

San Francisco Bay Conservation and Development Commission

455 Golden Gate Avenue, Suite 10600, San Francisco, California 94102 tel 415 352 3600 fax 415 352 3606

TO: All Financing the Future Working Group Members
FROM: Lawrence J. Goldzband, Executive Director (415/352-3653; larry.goldzband@bcdc.ca.gov)
Steve Goldbeck, Chief Deputy Director (415/352-3611; steve.goldbeck@bcdc.ca.gov)
SUBJECT: Approved Meeting Summary of January 4, 2018 Financing the Future Working Group Meeting

1. **Call to Order.** The meeting was called to order by Acting Chair Zwissler at the Bay Area Metro Center, 375 Beale Street, Ohlone Room, First Floor, San Francisco, California, at 10:38 a.m.

2. **Roll Call.** Executive Director Goldzband welcomed attendees: Welcome. I am Larry Goldzband the Executive Director of BCDC. We have a number of new faces in the room. We have three Commissioners here right now plus an ECRB Board Member and a couple other folks on the Working Group. There are several members of the Working Group informed me that they could not be here because they have contacted this flu that is going around.

Acting Chair Zwissler spoke: Good morning. Our tradition has been to quickly go around the room and introduce ourselves. (Attendees announced their presence and affiliations)

Executive Director Goldzband commented: Mr. Jesse M. Keenan is with Harvard University, Center for the Environment. He will be with us telephonically today. Jesse has been working with Nuin-Tara Key. A few of us met Jesse a couple of months ago when he was here. He has been remarkably successful and busy on the East Coast, especially in the tri-state area dealing with resilience issues and financing.

Present were Group Members: Acting Chair Alex Zwissler, Commissioner Kathrin Sears, Commissioner Patricia Showalter, ECRB Member Robert “Bob” Battalio, Mark Northcross and Michael Paparian.

Not present were Group Members: Chair Zack Wasserman, Commissioner Geoffrey Gibbs, Commissioner Jennifer Lucchesi, Commissioner Aaron Peskin, James “Jim” Cervantes, Justin Cooper, Roger Davis, Jeff Holzman, Paul Rosenstiel and Chad Spitler.

info@bcdc.ca.gov | www.bcdc.ca.gov
State of California | Edmund G. Brown — Governor



FINANCING THE FUTURE WORKING GROUP MEETING SUMMARY
January 4, 2018

BCDC staff members present were: Executive Director Larry Goldzband and Adam Fullerton.

The audience included: Kathy Schaefer, U.C. Davis, Joe Tootle, ENGEO, Nuin Tara-Key, Governor's Office of Planning and Research, Deborah Halberstadt, Ocean Protection Council, Jen Eckerle, Ocean Protection Council, Paul Okada, San Mateo County, Jenna Judge, NOAA, Becky Lunde, NOAA, Sarah van der Schalie, NOAA, Jesse M. Keenan, Harvard University/Center for the Environment (via phone) and Bob Spencer, Urban Economics.

3. **Approval of the October 19, 2017 Meeting Summary.** Acting Chair Zwissler stated that the Meeting Summary was incredibly comprehensive and he was thankful for this. Ms. Kathy Schaefer made a minor correction to the Meeting Summary. On page 10 she stated that "state law" should be changed to "staple". The Meeting Summary was approved with the correction being noted on the record.

4. **Briefing on the Integrated Climate Adaptation and Resiliency Program (ICARP) of the Governor's Office of Planning and Research (OPR) and Ocean Protection Council's adaptation financing efforts and discussion of potential collaboration.** Acting Chair Zwissler continued: At this point we will come to Agenda Item 4 which is our briefing on the Integrated Climate Adaptation and Resiliency Program (ICARP) of the Governor's Office of Planning and Research (OPR).

Ms. Nuin-Tara key presented the following: I was here in July and gave an update on the program, our Adaptation Resiliency Program out of OPR and some of the work that we were doing getting started on the financing side of things.

We are still in the early stages but we wanted to provide an update on our work and where we have progressed since the summer and also discuss with you opportunities to connect and use the work that has been coming out of this group and also the Resilience by Design effort as well and thinking about coordinating our efforts as we move forward.

Our Integrated Climate Adaptation and Resiliency Program or ICARP was established through legislation, Senate Bill 246 and the intent of the program is to better coordinate state, local and regional efforts around adaptation and resiliency with an eye towards supporting local implementation and identifying where there are challenges and where there are opportunities to move local implementation on resiliency forward.

There are a couple of crosscutting objectives that are called out in the legislation. One is advancing equity and environmental justice within the context of our adaptation work and the second is supporting an integrated approach to climate change.

We are looking at, how do we leverage our mitigation and adaptation efforts as a cohesive and a body of work around the state's efforts on climate change.

There are two programmatic elements as established through the enabling legislation. The first element is the creation of an adaptation clearing house. We are working with U.C. Berkeley on this. We are looking for the clearinghouse to support a community of practice by providing resources around best available science, research, decision support tools as well as case studies around how locals are starting to implement activities.

The second element of the program is a Technical Advisory Council. The Council brings together some state agencies as well as local, regional partners and community-based organizations and the private sector to help us identify where are these challenges to implementation on the ground and what are some of the efforts that we can be moving forward to support unlocking some of those challenges.

The program just launched in 2017 and we had our first Council meeting in March. It was very clear at that meeting that the challenge of not having secure funding or financing to support adaptation in planning and implementation was a significant barrier to local and regional jurisdictions.

