San Francisco Bay Conservation and Development Commission

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**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: Draft Meeting Summary of December 5, 2019 Financing the Future Working Group Meeting**

1. **Call to Order.** The meeting was called to order by Acting Chair Holzman at the Bay Area Metro Center, 375 Beale Street, Ohlone Room, First Floor, San Francisco, California, at 10:34 a.m.

2. **Roll Call.** Present were Group Members: Commissioner Jeff Holzman, Commissioner Claire Jahns, ECRB Member Robert “Bob” Battalio, Roger Davis and Mark Northcross.

**Not present were Group Members:** Chair Zack Wasserman, Commissioner Jennifer Lucchesi, Commissioner Aaron Peskin, Commissioner Kathrin Sears, ECRB Member Robert James “Jim” Cervantes, Justin Cooper, Michael Paparian, Paul Rosenstiel and Chad Spitler.

3. **Approval of the June 6, 2019 Meeting Summary.** Acting Chair Holzman asked for a motion and a second to adopt the summary of June 6, 2019.

**MOTION:** Member Mark Northcross moved approval of the June 6, 2019 Meeting Summary, seconded by Member Claire Jahns. The motion passed by voice vote with no objections or abstentions.

4. **Emily Burgos, Small Business Finance Center Manager for the California Infrastructure and Economic Development Bank, will provide an overview of the Bank’s programs and help us discuss how they could be adapted vis-à-vis rising sea level.** Executive Director Goldzband introduced Ms. Burgos: So Emily Burgos is the Small Business finance Center Manager for the California Infrastructure and Economic Development Bank. Remember that Member Paparian said that we should definitely hear about what the Bank is doing. I want to thank Emily and Gabrielle for the patience that they have shown in getting here.

Ms. Burgos presented the following: We were invited here today to give a brief overview of I-Bank. Please ask questions as I am presenting which will allow me to see where your interests lie.

I have been with I-Bank for about three and a half years. Prior to that I was with the Governor's Office of Business and Economic Development marketing all of the state's programs to small businesses.

I need to ask; who has heard of I-Bank? (Approximately half of the attendees raised their hands) That is probably the most I have ever had at one of these meetings. (Laughter) I didn't know about I-Bank until the program I manage got moved to I-Bank.

We were created in the early 90s to finance public infrastructure. It was a pot of money that was given to a very small agency to make direct loans for public financing. The effort was to give the Governor's Office some longitude to steer where infrastructure was going and to give public entities financing options at that time.

We have leveraged our original trust fund through the sale of revenue bonds and that is how we continue to do business. We actually don't take money from the General Fund for our activities.

Over the years they have transferred other programs under our authority. The Finance Center is one of them and also some allowance to issue conduit bonds.

Right now we have four main programs. The first two programs are our ISERF programs and our Clean Center. ISERF stands for Infrastructure State Revolving Fund Program and that is direct loan to city and municipalities.

The Clean Center is not a real separate thing. It is actually just the ISRF program with a green branding. So that is a slightly different funding source that we use that we can promote green infrastructure projects with. But it works the same as the original ISRF programs.

Then we have our bond financing program. These funds are not from the Cap and Trade Fund monies. For us Cap and Trade are a bit of a programmatic nightmare. We are happy not to have to avail ourselves of Cap and Trade monies.

Executive Director Goldzband added: Don't worry – everybody knows that GGRF accounting is a nightmare.

Ms. Burgos continued: We also have a bond financing program which we issue conduit bonds. If you look at the State Treasurer's website, they also issue conduit bonds. The state determines that certain bonds can be tax exempt.

When you look at the State Treasurer's website there are about 15 different agencies under the Treasurer's Office and you wonder what they all do. If you look at the actual name of the agency it will tell you what they do.

So if the agency is called the California Health Facilities Financing Authority, they will probably be doing conduit bonds for health facilities.

So we also issue conduit bonds but we can do them for a number of different things which I will touch on in the next slide.

And then the last and final program is the Finance Center. It is where the program resides that I manage. I have been with -Bank has been around since 1984. The original program that spearheaded the Finance Center started in the late 60s. Even though this is the newest program to I-Bank it is the oldest, existing program that we have.

We can issue conduit bonds for public agencies. We can issue them for 501(c)(3) non-profits. We also have an allocation for IDBs, Industrial Development Bonds. And we can do exempt-facility bonds.

We don't actually give the money but we do allow the bond have its tax exempt status. We do get a good amount of business through these programs.

Ms. Lauryn Agnew stated: We just sold over eight times capacity in 18 minutes. We are very happy about this and CalSTRS has their green bonds. We sold just under 300 million in just under 18 minutes for an energy-efficient facility in West Sacramento.

Ms. Gabrielle Stevenson of I-Bank added: They are building a second building next to the first building at CalSTRS. The CalSTRS Building in West Sacramento is beautiful and it is green and they have an outdoor garden. It is a model for all buildings going forward so we are thrilled that they are building a second one.

And the second one is going to be even better than the first one. It will not only be a zero-net but it is going to be public and employee-used.

This shows how important the green bonds are and they are very popular.

Ms. Burgos continued: With most of the programs that we do at I-Bank we look at two things when it comes to financing – who the borrower is and what the use of the proceeds is on the loan or the bond.

In our ISRF program we only lend to municipalities. So we loan to municipalities, hospitals and universities. Most of the time we are loaning to municipalities or partnerships with municipalities.

Then they can use the funds for all sorts of infrastructure improvements. Right now we have a little over 100 outstanding loans. In the lifetime of the program we have done maybe a couple of times that.

We have a really creative, legal team that is able to make sure that these infrastructure projects are meeting the requirements but we are still being nimble enough to make loans that matter.

We have done some airport projects lately that have been interesting because there is that private-public partnership with an airport. We have had to split hairs about what is public and what is private and only financing the public piece. We are willing and able to do that.

In this program we are allowed to accept enterprise funds, general fund and leased assets. About 90 percent of the time we take leased assets. There is not always an enterprise fund and municipalities don't want to go to vote to pull money out of the General Fund.

It gets really, really fun when we are taking a library as a leased asset because maybe a library is worth a lot more than what we really need for a lease, lease-back. So we will take stairwells and certain rooms and we will lease those back to the municipality so they can service the loan.

Mr. Bob Spencer asked: Are those the same as certificates of participation?

Ms. Burgos replied: You mean the lease, lease-back?

Mr. Spencer answered: Yes.

Ms. Burgos continued: Not to my knowledge. So the way the lease, lease-back works is we take on the property and then we lease it back to the municipality for the exact amount of the payment that is due.

Mr. Spencer noted: It is the same idea but just different terminology.

Member Northcross stated: It is a way of turning a lease financing into a bond issue.

Ms. Burgos continued: We don't have any defaults in this program. We have never taken a loss in this program. We have asked ourselves – how to you repossess a town hall? Apparently, this is very standard for how to structure these deals. It is a leased asset and if they can't pay then we keep our ownership over it.

