cannot continue their livelihoods if they are impacted by building process for 13 years. That is a long time to expect farmers to wait to come back to their historic land. The Delta's young people are at a serious risk of losing the opportunity to learn from the farmers and continue the honorable tradition of family farming in the Delta. Alternatives to taking away prime farmland should be considered.

Tim Newhearth, local resident, thanked the chair for the opportunity for community members to provide input. Regarding the SEC's purpose, for stakeholders to provide technical and engineering

input related to DCA's current activities. Any technical endeavor has to include a cost analysis, but cost has not been discussed tonight or any time. A figure of $12 billion was mentioned the other night at a different meeting, but that seems like a ridiculously low figure. What are you considering for cost? We have seen a multitude of different aspects of the project considered here tonight, and that's just a drop in the bucket. We've talked about roads, boring shafts, pads, dewatering, etc. Just how much will each of these aspects cost? Who has done a study of cost overruns general amount to in the state of CA? We have the High-Speed Rail that has gone astronomically over budget and time, the Bay Bridge is now tenfold over original cost. Feasibility studies have to include cost analysis that are reasonable and consider overruns because of the general nature of overruns on large construction projects.

Malinda Terry, Central Valley Flood Control Association, said she is skeptical about whether the input provided here actually changes the design, but appreciates the opportunity to provide input. Methodology and criteria should include looking at land owned by DWR and Metropolitan Water District. Seismic issues could be a big issue with a boring machine, pile driving for more than 20 locations, dewatering and truck traffic that creates vibrations. There are cumulative impacts of construction. Even if we are confident levees will hold during an earthquake, construction is an extended period.

6. FUTURE AGENDA ITEMS

Ms. Palmer provided an overview of the next SEC meeting. We will have a member roundtable on tonight's presentation and discuss Retrieval and Maintenance Shafts.

Ms. Martinez reminded SEC members about prompts for the next meeting's roundtable discussion and reminded members that staff is always available between meetings to answer questions.

Ms. Palmer noted the SEC member input was very much appreciated.

The next SEC meeting will be Wednesday, February 26, 2020 at 3pm at Belle Vie Vineyards, 19900 Sherman Island Cross Rd., Rio Vista, CA 94571.

7. ADJOURNMENT

Ms. Keegan adjourned the meeting at 6:08pm.