Some of the key preliminary findings that have come from some of the surveys of local jurisdictions around the state have been listed. They cover where there are challenges related to financing.

We are looking at limited resources for working across jurisdictions and the need for better governance around financing and adaptation, limited opportunities to grow funding as well as limited flexibility with existing funding sources and trying to piece together on the adaptation side needing to work across sectors and across jurisdictions and the challenges of the existing funding streams.

We have been working on a few key areas at OPR on our financing efforts. The first one is in coordination with Jesse Keenan who has very graciously offered to help us with some of our research around the financing side.

We are looking to fill out a framework that will help local jurisdictions understand the financing and funding mechanisms that are out there and trying to establish common definitions and a body of information for local jurisdictions around financing and funding.

We are also looking at examples of successful implementation and how the financing and funding worked on that.

We have also been working with the Federal Reserve Bank to host a series of meetings around the state to inform the research and to get a better sense of what some of the challenges are as well as opportunities for overcoming the challenges and looking at the convening's as an opportunity to bring multi-sector perspectives together to help us think through the solutions to the complicated challenges.

OPR has been a partner on the SB1 adaptation planning grants and the ICARP program that was written into the grant guides and we have been working very closely with Caltrans to identify the lessons learned from this first adaptation planning specific program and funding coming from the state.

The intent for the financing framework is to lay out information with local jurisdictions as the key audience. The information pertains to the types of mechanisms, financing and funding mechanisms, and looking at opportunities for emerging products.

We are looking at a survey of underwriting criteria and metrics looking at quantifying co-benefits and tradeoffs and being clear about how different funding mechanisms will enable people to make decisions.

We are looking at a general overview of stakeholders and the roles that they might play. One of the things that we are very interested in is looking at the partners that need to be at the table to make different funding and financing mechanisms work, how do you leverage different stakeholder roles and also thinking a regional or more landscape scale; the importance of thinking of financing at that scale rather than just individual jurisdictions.

The last point here deals with mainstreaming on adaptation and financing and looking at how our existing revenue can be used effectively.

One of the points emerging from the research is that the majority of jurisdictions are currently paying for adaptation and resiliency work through state or federal grants or one-time awards from philanthropy. They really are not piecing together sustained, revenue sources. This is not a very secure way to continue funding and financing adaptation. We are asking, how do we transition into recognizing the benefits from existing funding streams?

Group Member Mark Northcross asked: You were involved in evaluating adaptation planning grant applications for SB1. This is a really important job and it is a cutting-edge thing. Could you comment on what that it was like, what the criteria were and how you made your decisions?

Executive Director Goldzband added: Let's take a step back. SB1 was approved last legislative session and part of SB1 includes planning grants which are separated into a bunch of different types of planning grants. One of those types is dealing with adaptation.

That was done at the behest of the Natural Resources Agency. That was done at the behest of a bunch of us who need adaptation money. Caltrans did not need a lot of convincing because they see the issue.

There was a pot of money provided.

Ms. Nuin Tara-Key explained: It was 20 million for the adaptation grant and it was a one-time grant. It is to be expended over three years. We just made the first round of awards in December and we are moving into the next round.

Executive Director Goldzband asked: And how much money was actually granted during this first round?

Ms. Nuin Tara-Key answered: Seven million was granted.

Executive Director Goldzband continued: So, you are sort of dividing it into thirds. I just wanted to make sure everyone was aware of that.

Ms. Nuin Tara-Key stated: This was a statewide contest. We heard from the local jurisdictions on the importance of thinking about adaptation and resilience and the important partnerships involved and collaboration in identifying solutions. We need to be working at that landscape scale.

This was one of the requirements in the grant application to demonstrate strong partnerships and collaboration beyond just one, single jurisdiction.

A number of the very strong grants demonstrated strong commitments to collaboration and working across that scale.

One of the other things that we were looking for was incorporating a clear transportation nexus in order to qualify for SB1 grants. We also had to figure out how transportation planning connects and links to other local planning efforts.

We were looking at how to leverage the SB1 transportation dollars making sure we are not siloing our efforts across one sector.

A number of the grant applications did demonstrate collaboration among jurisdictions.

Mr. Bob Spencer with Urban Economics asked: What did you see as to where the activities were focused across the types of adaptations for climate change?

Ms. Nuin Tara-Key explained: Some of the ones that stood out were applications focusing on building capacity. They were looking at how to provide tools and resources to build beyond local jurisdictions. There were a cluster of grants looking at providing tools such as research on vulnerabilities region-wide, looking at establishing set criteria or evaluation metrics relative to adaptation and providing that as a resource to jurisdictions within their regional purview.

There was also a lot of focus on local, hazard mitigation plans and similarly; meeting SB379 requirements. SB379 requires local jurisdictions to incorporate climate considerations into the general plan, into the safety element.

Mr. Spencer observed: If it's the transportation nexus around the Bay there is an obvious nexus. I am trying to get at how much of this was sea level rise focused and where is the transportation nexus to adaptation in the Central Valley?

Ms. Nuin Tara-Key replied: Extreme heat and transit service was an issue in the Central Valley looking at providing transit service and thinking about some of the design characteristics of transit in the context of extreme heat. They looked at transportation connections to cooling centers and making sure you have transportation to critical infrastructure during extreme heat events.

In the Bay sea level rise was one of the major impact areas that grantees feared in this region.

Mr. Spencer asked: Are there geographical requirements on the distribution of grants?