Member Davis commented: The lease is to a governmental entity and generally payable from the General Fund so you wouldn't foreclose on the library unless somehow the entity was insolvent if not bankrupt. So this would be pretty rare.

Ms. Burgos emphasized: And it is an important distinction with this particular program especially when we transition into what I do. These are not subsidized loans. People must credit-qualify for these loans. And these municipalities have to show that they can pay and have to show that they are going to have no trouble paying.

This isn't one of those governmental programs where you come to use because no one else will give you money because your credit is poor.

This is a program where you come to us because there isn't an option in the private sector or there may be another option in the public sector but we go faster. So these are well-qualified borrowers getting these loans.

We did have a hiccup here recently. We had a loan to the Paradise Irrigation District and Paradise burned down. Our asset is still intact but they don't have any customers anymore buying water from the Irrigation District. Luckily, we were able to defer payments for them for five years with the blessing of the governor and with funding assistance from CalFire.

This seems to be the only circumstance so far where things go bad. We even had loans out to San Bernardino and they paid after they filed for bankruptcy.

We don't do housing. We can do infrastructure leading up to housing but there are enough housing agencies with the state so that is the one thing we don't do.

On paper we can do public-private partnerships. Right now the airports are the only time I have seen that actually applied. When we do a public-private partnership we need a municipality that will be the sponsor. They will be the person whose credit we are looking at. They will be the person repaying it.

We also have concerns about private activity. When there are private funds being made, we want to make sure we are not supporting that piece. We want to also make sure that if the public entity is contracting with a private entity if that one business is going to be the only user of that public infrastructure that is not okay.

Member Bob Battalio asked: Can you pay real estate costs for relocating infrastructure?

Ms. Burgos replied: I don't see why not. I don't know that we have but it is definitely not a red flag.

We have a lot of benefits that municipalities have discovered. One of the benefits is that we have 100 percent financing. And they don't have to necessarily come with any money down if they don't have it.

We can close up to 90 days or sooner but we don't like to advertise that a whole lot. But it a municipality comes in and they have all the information we need we have no trouble underwriting it and getting it to our next Board meeting. It can be relatively quick especially compared to some of our governmental agencies.

When folks need to be reimbursed, we can usually reimburse within 72 hours. We have a very streamlined process.

I-Bank is pretty small. I think we have 30 employees. The Director has to sign off on everything and we can just walk into her office and give it to her.

We regularly accept applications so it is not like we have an open and closed application period. And we are not doing this on a competitive basis.

The last and most important thing is that we don't have scoring in the sense of deciding between you and another municipality and I like their project better so I am going to do theirs and not yours.

We are really a base-minded agency. So if you are credit-qualifying and you are going to repay us; those are the types of deals that we want to do.

The question about our capacity per year is a difficult one to answer to I am not going to answer it. Our capacity depends on how much money we have available in our last fund sale because we are leveraging through the sale of revenue bonds. Our team may do 10 years a year or maybe 20 deals a year but when you are operating with that few loans the difference of two or three loans can make or break you. It really just depends on what type of activity they get.

So we are always talking about what is in the pipeline, who have talked with to make sure that we sell a bond at the right time to make sure we have the capital to cover it.

We don't have an annual capacity. We don't have an appropriation so we don't have to get permission to look at a set number; if we the money available we can lend it. If we don't have the money available, we are usually selling a bond to get more money.

I don't have the numbers off the top of my head to inform you as to what our volume has been in the last couple of years.

Ms. Stevenson chimed in: In the last fiscal year we did $44 million. Last year we did a deal for 510,000 all the way up to – it just depends. The next bond that we are selling is the Virgen Train High Speed Rail and that is $3.25 million.

Ms. Burgos added: We are usually talking to people for about a year before they are actually ready to do the deal and get the money and sign the document. So we know who is interested and we are always figuring out where that pipeline is and when they need to close so we can make sure we have the money for it.

One of the more green loans that we made was for energy efficiency upgrades on city buildings. Our first clean loan was to the city of Huntington Beach for LED lights. Energy efficiency retrofits are so much more reasonable and they are an easy upgrade for municipalities.

Mr. Michael Montgomery of the Regional Water Quality Board asked: Is this sort of the context of clean?

Ms. Burgos responded: This is the context of clean as far as I am concerned.

Mr. Montgomery continued: Doesn't clean have different eligibility criteria and different, potential rates and terms?

Ms. Burgos explained: It does have eligibility criteria and on paper it does have different, potential rates. Right now we are in a situation where because we are trying to figure out who is going to need the money when and when we need to borrow our next bond – we are deciding whether or not we should be clean or not.

Mr. Montgomery continued: I think this is relevant to this group because what we are talking about is funding and financing climate adaptation in the Bay margins. We at the Water Board are going gangbusters to change our regulations to get people to do different types of and broader scale, shoreline projects.

When I look at eligibility of clean, I see everything that we are doing in that context spinning into clean. Understanding the difference might make a difference because none of what we are looking to do has to do with your more conventional infrastructure of libraries and city halls and airports and stuff.

Ms. Burgos stated: Anything that is eligible for clean is eligible for our traditional program. So from the municipalities' perspective it is the same experience. It is the same loan. It is a funding source as it is internally for us how I fund that loan.

Mr. Montgomery continued: Does the ISRF have the potential lower interest rate for disadvantaged communities?

Ms. Burgos replied: It can, yes. We decide our interest rate based on a number of different things. We are looking at MMB but the final decision is done at the staff level on an individual basis.

Currently and practically speaking the difference between clean and ISRF is going to be an internal decision for us.

Practically speaking we are very small and even though our funds feel large when we are talking about $10 to $35 million deals the money can go pretty quickly and sometimes a $10 million deal is going to be the difference between us not issuing or issuing a regular ISFR bond. And if we don't have enough clean loans in the queue that we know we are going to add up to another clean bond then we may want put that program in the regular ISRF program because maybe somebody we have been talking to for a year is going to come in with $50 million of regular ISRF need to make sure we have that cash.

So it is a juggling act for us internally and we do look at it on an individual, transaction-by-transaction basis.

There are limitations to the funds we use to fund clean loans. If we were to lump all of our clean loans together and package a bond, they would need to be the same. And we don't get as much activity on that side so a lot of times we are using what would be clean loans in our regular program to make sure we have enough to issue a bond.

We have never issued a green bond for the ISRF program. We got funding for the clean program in 2013 or maybe 2012. It has been within the last five years.

Ms. Stevenson chimed in: The other big distinction is the water bond is sold as green bonds. We are a little over 1.3 billion of four series of water bonds in the last four years. We sold one today as a green bond strictly for marketing purposes. The investors want to make sure that people understand that they are investing in sustainability.

The rates for green bonds and our ISRF bonds are comparable. It really comes down to who your investors are and what the timing is and the Water Board is an excellent borrower.

Ms. Burgos added: And it is the same thing with the ISRF bonds. When we don't sell them quite as often but when we do sell them, they go quickly and people are fighting over them because the Water Board has an excellent credit reputation and our bonds are rated very well.

I manage the Small Business Finance Center. We have a number of different programs where the aim is to help small businesses get loans.

This past fiscal year we actually did over 575 loan guarantees. I am the state's version of the SBA. We guaranteed $223 million but the whole economic impact of those guarantees was a little over a half a billion dollars in private capital that entered the market.

We will support small businesses for any number of reasons. We are always looking at the type of business and what they are using the money for. We can't currently work with cannabis businesses and then we have challenges with some of the more sin-and-vice types of businesses but those decisions are made on a case-by-case basis by me.

Right now we are offering up to 80 percent guarantee or up to $1 million. We consider a small business anything less than 750 employees. That number is laughable. Most of our businesses have between one and five employees and one or two of the largest businesses that we have in the program have 300 employees. I have never had to split hairs with someone over what counts as an employee because we are never anywhere near this number or we are way over it and we can't even be talking to them.

Member Battalio asked: Disaster relief is typically a post event but is there any way that could be adjusted to be used for adaptation?

Ms. Burgos answered: Disaster resilience – at this time, no. But that, especially with the power shut-off, has become an open discussion. The way that we decide disaster is written into a piece of guidance that is not in my statute. It is a piece of guidance that gets approved by my Board.

So once we able to figure out where the governor's mindset is about how we support pre-disaster it will be an easy change for us. It is not something we need a legislative change for.

Mr. Gil Friend of Natural Logic asked: Is that something that you need support from us or others to figure out how to do?

Ms. Burgos responded: Not necessarily – the biggest challenge at government when we are trying to define things is, we don't like to define them ourselves. We like to define them by pointing to something else.

So right now disaster is anything that the federal government or the state government says is a disaster or an emergency. So we have had some requests to expand that to the county and city level. So sometimes we do need help in identifying what the third-party source we could point to as a trigger for a requirement in programs like this.

At this point obviously the legislation is behind the mind and we need something to identify what would constitute disaster resilience and disaster preparation and how do we classify something the power shut-offs because people are seriously being impacted by that but it is not considered a disaster.

Executive Director Goldzband surmised: So one possibility is taking a look at FEMA's Pre-Event Disaster, Mitigation Program that just came out.

Ms. Burgos stated: I hate using FEMA.

Executive Director Goldzband replied: Yes nobody like using them so don't worry. (Laughter) But this may be one of the few things that they may be doing right. There are a lot "mays" in that sentence. (Laughter)

Ms. Burgos opined: The Disaster Relief Program for a number of years was completely and totally unreasonable because there was a requirement that they have applied to FEMA before they applied for one of our loans. I don't like those kinds of requirements but you may be on to something.

Executive Director Goldzband pointed out: When you are talking about vulnerable communities you are talking about mom-and-pop stores and the like and so that may well be a nexus there.

Ms. Burgos continued: Speaking of mom-and-pops in the Bay – have you heard of Stash Your Bag? Have you seen Stash Your Bag? That is one of the deals that we have supported.

One of the main challenges we see with small businesses is lack of growth capital. So you have a great product and somebody wants to give you a contract; let's say Costco wants to buy your product. You don't have the money today to buy the supplies to fill that purchase order. And no bank in their right mind is going to give you money today based on your past income for this need.

It is a dangerous cycle where if they could just get the money, they could sell the product. They already have a contract and it is not a problem. But they just don't underwrite that way.

They underwrite how much they are willing to give you tomorrow versus what you sold yesterday. The Stash Your Bag was a case just like that. We were able to support half a million dollar guarantee to them.

This was four years ago and since then they have continued to double down on their success. They are everywhere now. They have bags in all sorts of sizes and all sorts of colors. It is a reusable bag.

This is like my perfect deal. It is green and she is out of San Jose. While you may not have a small business coming to you for permitting when you look at the projects that are happening along the waterfront there may be small businesses that are trying to lease space. We can guarantee loans for that type of capital as well.

I said a number of times that the legal team and upper management at I-Bank are incredibly nimble and creative minded. We want to do everything that we are legally allowed to do. Sometimes that means we can partner with other entities to help do more than we can do on our own.

So right now we have a pilot project in the ISRF program in the Finance Center with the Bay Area Air Quality Management District. We have a master participation agreement in place should we get any municipal borrowers wanting to do certain types of clean technology purchases in the Bay Area.

So we will make an ISRF loan and then the Bay Area will come in purchase a portion of it. The Bay Area is really interested in promoting certain types of projects they are calling CLEEN tech and this is the CLEEN Tech Finance Program.

They are doing the engineering evaluation on the technology and then if they agree with it and make the municipality a loan then they will come in a buy a portion of that loan.

Their participation in that loan will reduce the interest rate for the borrower because the portion they are buying is going to get a zero percent interest.

Then on the Small Business Finance Center side we have an allocation to guarantee loans to small businesses who are producing and/or purchasing CLEEN tech.

So where my program would normally do an 80 percent guarantee in this program they can do a 90 percent guarantee. And what makes this program even more attractive to businesses in the Bay is that my maximum guarantee in my regular guarantee program is $1 million and in this program it is $2.5 million.

So banks notoriously don't like doing stuff they have never done before which is what makes financing technology so difficult. So the bank will not only get up to 2.5, 90 percent guarantee; the Air District is going to come behind and do an engineering evaluation to show that the technology does work. So it is a great product. It is a very exciting partnership for us that we would love to replicate in the future with others.

Acting Chair Holzman noted: This feels like financing things for preventative purposes.

Ms. Burgos added: And the thing that is great about this model is nobody wants to be the first. So once we can present this as successful then it is really easy to get partners statewide to get onboard.

Here you see a list of our contacts and emails. Right now our Acting Executive Director is Nancy Robles. Lena Benedict is at the ISRF and CLEEN Center. She has been there for years and she is a wonderful resource. Ms. Fariba Khoie manages our Bond Unit and I am at the Finance Center.

Mr. Bob Spencer commented: Regarding the 17-year, Del Mar loan is probably within the window but those fairgrounds are projected to be underwater after about three feet of sea level rise. Are you looking at your credit risks at all on the coast?

Ms. Burgos replied: I don't know. That sounds like something our legal counsel is doing.

Executive Director Goldzband chimed in: What I will do is I will call Lena and talk with her about that.

Ms. Burgos added: I tout her experience so much because she has worked in this program for years. She was just recently promoted to manager.

Mr. Montgomery chimed in: I want to talk about the CLEEN program subsidy for the climate tech financing. So basically the public-sector facilities loan – this is the sweet spot for finance through the I-Bank for climate adaptation. It reaches MUSH. Are NGOs able to go under MUSH category?

Ms. Burgos answered: I don't know.

Mr. Montgomery continued: It essentially beats the CLEEN Water ISRF which is another potential source of funds in that it provides zero interest and meets all the eligibility. You can fund design. You can fund 100 percent of the costs.

Ms. Burgos stated: Zero interest on the Bay Area's portion. So there is still interest on our portion.