Ms. Nuin Tara-Key replied: No. In the guide there is not a threshold of certain amounts going to specific geographical areas.

Ms. Kathy Schaefer had questions: Is the survey that you referred to the one that was done by Mosher and Associates?

Ms. Nuin Tara-Key answered: Yes.

Ms. Schaefer continued her inquiry: Is that report out yet?

Ms. Nuin Tara-Key answered: No. It will be out as part of the fourth assessment which will be coming out in August.

Ms. Schaefer continued: You talked about a survey of underwriting criteria and metrics. When you talk about underwriting what is the criteria?

Ms. Nuin Tara-Key replied: I am going to let Jesse answer this question. I will defer to him.

Mr. Jesse Keenan commented: Looking within the muni-bond world as well as some structured, debt products and looking at certain modifications that are somewhat emergent and ranges of probabilistic and non-probabilistic assessments associated with investment return analysis; most of this is primarily oriented at the infrastructural scale and not something oriented towards social service delivery.

The primary orientation now is within mainstreaming or more conventional understanding of a development, economics point-of-view in terms of debt and also a type of proxy-equity underwriting analysis in terms of investment return.

Executive Director Goldzband paraphrased Mr. Keenan's commentary: Let me see if I can put that in less-financing and more English and policy. The key here is to try to figure out how you marry or integrate a new way of looking at risk which is probabilistic and which in California's case you take a look at the recent science that came out last year and says, there is an incredibly low but possible chance that we have 10 feet by 2100; but how you integrate a probabilistic set of factors into an existing kind of financial structure or how do you then take something that is probabilistic and do inter-generational finance in a different way to account for the different types of scenarios which are very wide and disparate?

Mr. Keenan stated: Yes, that is right. (Laughter) I would say that the caveat here is exactly that which is that, it's not just probabilistic but it is also the deep uncertainty associated with the tails in the distributions. And that is where the inter-generational aspects of judgement come into play in terms of investment and association of risk.

Some of this is probabilistic; a good bit of it in many cases is non-probabilistic.

Executive Director Goldzband added: Kate Sears from Marin County is nodding her head because a year ago we were in your office with your CAO and your CFO and we talked through this. You are looking at Bay and ocean and different scenarios. Marin only has muni bonds.

Group Member Sears stated: We did not like where that conversation went. (Laughter)

Mr. Keenan added: I can tell you that in many counties around the United States they don't want to be on notice of that conversation for obvious reasons.

Group Member Sears replied: We are very brave in Marin. (Laughter)

Mr. Keenan continued: It is a difficult conversation to have with people because once you start it you can't hide that knowledge information and note it.

Group Member Bob Battalio commented: From my perspective as a civil engineer working with communities it is my opinion that we really do not know how to adapt. Specifically we don't know how to compare some equity like natural resources, recreation access; the equity of people who do not live on the coast to be able to go to a beach or something like that versus our more traditional approach which is looking at property and built assets, infrastructure and storm damage happens once in a while versus also the progressive sea level rise, coastal erosion, shore migration problem and part of that is, how do you finance it? I keep bringing this up because every time I sit in a meeting and start listening to people it seems like at some point, we're some of us and not you guys but still talking about protecting things in place.

I want to reiterate that if the state could help define some sort of framework where we can compare the value of a beach, the value of wildlife, access and that value to people throughout the state to the property, infrastructure right on the coast. You could call that a social justice issue.

It is really important and that is what we need and then, how do you finance it? Nobody wants to go down the road to try to figure it out. It devolves into, how big of a wall do we need and who is going to pay for it? This is not a sustainable approach in my view.

The other thing I wanted to mention is, when I looked at the interim guidance for sea level rise that the state has put out and I went back and looked at the safeguard in California; there is this mention of protecting vulnerable communities and I think that means those communities that don't have the financial wherewithal or otherwise disadvantaged. The word, "protection" kind of rings some alarm bells. If you look at the Coastal Commission's guidance there are different adaptation strategies one of which is, protection, which again, is a rigid wall protecting things in place.

When you have a progressive hazard, a wall does not necessarily protect a community. It creates a latent future problem like the Ninth Ward in New Orleans or something like that where you get to a point where you can't move people because they have nowhere to go or they are invested in a place that is not sustainable.

The word, "protect" really makes me nervous in that context. If the state could clear that up it would be helpful from an engineering and municipal planning perspective.

Group Member Northcross commented: I like what Bob said. In the RBD Resilient-by-Design, design team process this question of putting people away from the Bay or putting people towards the Bay has really risen as being a threshold, visceral issue.

Ms. Schaefer commented: This is also getting to the issue of residual risks as well which is a whole other issue.

Executive Director Goldzband chimed in: Jesse I am not sure that you heard all of what Bob said but the gist of it is, the word, "protection" implies that you keep stuff in place. How are you viewing that on the East Coast and is it simply different given the fact that you've had the storms and people have suffered through them?

Mr. Keenan replied: I would draw the reference not exclusively to the East Coast but within the reference standards of the IPCC. What you are referencing there in terms of protection is primarily oriented to what we know as engineering resilience which does operate to the domestic, status quo and certain elasticity operations for maintaining the status quo.

That should be drawn in distinction to transformative, socio-ecological adaptation. Those represent synergies of conflict but there are formal analytical definitions and models within civil engineering that do draw those distinctions. Unfortunately there has been a certain conflation of resilience and adaptation and there are about seven primary types of resilience that are single equilibrium; that is, preserving some measure or protecting some measure of the status quo and those that are perhaps more transformative and closer to dynamic states associated with adaptation. There are actual objectives models of evaluation in measurement science that go along with a good many of these categories.