Mr. Montgomery explained: So the way that works is and the concept behind this was – the Air District was pushing out a 100 million in loans on mobile-source, emission reductions and they were saying; what are we doing for incentives on stationary sources?

The idea was if we really want to reduce greenhouse gas emissions from stationary sources we need to come up with an incentive program. And that incentive program needs to hit all of the potential customers which are public entities and private entities.

You are doing loan guarantees in the private sector. You are doing these MUSH loans in the public sector. That is why there is this duality to that program.

Member Battalio inquired: I have an engineering question. I have always associated the Air Quality Management District with climate mitigation and not adaptation. I am little confused about this.

Mr. Montgomery explained: It is greenhouse gas emission reductions. It is not adaptation. From the financing lens it doesn't matter whether it is adaptation or mitigation it is a green project.

In a multi-benefit context you are creating habitat where it would be lost in the future due to sea level rise.

For a while I was keen on the greenhouse gas emissions funds but that is just so hard to get to and the county requirements are so difficult. And these guys are really easy to work with. They are easier to work with frankly than the Clean Water Revolving Loan Fund Program where there is not enough money and a lot of customers kind of lining out the door.

These guys have their doors open and they want customers. They want to build out their green lending and their CLEEN Program portfolio because they were created and when green banks became the rage the governor decided – well we already have an Infrastructure Bank let's put the green bank portfolio in the Infrastructure Bank.

So this is a piece of their business modeling. You go to other states and their green banks are the entire business model.

Ms. Burgos added: And if I could touch on it from a partnership side; the Air District has put aside $4 million for these programs collectively. They will get that $4 million back. Unless one of our municipalities doesn't pay which would be unprecedented and we have losses in the guarantee program - this is $4 million that they will get back.

It is not a grant program and that from a financing perspective is an interesting model because governments tend to understand grants it's a one-for-one return and they don't understand this type of leverage where you give me $4 million, and granted it might be for ten years, but you are going to get it back.

Executive Director Goldzband continued: What we will do is if you could do me a favor and get me a copy of this we will post it. And we will post it on the website where everybody has the ability to see it. Thank you.

5. **The Adapting to Rising Tides Program Will Provide A Brief Overview of Its Proposed Adaptation Financing White Paper**. Mr. Nick Sanders presented the following:

I am with the Adapting to Rising Tides team at BCDC. Larry asked us a couple of months ago to start thinking about financing. We are in the final stages of ART Bay Area which is a Baywide vulnerability assessment. We just completed it and handed it in on Wednesday. So now we are ready to go back and start this financing effort.

I will give you a quick overview and a sneak-peak at some of the findings. I will go over this ART Bay Area Financing White Paper that we want to do. I will talk a little bit about the workshop in February. I will finish by going into Next Steps.

ART Bay Area looked at several different scales across the Bay. We looked at regional, local and specific assets and we looked across four different systems from transportation to model communities and then two of MTC's constructs – PDAs which are for developed areas and non-developed areas.

I will be talking a little bit about the regional giving you some high-level, oh-my-God moments that we saw. The regional analysis really wanted to answer what gets wet within each of these systems and where the impacts are worse and where they appear first.

And then the second question was – where are these assets we care about; were they co-located, high-importance assets co-located and vulnerable at the same time.

Here we are looking at future growth within MTC's PDAs. So these are new households that are going to be added in the coming years and this is effective before 2040.

At the bottom you can see the different water level scenarios we have which could be permanent flooding from sea level rise or it could be a combination of sea level rise and a temporary-flood, mega storm.

The big take-away here is it is a big problem. As you can see from 24 inches onwards we are already talking 20,000 new households actually impacted by flooding going to the up the middle stages of 48 to 52 you already have 70 to 80,000 new households.

Member Battalio asked: Does this include projected population or housing growth?

Mr. Sanders answered: No this is new housing added up to 2040. This is not even talking about current households. This is additional housing; the difference between the 2040 and today.

Member Northcross asked: And Nick your growth projection is based on ABAG or something like that?

Mr. Sanders replied: It is on MTC's model.

Commissioner Jahns added: If you include the existing housing it is much worse. (Laughter) I've heard something like 100 times worse.

Executive Director Goldzband chimed in: We don't know how much worse it would be. But you can't just add the current to the other. The New York Times called a few days ago and asked that exact question because they are doing an article on Foster City. I can't give them existing yet.

But stay tuned because when this gets released in January you will see all sorts of numbers that will blow your mind.

Mr. Spencer asked: Why can't you give existing?

Executive Director Goldzband explained: Because of a technical issue with regard to the data.

Mr. Sanders added: What we have is we have 2010 values. What they are referring to is the total for the whole Bay because what we looked at was MTC's PDA areas.

Mr. Benn commented: It sure would be good to have a comparison chart that showed the existing and the projected. Extrapolating the message forward it is a lot.

Mr. Sanders continued: We can look at this in detail at specific PDAs which are located in cities. This is showing by PDAs how many new households are going to be potentially impacted by flooding. This will tell us where the first impacts will be. This is showing that downtown San Rafael is really where it starts. And we see where the worse impacts will be later on as time progresses, the deepening of this color moves towards San Jose.

A lot of this stuff is pending on the changing of the shoreline. And San Jose will have the South Bay Salt Ponds Project which will change these estimates.

Member Northcross opined: This is a really powerful graphic because in my business we are looking at – you know we are going to redevelop the Naval Air Station at Alameda, we are going to do Hunters Point and all this – and you are looking at this chart and going; (exasperated look on face) – (Laughter); I'm not so sure about that. (More laughter)

Member Battalio chimed in:  I would like to add a little bit of perspective.  Some of us have noticed like in Monterrey and New Orleans is that a lot of the more recent development has been in areas that are more flood-prone or disaster-prone and especially the re-development areas and the like.

You can almost map age with elevation in some areas like on rivers and the like.  Is that part of what we are seeing here?

Mr. Sanders replied:  This is definitely part of it.  We have just so many indicators and metrics that I just cherry-picked some for your presentation today.  We did look at that difference and you can see that we are projected to build more in flood-prone areas.

Member Northcross chimed in:  Another short editorial is that I really hope this chart gets in front of the Board of Realtors for the various Bay Area counties because that is what I am learning nationally the real come-to-Jesus experience on rising sea levels happens when the Board of Realtors gets onboard.  And they are not onboard.

Mr. Friend added:  The Board of Realtors and the bankers would also be insured and the re-insurance companies are finally gradually coming to the table on this and realize that there is going to be a big lot of pain.

So if they see this and they say, we are not underwriting – that is big leverage.

Mr. Davis added:  At the end of the day the insurance companies are going to be the gatekeepers.  They only insure for a year so they are not really up against it.

Mr. Friend continued:  I mean there is a cascade of risk there.  What I see here is two things.  One is do we block development in high-risk areas?  Or do we require certain levels of resilience in order to allow development in high-risk areas?  So those are the two choices here.  Or do we stash up a lot of money for disaster recovery?