Part of that level of precision, particularly as it relates to measurement, is critical for evaluating the success or failure of what really trying to do keeping in mind that underlying preferences of communities are transitive and not stable. They may, in fact, change over time and as such what we reference as adaptive capacity is really key and you see that as a planning exercise but also in terms of design engineering in the extent to which there is a marginal utility associated with a certain redundancy in different types of systems that allow us different optionality going forward. That has a redundancy in terms of capital outlays but there is a certain level of precision here which has been cited and is quite important because going forward if we continue to conflate these things we will be confusing a lot of different interests at stake.

I am a professor at the graduate school of design at Harvard. I chair climate adaptation finance for the IPCC and I have advised various CEOs and politicians around the world relating to climate and the environment.

Executive Director Goldzband had a question: We sit here and so much of what we see is immediate as opposed to far-reaching and no matter how many times you are in Sacramento it is hard to grasp this entire state because it is impossible to do so.

To what extent or what is the plan over the next few years to take a look at what Bob asked and say, how do we make adaptation a statewide issue so that we get to the point that where the folks in Fresno don't mind paying taxes for something that might occur in Humboldt and the people in Newport Beach don't mind paying taxes to make sure that folks who are unable to own cars in Fresno and ride buses can get to a cooling center in July?

Is there a thought process that has started to try to keep us together, move us together as opposed to looking at us in different geographic spaces?

Ms. Nuin Tara-Key replied: There is a definite recognition that this needs to happen. It is still somewhat piecemeal in terms of the approach for that. Part of the flexibility that we have at OPR allows us to think statewide and think about, what is the regional context, what are the regional priorities around impacts and urgency around need relative to a local context but then also thinking about helping to bring those perspectives into the same space to have conversations to say, we face the same challenge here in the north coast as in the central coast; it's a slightly different context but here is what we have learned.

We are trying to do that and trying to facilitate that statewide conversation allowing for local contexts and flexibility but trying to identify where there are synergies and opportunities to connect on that.

Group Member Sears commented: Any disaster provides opportunity. The fires in northern California created tremendous opportunity for us. It is an opportunity to link those folks who are very concerned about fire danger who don't live close to water with the folks who live close to water and have their feet wet and are very aware of king tides and sea level rise.

There is a tremendous opportunity right now to link up those two concerns and to feed into some funding mechanism.

Ms. Nuin Tara-Key stated: This last year between the floods and the three disaster declarations for the flooding in early 2017 and then leading to the fires really heightened awareness around the need to start getting ahead of what we are going to see more frequently here moving forward.

Ms. Deborah Halberstadt commented: I am the Executive Director of the Ocean Protection Council and Deputy Secretary for ocean and coastal matters.

There has been tremendous leadership shown by the work that BCDC and other agencies have been doing. We are looking for ways to develop synergistic opportunities.

OPC protects the ocean and the coast for now and for future generations. We look at things from an ecosystem-based perspective. We think about issues like marine protected areas and making sure that the entire ecosystem underwater is protected and conserved.

We look at issues like sustainable fisheries. We look at marine solutions. One of our big services is climate change.

This past year we put out a draft sea level rise guidance document. That is going to be adopted later. In developing this document it is supposed to provide guidance to local governments. We have been trying to work with local entities to integrate local concerns and work with state agencies so that we have a guidance that is using the best-available science and providing an approach for thinking about how to integrate sea level rise into their planning.

We have done several listening sessions around the state and we heard repeatedly that local governments have money, have access to funds for planning but really don't have access to funds for implementation.

How can OPC fill this gap? We are working with OPR who is taking an incredible lead in thinking about financing. We are working across jurisdictions in the Bay Area. We ask, what can we do to help? I don't know what we can do precisely but I do know that we have different pots of funds and we can use them.

We have the opportunity right now to do something creative and to enable implementation of some of the creative ideas that are bubbling up from local jurisdictions.

I am looking for partners. I am looking for ideas. I am looking for ways to make it happen. I read through the Resilient by Design financing framework and there is so much in there that I appreciated.

I like the notation that we need to be thinking on a systems basis rather than a project basis and that we don't need to focus right now on specific mechanisms but just figuring out where the pots of money are and how we can use those across different jurisdictions.

Group Member Northcross commented: I think what you said is spot on. It all comes down to churning but the public will think of as wild and crazy ideas into something that you can take to the voters to get money; that is the implementation. As for adaptation planning you guys come in and it's like, okay, you have to take the wild and crazy from the people in the other room, from the RBD design teams and make it something that you can take to the voters – that is the goal.

Group Member Showalter commented: I was involved with the Flood Futures Report maybe five years ago from DWR and they did a risk assessment throughout the entire state of how flood risk varied throughout the state. Santa Clara and Orange County won even though we didn't want to win.

The second phase of that was to be a finance report about how to finance flooding.

Executive Director Goldzband added: How to finance anti-flooding. (Laughter) We want to make sure we get that going.

Group Member Showalter agreed: How to finance flood protection or flood risk reduction. It has never come out but I know a great deal of work has been done on it. I wanted to bring that to your attention and make sure that there was some connection because I know that they spoke with hundreds of CFOs of water agencies around the state to talk about what were their problems. Even though it was not finalized you should make sure you are folding it in.

Group Member Battalio commented: I just wanted to thank the Ocean Protection Council for that great report on the draft guidelines for the sea level rise. It was a nice job of taking the recent science, which was scientifically conservative, and correctly defining a framework where we are looking at a lower risk set of projects. It is the right way to think about planning.

There is still a need for engineering groups to develop design criteria from this policy and planning level guidance. Somebody needs to step in and do that.

Ms. Halberstadt stated: Yes, I think there are going to be a lot of next steps emanating from this policy document. It has its role as policy guidance and we anticipate multiple other products coming from it.

Acting Chair Zwissler moved on to Item 5.

5. Mark Northcross, a member of the Working Group and of the Finance Advisory Team for Rebuild by Design, will give a brief overview of existing financial mechanisms. Acting Chair Zwissler recognized Group Member Mark Northcross. Group Member Northcross presented the following: Having worked with Resilient by Design as their municipal advisor along with a number of other people we learned a whole lot about what we are really up against.

I will start with some assumptions that will sound kind of wild, crazy and arrogant but even though they are blanket statement and somewhat inaccurate; it is important to take these into consideration.

What I am seeing as our real challenge is how to turn a big idea into a project that can be voted on and come out of the ground.

I started out thinking; we are going to be doing muni bond – no. We are trying to find the equivalent of equity in the private sector to go take the high risks funding to take a big idea and make it implementable.

I have some ideas about how to do this. Let's start with some assumptions that will probably be as equally mad. From the standpoint of a publicly, elected official who has to be asked to vote to tax their constituents or levy rates; all potential ideas for resilient infrastructure in the Bay Area right now are wild and crazy ideas.

The way to define a wild and crazy idea is that it is not complete in CEQA and there is no certainty as to costs, need or timing. There is no certainty and no CEQA, the two Cs. That means it is a wild and crazy idea. (Laughter)

We have to start with that as being reality. From the standpoint of local government the CalPERS tension cross increases that are projected are catastrophic. That means that no one is going to be taking on a major, long term commitment to costs at this point in time without creating a new revenue source.

This does not mean that you can't get one-time grant money out of the city but to get a multi-generational, inter-generational finance commitment out of the city or county in the state of California – no way. There is no way this is coming out of the General Fund.

That means that everything has to have a new revenue source. Everything in California requires some form of voter or ratepayer approval. There is not top/down way of creating revenue in the state of California.

Resilient infrastructure projects need to be multi-benefit. The magic of politics is that everyone wants to leverage their money whether you are a voter, ratepayer or a grant-making entity. That means that want to see multiple funding sources.

To get multiple funding sources a project works best if it is multi-benefit. It is not just transportation; it has flood and it does other things.

I do wrong numbers and I like to label them. My read is that if you are thinking about a real, meaningful, regional-scale project for rising Bay level resilience in the Bay Area, Jacks are better, is one billion. The numbers coming in from New York equates to 400 million bucks a lineal mile for horizontal levees. I think Seattle's seawall is two billion a mile.

I don't know how looking at these numbers you can't do anything of any consequence in the Bay Area for under one billion. You can do small projects but if you want to do something that is going to benefit a lot of homeowners and property owners you've got to be thinking a billion. That is important when we get to the grant-funding phase.

Voters and ratepayers want certainty before approving a new tax or utility rate for project financing. We can't give them the certainty they want until a project is at least to the EIR/EIS process. So we come back to my two Cs – CEQA and certainty.

The next step for all of us in this room is how we can deliver, turn big ideas into certainty and through CEQA.

My own gut-level, visceral experience is that to get through CEQA takes at least five percent of the project costs. If a billion is our Jacks or better, to get to the resilient infrastructure game in a meaningful way in the Bay Area your CEQA costs at five percent is going to be 50 million. I want to put a number out there of where you really need to be thinking about taking a wild and crazy idea into something that you can take to our elected in the room. You've got to be thinking 50 million in equity. That pre-development cost of 50 million; that's equity. That's hard, high-risk cash investment.

Debt financing is not an option for funding the pre-development costs it takes to get the two Cs, CEQA and certainty. It is not an option. It is cash and it has to come from somebody.

The conventional wisdom is grant funding. I am looking at what my elected need to something meaningful and I need 50 million to get us into this game.

I feel like Cinderella. I am the adaptation person. We are the little, poor stepsister who cleans the floor because the mitigation people get all the money and the publicity. I think there is some reality to that. Mitigation gets more money than adaptation. This is something to keep in mind.

How do we turn the big idea into a project? The Resilient by Design group is coming up with some wild and crazy ideas because if we present them to the elected officials and ask them to tax people for it; they are going to be shaking their heads and going – no. So how do we get through there?

What will it get to get it through CEQA? To get through CEQA you need to answer the certainty questions. The goal of pre-development funding is to get a project through CEQA; that means you've got design and feasibility, the point where the EIR/EIS can be done. This is the highest-risk financing. This is equivalent to high-risk equity going into Treasure Island or Hunter's Point; they are rolling the dice on a multi-million-dollar equity investment.

Grant money for pre-development for resilient infrastructure is rolling the dice. It is a big idea. You don't know it's going to work so you are taking a risk.

Traditional public-financing, debt options are inappropriate. Let's not even go there.

Grants are the best source. What do we do to get grants? The purpose of the grant is to get us through CEQA and to deliver the certainty that the elected officials need so that they can actually put something on the ballot. It is very difficult for someone like Bob to go before elected officials and deliver absolute certainty as to the feasibility, success, costs and everything about the project.