Member Battalio stated:  In a lot of places we have the situation where the high-risk areas aren't identified because FEMA and others don't consider coastal erosion and other geomorphic responses.  They simply map inundation and don't consider future conditions.

So from a real-estate perspective nobody is using any of the maps that we have produced showing future flood hazards, erosion hazards and any of that.  It is not part of the process.

So a lot of these areas may actually be in flood plains but a lot of them probably aren't for various reasons even with flooding because they are assuming certain levees and dikes will be maintained.

As an engineer I am experienced in working in those areas.  It is partly not well defined in the real-estate practice or what they use there.

Mr. Spencer was recognized:  Remember that ABAG's projections are policy-based. They are not totally market-based.  So they are trying to push development to these PDAs.

I have to reiterate again, it's the existing units and you can get projections by TAZs. So that is what is really driving realtors because they are trading in these existing homes.

But maybe the most important point is that at least this gives a sense of the potential for value capture from new development to assist in funding resilience of the structure.

So the bigger the number the more potential for value capture to get new development to participate.

Mr. Sanders continued: And part of our thinking was also by focusing on these projected numbers and these goals you have a lot more options of different strategies to react to than the current ones where you are a little more limited in your strategies of what you can do.

Executive Director Goldzband noted: You are seeing a preview. And BARC has seen a preview but don't worry we are going to be working over the next four to five weeks with MTC and Caltrans about how you actually talk about this stuff.

Acting Chair Holzman commented: The existing stuff is what mobilizes the interest behind it and the new stuff is what creates capital.

Mr. Sanders continued: Here we have highways and car volumes. This is not even looking at network effects like MTC with network effects and what happens if a neighboring county gets impacted by a traffic impasse. We didn't look at that just direct impacts on a segment of highway and how many cars travel over it and if it gets impacted what can happen.

Again, U.S. 101 up in Marin gets hit first and later on it moves to the South Bay and East Bay and really impacts a lot of the travel routes.

Acting Chair Holzman inquired: And this means it shuts down completely or shut down a day a year or what?

Mr. Sanders answered: This is just impacted meaning water is on the highway. It could be from a lane that is closed to all the way shut off. It terms of timing since we have the total water level concept that allows us to say permanent to temporary and any combination in between.

Member Northcross opined: I think Jeff's comment is spot-on. This one is potentially powerful but the average, daily, car traffic stat is not as visceral as the number of housing units. And so the feedback is we need another trafficking, engineering stat that is more visceral.

Member Battalio commented: There is a study being done with Caltrans funding, SB 1 funding with the Association of Monterrey Bay Area Governments and they've done some traffic, impact modeling with a number of parameters for the Coastal Highway 1 in Elkhorn Slough.

Mr. Sanders stated: You might get more results with people by asking; what does this mean to you? What will your commute time be?

Member Northcross agreed: Yes that is visceral.

Member Battalio assented: Yes you must make it visceral.

Mr. Sanders continued: We have many, many indicators. We have also mapped it geographically to see what it looks like on a map. We show here 36 inches which could be a five-year storm anywhere between 2030 and 2040 or it could be permanent, sea level rise between 2050 all the way to 2100. This really depends on the projects and the likelihood range, future sea level predictions but we show 36 inches for now.

So we can add passenger rail, segments and stations to it. We can add high-quality, bus routes to it. All the transportation assets we looked at also included seaports and airports. And we can add PCAs which are MTC's conservation areas. And we can add the PDAs we just talked about where they are aiming to push for more housing developments. And then we show the vulnerable communities in this purple color.

Mr. Friend asked: what is the current thinking of the range of years in which we might see 36 inches? How soon and what is the most aggressive and conservative projections on that?

Mr. Sanders replied: That is right here. You see it could be as soon as 2030. It could also be a five-year storm in 10 years but definitely by 2040 it would be a five-year storm. We see the different sea level rise scenarios with the likely consequences based on the actual rise experienced.

Member Battalio chimed in: this is a great framework and I know you have plenty on your plate but one of the things that we have been looking at which is really important to the Bay are the effects of climate change on river and creek flow.

For example, SR 37 was damaged due to a precipitation, run-off event and it kind of blew out rather than a sea level rise event. And a lot of these transportation infrastructures as well as wastewater and other facilities are in low areas that are subject to multiple flood sources and not just coastal but also fluvial and a combined. There are ways to fairly quickly calculate using data that the state and others have provided looking at the increase in precipitation and roll that through the flow rate and the flood extent. And we have been doing some of that on the Pacific Coast with state funds.

It is something to maybe add in the future. You might find that you probably have twice as much potential impact.

Mr. Sanders added: Based on the USGS Study the combining of riverine flooding on top and then the big unknown of groundwater which we are trying to push to get more modeling done as well; this is only looking at tidal flooding and this is a conservative estimate.

We look for clusters of assets that are being impacted and where there might be multiples of these in the same place for potential, multi-benefit adaptation.

Since this group has been looking at RBD projects we want to know how this relates to RBD projects and we found a lot of the same places that RBD has projects in.

We want to talk about what we are trying to do with our Bay Area Financing White Paper. We started talking this summer that we need to move to the next step of adaptation in trying to understand what kinds of tools are out there and how can we leverage them and how can we get them to projects.

One problem we identified was lack of capacity in a lot of local agencies and partners. This is partly because it is a complicated matter. We want to increase our understanding of all the financing tools that are applicable to adaptation projects.

So the goal of this paper and this project will help to identify and characterize some of these financials and make a tool and partnership with the Water Board and people at OPR. We are reaching out to multiple agencies and getting a tool or database going that helps people along and is standardized among a lot of partners so that not everyone is doing their own financing guidance.

Member Battalio shared the following: My experience on the Pacific Coast is that you really do need to reach out to the real estate folks before this. I have been almost chased out of town a couple of times by those folks especially San Mateo County to be blunt about it – so, watch out.

Mr. Sanders continued: Here you see a zoom-out to see what kinds of numbers we are talking about. Various studies have estimated the cost of climate and this goes from the RBD Study in the Bay Area that said it was about $35 billion all the way up to the USGS Study that says in some cases up to $450 billion.

Another USGS study that came out summer is estimating that by the end of the century around $120 billion just in property could be at risk to sea level rise in California and the Bay Area accounts for two-thirds of that.

Member Northcross added: One of the things that we don't think about that is now starting to surface in places like Norfolk, Virginia is your property may never flood, that's the good news – the bad news is you can't get to it 20 percent of the time. That is a real estate impact. That is a board of realtors impact as well.

And so the Marin County and San Mateo County work on inundation and assessed value to be inundated was on inundation and it did not look at the fact that what properties are going to be inaccessible like in Chesapeake Bay there are places now that one-fifth of the time you can't get to your home. That has an impact on real estate values.

Acting Chair Holzman added: Who cares if you can't get to your home if you can't get up the 101 and get to work?

Member Northcross continued: Yes, the same issue – can't get to your job, can't get to your home.