Group Member Battalio replied: Well, actually, other people do the messaging. (Laughter) That is a good point. On the open cost we have gotten the Ocean Beach Master Plan through as an update to the local coastal program. That is a CEQA equivalent. I have been working on that one for about 20 years now. (Laughter)

Group Member Northcross continued: This is a summary from our RBD work on state and local grant programs. This is the biggest money currently on the table. The gas tax increase may be repealed in the ballot. This is five billion a year and there is adaptation-planning money in there and it needs to have a transit nexus. It is a multi-benefit concept because it can do flood, rising sea levels and it can do a lot of stuff but it needs to have a transit nexus.

Cap and trade have grants for climate change mitigation and adaptation. The Governor has it budgeted at two billion a year. It is a serious amount of money. This is potentially high-risk equity money.

MTC in the Bay Area gets a billion and a half a year in grant money and there are so many mouths at the table. Nevertheless, if you've got a transit nexus that is another potential source of funding.

Prop 1, the big water initiative, seven a half billion – our read is maybe a third of it could be applied to projects that would be related to flood control. There is some potential overlap there.

SB5, if approved, is another huge bond issue that really is about climate change. It is on the ballot next year. We are guessing that at least 440 million will be applicable for rising Bay levels.

SFBRA we know is 25 million a year. Even though they didn't use adaptation planning in their marketing information to the voters it is about adaptation planning.

The bottom line is, there is a lot of money out there on the grant side, on the state side.

The federal side is complicated and it is controversial. The Army Corps of Engineers is the most controversial. At the end of the day they called it the Continuing Authorities Program which means it doesn't require congressional appropriation. You can use that for adaptation planning. That staff at the Corps in the Bay Area would be really happy to see grants come in for adaptation planning and do it under the Continuing Authorities Program. The Corps does have planning money.

FEMA has planning money where you don't have to have a declared disaster. Most of the FEMA money is for declared disasters. There is money available from FEMA for hazard mitigation work and we can go after that money.

HUD has money. Homeland Security has money. EPA has money. The criticism is that they all are hard to work with and you can't get big money. You stitch together a half dozen different sources so that the little 75,000 dollar grant from EPA from the Resiliency Finance Center is also part of a million dollars in grants from a bunch of other agencies and it all adds up; it all works.

A local, public-agency sponsor is generally required. Sometimes you can do an NGO but you assume you've got to have a local government entity. It seems like the biggest source of money at the state and local level is transportation related. Multi-benefit that has a transportation nexus is good.

To the extent that you can give a flavor to your adaptation project that is also mitigation helps because we are Cinderella and mitigation gets more money.

Acting Chair Zwissler asked: Mark, can you give an example of a project that is going to have some mitigation flavor to it? I am thinking greenhouse gas reduction but how do I do that?

Group Member Northcross replied: We have a Caltrain line in San Mateo County that is going to be flooded and Caltrain is very important for mitigation and we want to make sure that our transportation is safe.

Acting Chair Zwissler observed: Okay, so it is branding.

Ms. Halberstadt added: I think another example that is very different is sequestration, to have a wetland that provides sequestration opportunities.

Group Member Battalio opined: Carbon sequestration in wetlands in terms of protecting existing wetlands and restoring or creating new wetlands is a mitigation/adaptation area.

Group Member Northcross continued: So again, this whole thing of multiple sources; everyone wants to leverage their money. Projects where the money is leveraged will be a more attractive investment especially if it is sourced from a multitude of available funds.

Our Cinderella complex may be going away because in the Republican Congress adaptation is good and mitigation is bad. Even climate-change deniers are now saying that climate is changing but it is not because of humans but we will fund adaptation.

Ms. Schaefer commented: I wanted to make a point about FEMA. One of the challenges that FEMA faces is that their grant money goes to the state as the grantee and then you all are sub-grantees. The effectiveness and the priorities for how the FEMA money is spent is really with the Office of Emergency Services in the state and how effective that is distributed is with the state. Just as adaptation is the stepchild of mitigation the FEMA grant part traditionally has been the stepchild of the Office of Emergency Services because you have the more, kind of, out there macho things and other stuff.

One of the things that the state can do is look at how our ability to manage grants at the state level and how the Office of Emergency Services is working with other agencies to get the money where it needs to go.

Ms. Nuin Tara-Key added: This year the amount of funding that is coming into the state after all of the disaster declarations this last year and now into 2018 really highlights that. This is the largest amount of funding in history will come to a state for disaster declaration.

You need to scale how you actually manage that money. It is a significant pot.

Ms. Schaefer mentioned another issue: One of the issues that can transcend a lot of discussions is that for a long time the state has not had any disasters so they had almost no one managing that and then all of a sudden, they have a disaster and they have a mountain of money and no one to manage it.

That is going to happen across our adaptation activities where you are going to have lots of money for some things and then a week later, nothing. So how do you deal with that?

Group Member Northcross continued: Again, the message here is multiple sources and everyone wants to leverage their money.

Let's talk about locally authorized project finance because that was my original mission here. There are three ways to think about this in California. You have special financing districts, Mello Roos districts and impact fees.

You have public and private enterprises and basically utilities.

And you have cities, counties and special districts.

We organized this starting with land-secured financing and impact fees taxing developments. We have assessment laws. We have Mello Roos laws, special taxes.

Assessments should be ruled out because exceptions are very special situations. An assessment can only legally be charged for a direct, special benefit to a parcel. A classic example is that you have no sidewalk on your street and the city comes in and puts in sidewalks and you will pay for linear foot of sidewalk in front of your house. That is how you are charged. That is a special benefit and it is black and white.

If you are building a horizontal levee three miles away in the Bay there is no special benefit. It is an indirect, general benefit.

For what we talk about here special assessments are not really feasible.

Special taxes and Mello Roos law was adopted in part 30 years ago to address that and it has been very successful. The key thing is it is either voluntary landowner consent or

a two-thirds vote if you have 12 or more registered voters. It is very, very powerful and the only downside is the Howard Jarvis piece which is a two-thirds vote.

It is incredibly powerful. Nearly every political, social justice – whatever issue you can think of there is a way to address it through Mello Roos. There is just this one catch – two-thirds vote.

Development impact fees are another tool. You already have jurisdictions levying impact fees for flood protection and storm grades. So you can already do that, a majority of board approval. It is only tied to the development.

Property tax instrument was killed in 2011. However, it is a very powerful tool if it gets re-implemented through infrastructure financing districts or through some expansion of the redevelopment law and this has a lot of potential.

We include private enterprises in here but the reality is that PG&E and the railroads are kind of in their own category and we think we can go after PG&E through the CPUC and we have jurisdiction.

The railroads are safety issues that are regulated in Sacramento. All the financial issues are in D.C. There are major rail lines that are in the inundation zones as protected. You go to the railroad for money and you just get blown off because you have to go to D.C. to get the cram down on them, to get them to pay. It remains an agenda item to get the railroads to the table but they aren't right now.

Water and sewer is called Proposition 218. Technically it not a formal voter or ratepayer approval but it is de facto constituent approval. The level of emotion in ratepayer approval meetings is quite high.

In the Bay Area 50 billion for a horizontal level is probably light but it works out to be something like 1500 to 2000 dollars per parcel per year for the next two generations. The elected officials present are all shaking their heads right now.

Executive Director Goldzband added: And add to that the fact that now state and local tax deductions are limited.

Group Member Northcross continued: This is a huge issue but very powerful. Water and sewer is a great source of money. We can now do stormwater. We also have three seaports, Oakland, San Francisco and Richmond. We have two major airports that are all in inundation zones. They are enterprises and they charge the users fees and so they are also at the table for this.

There will probably be a ballot for an increase in Bay Area bridge tolls in order to fund a number of things, RM3. I think it requires a majority. So there are exceptions to the ghost of Howard Jarvis.

Again, there is nothing that is just top/down. You have to go to the voters one way or another.

A key thing to remember at all times is community engagement. This is really important here.

We have Ad Valorem taxes which are a two-thirds instrument. You can vote a general tax which means it can be used for any General Fund purpose and it only requires a majority of voter approval which means you can't pledge it.

We just got a gas tax increase through the Legislature on two-thirds vote. It is going to be challenged on the ballot this year.

You can also use a two-thirds voter approval by county as well. There are other options there.

The message here is that community engagement, a third C, you know, we want CEQA, certainty and community engagement. We need community engagement to do anything in the state to generate revenue. We have to generate revenue in order to address this.

Everything requires a new revenue source and we must just assume this. Community engagement is absolutely key in the state. There are three things that the voters need to know.

The first thing is, how necessary is the project? The hockey stick analysis is apropos here. The blade of the hockey stick is where the change happens fast at the very end and we don't know when that is. Rising sea levels are not at the same level as immediate infrastructure concerns and problems. The problem is, how do you demonstrate necessity?

The second thing is, voters want to know; how much will this cost me? We have to say to the voters, we have engineering estimates here and we don't think that the cost will be higher than this. The last thing the elected officials want is to have to go back to the voters two years later because the cost of the project was way underestimated. That is a potential career buster if you are an elected official.

Finally, we have to ask – is this a realistic, workable solution? Is this thing going to work? What if we tax ourselves and pay for it and it doesn't work? That is another career buster for an elected official.

No matter how good you think your project is, it is a wild and crazy idea in the eyes of the public until you have an acceptable level of certainty. All projects right now are wild and crazy.

This is an editorial. This is what my take-aways are from the last several months. All the hogs are stampeding to the same trough. The trough is called, climate change adaptation planning grants. There are all these other grant programs that can be used for that.

The message here is that we need to get coordinated. You can tell that some of the grant applications are uncoordinated, they are overlapping and they all want local sponsors. All the different entities applying for these funds need to talk to each other. All this comes down to the fact that everyone needs adaptation planning grants.

You are not going to sell a billion dollars in bonds right now. That is not going to happen. We need to get these adaptation planning grants to be able to get our projects to CEQA and certainty. In the short run we can all be like hogs stampeding to the trough and elbowing each other out and get away with it for a while. In the long run we all have to get on the same page. So that is my editorial.

Group Member Battalio commented: I have a quick comment on the adaptation grants. These grants are at least half of what they should be. They could be doubled and not necessarily including the staff time from the municipalities that don't have the staff to manage everything.

The funding, as good as it is in California, is not where it needs to be. It is at least half to ten times too low.

Executive Director Goldzband chimed in: After you did your RBD presentation I had a meeting with Kathy and Bob. I wanted Jesse to see all of these mechanisms out there. The one thing that is really necessary from my perspective as a BCDC staffer is not just the listing; it is the issue of certainty and uncertainty.