Member Battalio stated: What a number of people have done around North Carolina is that they just take a boat. We can adapt somewhat but Norfolk, Virginia Beach is in trouble.

For historical purposes I think it would be good if you referenced the Pacific Institute Study. It was state funded over 10 years ago and they had one before that. It might be a little low but it would be interesting to see it again.

Mr. Sanders continued: Here you see numbers for damages on previous disasters. You can see that the California earthquake in 1989 for $10 billion all the way to Hurricane Katrina estimated at $127 billion. This figure of $119 billion is sea level rise in only like an annual storm. That is how much property currently is likely to be inundated.

Member Northcross noted: And that is the inundation number as opposed to the you-can't-get-to-work number.

Mr. Sanders agreed: Exactly – that is right. It would be even higher and also not assuming growth.

Member Battalio chimed in: So this is the ART thing where you look at a water level and you have sea level rise or a storm – so there is no inclusion of disconnected areas; the low-lying groundwater affected or the high tides.

Mr. Sanders stated: We have those models. We have not used them as a tool yet.

Member Battalio noted: That Spring Tide, King Tide, monthly, high-water level stuff kind of from the bottom up flooding really does get some people more than the 100-year event or even a 20-year event because really will change the land use more than likely because it is such a frequent effect.

So sometimes that can come first especially for these low areas behind Highway 101 or some salt ponds or something.

Mr. Spencer commented: I don't know if anyone read the U.C.S., Union of Concerned Scientists paper of effective inundation. I thought they developed a pretty cool metric where they said – if you are flooded more than five or ten days a month you are effectively inundated. And so that was their metric as to when you are going to be inundated.

Member Battalio stated: Most people are using an annual to model this.

Executive Director Goldzband noted: And the problem with that is that when you take a look at the vulnerable communities and you take a look at who lives in vulnerable communities and you put in the environmental justice ramifications of this; the people who live in the vulnerable communities many times rent. And many times they are not terribly wealthy. They get flooded once and it is goodbye. That's the ball game because they don't own their home and even if they did own their home if you are flooded in your home you cannot live in your home for a long period afterward.

And if you have vulnerable communities and vulnerable people and families who get flooded even just once what happens is that they end up moving out because there is no other place to live, unless they bunk in with their relatives who may well also been flooded, it is where their schools are. It is likely where their jobs are. It is certainly where their religious affiliation is.

And as a result their entire network, their entire social fabric is totally, totally disrupted. So then what happen?

They move out. And then what happens to those homes? You have gentrification perhaps and you have resilience in a different way than the new homes are created. If you are smart what you do if you are a developer is you buy homes or whatever and you develop a new system and all of a sudden you have people living there who were not living there before.

So you have huge social ramifications here that actually with the exception of the deaths – and nobody can discount the deaths that happened in 2017 because of the wildfires; actually affect more people and more issues with regard to how the Bay Area actually works and lives than what happened in Napa and Sonoma.

Mr. Sanders added: And I think that is a good reminder too that often we look at permanent flooding but this temporary flooding can be as disruptive.

Executive Director Goldzband stated: It is as disruptive depending upon who actually gets flooded out.

Ms. Emma Greenbaum with BCDC was recognized: We have talked about the fact that vulnerable communities looks at both social and economic vulnerability indicators as well as contamination burdens.

So when we are talking about flooding we are not just talking about nice clean water that you can boat across. To your point, even temporary flooding can be very damaging and mobilize a lot more than just sediment and water.

A lot of the areas shown in pink are also contaminated lands and contaminated water.

Member Northcross chimed in: Everyone has been talking about an idea for a visceral statistic and we go back to the traffic one which is really important. The visceral statistic I would like to see for each of those segments of road is how many days per year they are partially or fully flooded.

Because I already know there are a lot of cars on them. But I want to know about going to work – how many days a year I won't be able use that road to get to work? That is very visceral. That really speaks to me.

Member Davis spoke: What you are talking about is – what is the effect on critical infrastructure?

Member Northcross explained: Yes like on 880 or 101 through Marin. How many days a year are we going to lose it?

Ms. Maureen from Marin County commented: Well in Marin County already it is partially and occasionally fully at Shoreline Highway Route 1 and 101 at least 38 times in one year. That is a lot and that is a huge amount of time.

Executive Director Goldzband observed: It is more than 10 percent of the days in a year.

Member Davis added: And we haven't even started yet. But in this overall context of critical infrastructure we are talking about what sewage treatment plants are affected by that, what power plants are affected – we are not going to have any power or any water and sewage; put aside getting back and forth to your home, there might not be anything that is livable once you got there.

Acting Chair Holzman commented: I've always thought it is less about you look at a map and say – oh my house isn't affected and then you realize; oh wait a minute, I can't flush my toilet, I can't turn my power on, I can't drive around. And it is coming in 10 years.

Member Northcross noted: Yes – that is visceral.

Mr. Sanders continued: So there is a take-away in this slide. There is a lot of uncertainty and still a large magnitude in the costs. Even the lower estimate is going to be very high. Adaptation is also very expensive but worth it and we need to figure out how to leverage all these tools and also create new tools.

What we are trying to do is based on the Financing the Future Working Group, leverage your expertise in the workshops for February and using the RBD Financing Guide and the AECOM Financing Guide. This will help create the basis of what are all the financing and funding options out there. What is the universe?

We have rated some of these tools based on dollar amounts, usability, political flexibility, lifetime duration and many other criteria in order to help organize all these tools.

And the big part of it is linking the tools to specific project types that they can fund. We took this matrix we developed to one of the RBD projects. It was for a commons project in San Leandro and we asked them to breakdown this large RBD project into all of its sub-pieces and then rate which core benefits each of those sub-pieces actually is attempting to solve.

And the idea we had would be to tag the finance tools in a similar way so that you can connect them to the sub-component and start adding up all the possible tools that could be leveraged.

This is one of the ideas for our February workshop. We could have either an in-depth discussion of a couple of tools or a wider discussion about all of the tools and kind of maybe have a dot voting or some kind of workshop where we leverage your expertise in order to get at some of these questions.

Mr. Montgomery commented: I think this is good. One thing that I found when I was at the Air District on the climate tech finances we really need when you are designing something to think about the customer. Because the customers already know what is available to them.

And so for us to be researching a lot about what are the things that are out there and how do those eligibility fits with things – that is good homework and we need to do that but we need to focus equal energy on getting the customers.

And you have primary customers and secondary customers. The primary customers are the landowners that are going to be coming to us for permits. And the only reason we are in this financing-the-future game is we don't want carrots and sticks because we have the sticks. We don't have any carrots right now.

So how can we help design carrots? And we have to figure out what kinds of carrots our customers want. And then you have to convince the secondary customers, the real estate industry, the lending institutions, the folks that are not going to be using these financial tools; that they need to get behind it politically so we can identify the funds.

So that is my initial cut on where we put our energy. And through that workshop you have one aspect of it. One objective of it is to talk to who owns land in the Bay margin and what will work for them? Do they need financing? What terms of financing do they need? What has been done before?