That issue of certainty and uncertainty goes to the hockey stick issue. We don't know when stuff is really going to start happening quickly. You can't pay for stuff then that fails earlier. At the same time, you take a look at the grant systems like the Army Corps of Engineers which in many respects still believes that horses are being used to move howitzers in order to deal with wars because that is the way they think about their timelines. (Laughter)

Part of the alignment that needs to be done that Mark ended with has to also include multi-dimensions which is not just source but time and risks and it goes back to what Jesse talked about earlier which is how you align all this stuff with existing mechanisms.

That is a really, really, tough challenge. I will posit that this is really the next challenge for this group which is to try to figure out what that alignment can be.

Ms. Schaefer commented: I'm really glad and overjoyed at your comments. What this signals is a transition from thinking about vulnerability and hazard into thinking of adding the component of risk. Once we talk about risk we're talking the language of business. And then we can bring the business community in in additional ways.

I applaud you for the comments that you just made.

Mr. Spencer added: Isn't there a role for the state to provide a framework for this modelling at a local level? Part of the challenge in adaptation planning is exactly what is that risk profile look like? What are we planning for?

It is very interesting that the RBD team did not provide a sea level rise threshold for the design teams to plan for. RBD was not going to step into something that government hasn't even defined.

It seems to me that there is an analogy to transportation, other infrastructure planning and engineering where there is a body of professional knowledge out there that is commonly accepted that a local, adaptation effort can plug into.

I am thinking that this is a really critical role for the state otherwise a lot of this local planning is kind of making it all up as they go.

Ms. Halberstadt stated: I would think, to some extent, that is what we have tried to do with our sea level rise guidance document. It is a state of California guidance document. It does provide probabilistic projections across the state using tide gauges from every tide gauge across the state. It references things like adaptive pathways and adaptive capacity and provides an approach for how local governments and state agencies should be thinking about sea level rise. They should be thinking about your project location, your project duration, your tolerance across the different RCPs and it lays out five different steps that you are supposed to walk through and evaluate and questions that you should be asking yourself as you are connecting this risk analysis.

Group Member Battalio added: The science is relatively new; it's like 2014 when the probabilistic sea level rise scenarios came out. The state of California is leading all the other states in terms of getting that out this year on the recent science.

The Army Corps of Engineers still looks at sea level rise as scenarios of unknown probability. That is the federal perspective still. And this is FEMA's perspective too.

Ms. Nuin Tara-Key stated: I would say in terms of what you described on the sea level rise side there is probably the most work and the most effort in terms of working on a process to provide guidance for sea level rise. Some of the other climate impact areas; we are in different places around different impacts and different agencies that are in a position to be able to provide guidance.

There has been an effort through state investments, in research, to provide information to locals to say, here is a standard set of research and information that is available through CalAdapt looking at projections and the impacts of climate change. So CalAdapt is a state-endorsed and state-funded tool that provides consistent information from our perspective to locals.

Similarly, through our investment in California's climate assessments, state investments in research that are using the same projections and are using at least a course that are modelled; it doesn't get to that research to what you were describing across impact areas in terms of guidance on how you use that information.

Group Member Showalter commented: This is really fascinating to me. In terms of talking about this new adaptation and what the expected adaptation is; when you translate that into civil engineering speak it is design criteria.

When you as a civil engineer stand up before an elected body and say, this is going to work or this is not going to work you say it within your design criteria. Typically in America for flood we use the 100-year flood. In England they use a thousand. In the Netherlands they use 2500.

It is something that we pulled out of the air and said, this is what we are going to use. You can say with a straight face, yes this will meet that not that it will just work.

Making these translations from one discipline nomenclature to another is really important. And we have to make it to finance.

At an ASTE conference they kept talking about risk. They kept talking about risk and how could we make the risk something that we can buy off.

Group Member Battalio added: On the ECRB and in practice, one of the areas that we need to progress on is providing engineering guidance on how to use the new state policy with sea level rise and even farther behind is guidance on precipitation changes where there is a lot less certainty on the effect of precipitation intensity for flood damages but also volume for water supplies.

The engineers need to step in and help translate the state guidance to engineering criteria which is what we do for BCDC on the ECRB.

Ms. Nuin Tara-Key noted: AB2800 which requires the Climate Engineering Working Group that the Natural Resource Agency is the lead on; they are going to be meeting for the first time this month. I can follow up and get that information. They are convening a working group to look at this question in terms of incorporating climate risk into engineering standards.

Acting Chair Zwissler added: Those of us who sat through the longer presentation know that you have done a good job of pulling it down together.

Our next Agenda Item is possible recommendations to the full Commission. The sense is we will continue with that in a future meeting.

6. The Working Group will discuss possible recommendations to the full Commission

7. A Discussion of Future Meeting Topics and Schedules. Acting Chair Zwissler announced: Our last item is any future meeting topics. We had a long conversation last time about other future topics. I don't know if anyone has anything to add to that today.

Executive Director Goldzband noted: SASB will be here in March to talk about the private sector side dealing with certainty and uncertainty.

I think what Zack will ask us to do on February is to create a list of questions for this group to try to answer that are based upon what we have now done.

8. Public Comment. Acting Chair Zwissler announced: Our final item is public comment. Hearing none, I am going to adjourn this meeting.

9. Next Steps. (This item was not discussed)

10. Adjournment. There being no further business, Acting Chair Zwissler adjourned the meeting at 12:14 p.m.

Respectfully submitted,

LARRY GOLDZBAND
Executive Director

Approved, with minor corrections at the
Financing the Future Working Group Meeting of February 1, 2018.