One other concept that goes back to the presentation in general is that it is really important to talk about the loss of critical habitat and the loss of open space and recreational space for those communities because for some of the disadvantaged communities the only place they can go is down to the shoreline. Their only way to get out into open space is to get to the shoreline.

It would be good to give a nod to the fact that not only are we going to lose this transportation capacity and this housing capacity but we are potentially going to lose a lot of critical habitat and public access.

Mr. Sanders chimed in: We have that.

Executive Director Goldzband added: This is important. When we had a briefing with senior staff on the ART Bay Area Project a couple of weeks ago we went and we looked at the 80 to 85 multi-dimensional strategies to try to figure this stuff out and make it work.

We have more ways to cut this, slice it and dice than you can shake a stick at.

From BCDC's perspective the issue of public access is huge. From MTC's perspective the issue of infrastructure and highways is huge. From ABAG's perspective the issue of wastewater treatment plants and the way cities work is huge.

And we need to figure out a way, over the next five to six weeks, to put all that together in a way that makes sense to the folks who read the newspapers.

Mr. Sanders suggested: And maybe we can do another presentation about all of our planning. We looked at open space habitat and Bay Trail in talking about a regional view.

For the natural, open spaces the big picture is much worse. It is pretty sad. It shoots up immediately almost to the maximum.

Executive Director Goldzband stated: It is almost vertical. It is really bad.

Member Battalio chimed in: On this list of criteria and evaluation or objectives; I am struck by the difference between how it is being done on the Pacific Coast with Coastal Commission guidance where they focused more on four strategies: armoring, accommodation, retreat and then hybrid – adaptation strategies. And so in their planning you pick one of these thematic strategies and you roll it out and do the cost benefit.

These all seem to jump ahead to a hybrid.

Acting Chair Holzman opined: Retreat isn't an option when we think about the entire peninsula – when we think about 101 and the thing that is going to make everyone read the newspaper in five or six weeks is there no one that is unaffected.

It is not about looking at a map and just seeing where you live. Everyone is going to get affected from one or two or three or four of these things. It is inevitable. There is no safe, high, dry ground.

Member Battalio stated: That is the message we need to get across.

Member Northcross agreed: Yes that is the message.

Commissioner Jahns chimed in: I think that and what is next or what are the strategic outcomes of this information and do you pick this working group to help with those?

Executive Director Goldzband observed: This is another one of those no-good-deed-goes-unpunished things.

Mr. Friend added: It is easy for people to look at the maps and say; that is not me. I live in the hills and I am in high ground. Why are you talking to me?

But this makes clear that it really is you in all kinds of ways and that may be the biggest headline of this work. We need to show this in the newspapers and what we can do about it.

Member Northcross chimed in: We have had that same issue of high-ground people not wanting to vote to tax themselves to protect low-ground people not realizing they won't be able to get to their houses in Stimson Beach, Novato and Belvedere blew up over that as well.

So this is very real. If I did an editorial on my RBD work it would be that we need to focus on what it takes people to vote to tax themselves to pay for this stuff.

And right now the people who live on the hills don't want to tax themselves to save 101 or 880.

Acting Chair Holzman noted: That is because everyone is viewing it as high or low – high-ground or low-ground and am I in or am I out? Am I in the band or am I not? And this is completely the wrong way to look at it because everyone is affected.

Member Battalio asked: Is anyone looking at densifying areas in the high-ground?

Acting Chair Holzman replied: It doesn't matter because if you densify it you can't drive on the freeway. You are still affected.

Commissioner Jahns added: If I were you I would hope that a reporter would draw an analogy between this and the power shut-offs. I mean why would I in West Berkeley pay for wildfire mitigation in the hills? It is reciprocal.

Acting Chair Holzman added: There are 12 things that could happen but if you take the first three or four that are most understandable you are probably going to be affected by one or two or three or maybe all of those things.

Ms. Parton commented: I think if you really want to grab people and really make the case it is really about transportation networks. This is "the thing" that brings all of us together and makes the people who live in the hillsides realize that they are in this and that we are all in this together.

Member Northcross stated: I think that is spot on.

Mr. Montgomery chimed in: I think it would be really helpful to get this group's input on what we want to get out of the workshop.

We are not going to come up with $50 billion which is the estimated cost of doing these things. And we have projects that are in the pipeline that we know that cities, counties, flood districts, wastewater utilities and private entities want to build but they don't have the money.

In terms of bridging a gap between the total cost of climate adaptation and the money we need for the next five to ten years we really need to find a place to house the inventory and develop the inventory of projects that are in the pipeline that will lack funding and financing sources; who owns them, what their needs are, where they are at in project scope.

We as regulators aren't the place to do that. We are not currently managing a fund that would give us the resources to manage a potential loan-fund pipeline. When you back that question up it really comes down to who is going to be the financing authority that we are going to rely upon and how much money do we need to come up with?

So it is the chicken or the egg challenge. You need a project list to come up with an amount. You need a place to house and manage that project list. You don't know the amount you really need.

And so we have to come out of this workshop with some tangible numbers and some tangible path forward about – is it the I-Bank, is it one of the local finance authorities?

The Coastal Conservancy has the ability to leverage the Measure AA funds. Are we going to make a pitch to put some of that money aside and use it for financing purposes and not grants? Right now they give out grants.

Is it that ABAG has financing authority? There are a ton of entities out there that have financing authority in addition to I-Bank.

Member Northcross cautioned: But Mike one caution on that – respectfully I want to say that it is a bit of a distraction because the core issue where we are getting killed and we are losing all over the developed world is people don't want to tax themselves to generate revenue to pay debt service. It is sort of like before you can go to I-Bank or anybody you have to have a source of repayment.

When you look at the cost for the Bay Area adaptation they are big numbers. And it is going to require voter approval. For some of it you can get grants.

Right now SFBRA was 12 bucks a parcel. That is nothing compared to where it is going to have to go. We need to figure out how to get people to vote "yes".

And that is the core issue and that brings up justice issues. It brings up everything. I would like to suggest that is a deeper focus that we really need to address.

Mr. Montgomery agreed: Yes, I mean if you really want to go big, if you want to try and say – hey our goal is a couple of years from now we are going to have a lot of money to put into something then that is one thing.

Four, five, six million dollars you can leverage $30 million at zero interest; I mean if we start with $50 million and see how it works, if you demonstrate that there is a market, if you demonstrate that there is an economy then doesn't that help you to make a three or four or five year case?

Mr. Spencer answered: No, no – you don't have the money to pay it back. The problem is the funding. It is not the financing.

Mr. Montgomery continued: The people who borrow the money pay it back.

Mr. Spencer responded: Yes but to Mark's point; our local public agencies don't have existing funds to take advantage of I-Banks and everything else. It is about new money. And I would say it is most importantly about new money for the planning to make the case. We are not even making the case very well because we haven't done the 10-year plan on well should I spend X dollars here or there depending upon what the cost/benefit is?

Mr. Montgomery replied: Maybe I am not understanding what the needs of the customer are. But there are a lot of entities that come to me for permits and I am writing them permits. And there are entities that are borrowing money. And they are borrowing money through their general funds.

Mr. Spencer stated: That is a good point. Utilities, public enterprises yes and those are the ones that you see.

Yes there are revenue sources out there and we highlighted this in our RBD Report. We need to find those folks with assets that is public-enterprise, asset defenders and you would throw in transportation because of the amount of money that comes through the transportation funding stream; so yes there is something to leverage and maybe they need financing but we've got financing tools.

The financing is not the thing. We've have the I-Banks. I think the San Mateo Resiliency District is a great model to consider highlighting. It is the first county-wide, special district devoted to climate adaptation in the country. They have a million and a half for five years to start up. They will start January 1st county-wide. Their mission will be flood control and sea level rise.

And what they are looking at is just a core pot just to get the planning done to make the case to then go to the voters within five years to go for that parcel tax.

I would look at a county-wide organization, county-wide district that rolls up multiple counties, rolls up into some regional sense of how do we decide who floods and who doesn't? The only way that is going to be done is through some sort of regional contact.

Mr. Montgomery continued: This is really helpful because if the workshop is looking for local funding solutions then it is a very limited discussion.

If the workshop is looking at how do we get local and state-level participation? Then that may be a different discussion.

If we are not looking to talk about accessing state funds or if we are not looking to accessing federal funds then it is a fairly narrow discussion because you are talking about parcel taxes, you are talking about very narrow solutions. You are not talking about financing if you are just talking about grant money.

Mr. Spencer replied: That is initially what we are talking about. On the enterprise side those revenues can – they can fund their fair share of those projects but you are not going to get East Bay MUD protecting their wastewater plant to fund an entire project that is benefitting a whole bunch of other folks.

So yes it is a piece of the pie but you are going to need other funding.

Member Northcross gave an example: In real-world experience West County Wastewater District a regional board that is one of our clients and North Richmond RBD – we have been in the depths since last March on working with them on sea level rise and the instinct is to just to go silo it.

We can build a half-mile, horizontal levee at this cost and protect our wastewater treatment plant and let Chevron, East Bay MUD and the public-services landfill all go to hell.

The Board doesn't want to do that but you have get into the table. You are also looking at how do we go through a 218 process with our ratepayers to fund $10 million for even the half-mile, horizontal levee when we can't even tell the ratepayers when they are going to need it?

As a result you come up with this notion of – in the public sector the five-year CIP is like that is our mentality. This goes to what you guys are trying to deal with.

And some of the push-back from the elected on their board which has been good push-back has been – this doesn't belong in our five-year CIP. Tell me why we are going to need to fix sea level rise in our five-year CIP.

And our five-year CIP is what we go out to 218 processes to raise rates so we can go into your group, the Regional Board, and say we can pay for it.

So these are the challenges we are up against. And it comes back to people right now in the Northern Hemisphere don't want to pay for climate change. Larry I want to do a presentation sometime next year on this and we are collecting a lot of data.

Mr. Friend chimed in: We know piecemeal is not going to work. We have talked about that at prior meetings. We have five-year CIPs and we don't have 50-year CIPs which is something that maybe we need to have.

But I think we are talking about two very different things here that are completely separate and completely inter-related which is making it tough.

One is – how do we pay for all of this stuff? And there is a lot of knowledge at the table and mechanisms and so forth on how to do that and how we figure out the costs. And the other is – how do we get the public willingness to do that?

There are 190 some odd countries that have signed on to the Climate Accords. There are hundreds of companies that have signed on. Hardly anybody is on track even the ones who say they know it is important

And we have the question of how do we get people to be willing to tax themselves to do this? A lot of us have been struggling with this. There is something analogous to the attack on Pearl Harbor that overnight flipped national consciousness and produced unified commitment across the board to do something not just difficult but impossible at that case.

That is not our option. We can't generate that. We can't wait for that. How do create that kind of broad, social commitment to do very difficult things including taxing ourselves? This has to depend on a political commitment to do that.

You've got the seeds of it here in this notion that everybody is affected by this. It is not just those people down in the flats. I am not immune. It is not just my house. It is my roads and my airports and my hospitals and my food. I am affected. We are all affected. Existing mechanisms don't allow us to deal with this kind of existential issue. So we don't just need the money. We need different mechanisms for how to do this and all of that depends on some kind of new political formation which sounds like one of the two things we have to do in February.

We have to generate something so that the reporters pick up a story that tells the story we want to tell.

Commissioner Jahns suggested the following: I think we should put more attention on bringing people into the conversation and community groups and environmental justice groups. That is what is going to create the message and create the headlines for this.

Mr. Friend offered a caveat: With a caution because if it is the environmental justice groups clamoring for justice then the people in the towers pull up the draw bridges.

Commissioner Jahns stated: I think we shouldn't presuppose. It can be done strategically but maybe BCDC can help bridge that divide.

Mr. Friend chimed in: It would be good if the workshop could offer some range of options as solutions because as we saw with BARC's response to this presentation was a lot of push-back and frustration that all you are doing is throwing a problem at us and you are not telling us how to solve it.

If we have the workshop it can't be entirely about generating press and political anxiety in hopes that there is some money that is going to fall from the sky. We have to say – here are three or four tangible options and they all involve different people paying; some of them are going to be property owners, some of them are going to be county-wide tax payers and some utility users.

I was in this because I was hoping we could get some money out of Sacramento. We have a good administration to try and get that money.

Acting Chair Holzman announced: I think before we lose any more time we did want to see if there is any public comments on the Agenda.

Mr. Brian Benn of Environmental Risk & Financial Solutions commented: I wanted to ask if you have included risk funding as one of the funding sources? You also mentioned user fees for critical infrastructure but one of the concepts that we presented in our RBD Finance Report was basically creating a CalPERS for essential infrastructure accruing for the existing liabilities that new governmental agencies have to start accounting for.

So you've got an immediate accounting requirement in the fiscal responsible things to start accruing for that. You could look at all of the elements of essential infrastructure across the board which speaks to the issue of everybody's connection to that and combine that with a community choice insurance which is the risk-funding piece as well. So you drive adoption of risk funding and by pricing risk into communities you let communities decide what is most important to spend money on for climate adaptation and you drive adoption and funding over time. So you build up funds as a way to get people to start thinking about risk pricing and moving into areas that are ideally lower risk.

6. **Preview of Possible Draft Questions for Use In A Public Workshop As We Move Forward Toward Creating A Regional Shoreline Strategy.** (This was touched on at various times during the meeting)

7. **Next Steps.** Executive Director Goldzband commented.

Michael and I are going to put our heads together next week with various staff and try to figure out something. We will get back to you before the end of the year with ideas.

We will probably just have a series of notes going back and forth in January but I expect that we'll be back together again on the first Thursday in February and preview what it is we think we are going to be able to do.

8. **Adjournment.** There being no further business, Acting Chair Holzman adjourned the meeting at 12:19 p.m.