

Scott Lewis ([00:00:08](#)):

Preservation. Okay. Welcome. Welcome, everybody. Yes. Thank you. I hereby declare Politifest 2023 has begun, huh? Yes. There we go. There's some fans. <Laugh>, you've been waiting. My name is Scott Lewis. I'm the CEO and editor-in-chief at Voice of San Diego. And I'm really pleased to welcome everybody. I don't know how many of you get into the ocean very often. I was just in today. I think people, you know, you look out there, you see water, you see the surface, you see the reflection underneath every bit of ocean. There is a special world. There's life, there's species, there's plants, there's pollution, there's structures, there's all kinds of crazy stuff you put on snorkels. You go anywhere, you'll see some amazing things. But one thing you learn about the ocean very quickly is you never turn your back on the ocean, right?

Scott Lewis ([00:01:31](#)):

Never turn your back on the ocean. 'cause The ocean will get you. And I feel like today's presentation is all about reminding us all to not turn our back on the ocean. And that is in a lot of ways, an important message. And especially down here where we see so much of the problems of our society and our, our cross border relationship and the, and the industry, and the lack of development and lack of support and infrastructure that has polluted this community far too much. But today, we're here to talk about why we need to keep our eye on the ocean and where it's coming and what we're gonna do to prepare for the things that might be changing over time. And I'm really excited to, to talk about that. First welcome to Politi Fest. This is California's biggest challenges. We're doing this in partnership with Cal Matters. Neil Chase and his staff from Cal Matters are here. Welcome guys. Thanks for coming down.

Scott Lewis ([00:02:32](#)):

In case you are not familiar with Voice of San Diego, is anyone not familiar with Voice of San Diego? Come on. Right. it's a non-profit news organization committed to holding a public officials accountable and giving you the public the information you need to be advocates for good government. As a nonprofit, we depend on members and donors like you to make our work possible. Thank you for your support. Who's a member here? Well, you all are if you came right, there you go. I'd like to take a minute to recognize our sponsors who make Fest possible. I came up with Politi Fest in 2011 as a, as a kind of field day. We were gonna have tugs of war, I think they called 'em, plural dunk tanks. We had snakes and turtles and all kinds of stuff. It was supposed to be a lot of fun outdoor thing.

Scott Lewis ([00:03:19](#)):

What we realized is that what people wanted most was the debates were the debates and the discussions and the arguments and the fun and just the chance to see each other. And that's how it's evolved over time. But now we have actual people who help us make it possible and make sure that we make the bills that we can pay the bills. A special thanks this year, especially to the College of Arts and Sciences at the University of San Diego. They're now our partner for the sixth year in a row. Thank you to them. Thanks also to the A A R P Burnham Center for Community Advancement, the San Diego County Water Authority, the San Diego Foundation, Atlantis, California American Water, Cox Communications, the San Diego Housing Federation, Burnham Moore Center for Real Estate at U University of San Diego's No School of Business, planned Parenthood KY Development, climate Action Campaign. No Vote Brewing. Thanks for having us today.

Scott Lewis ([00:04:16](#)):

And our media partner is K P B Ss, a special thanks to hit key Development and the Climate Action Campaign for making this possible. Now, our journalists are not performers. They're not rock stars, but they've done a great job preparing some really great discussions, and they're gonna perform a lot of acts of journalism over the next couple days as we try to gather insights, hold people accountable, make sense of what they say, and help you understand your community better. And I would like to welcome MacKenzie Elmer, who's participating in her first politic fest in this role. Very excited. Last year she was distracted by a wedding, her own wedding somehow, but this year we've got her very excited. Mackenzie Elmer. Yes. Panelists? I don't know. It's up to

MacKenzie Elmer ([00:05:04](#)):

You. Okay. We'll have our panelists sit. Okay. Is this on? So we need to somehow get wrapped. There. It is on. Oh, it is on. Hello everyone. We did a little interesting. Yeah, just come on, come on down and then I'll introduce our lovely panelists. But yeah, Scott, go ahead. I'm sorry.

Scott Lewis ([00:05:28](#)):

<Laugh>. I'm sorry. I forgot one thing. If you would like to answer que ask questions, I would like to invite you to do one thing. Please download the app. It's at Cvent. You can search in your app store CNT and look for Fest 2023 in there. And in that app, once you sign in you can ask questions in the app or you can you know, see the schedule, all those things. If you would like, there are pencils and paper over here and you can say, you can give me your question from that. But that's a great place to drop your questions and also follow what's happening with pva. I'm sorry, I will no longer interrupt you unless something crazy is happening.

MacKenzie Elmer ([00:06:08](#)):

Sounds good. In case the, the c comes for us in the middle of this talk. Yes, please think of questions. We definitely wanna save some time at the end for the public to participate. But without further ado my name's Mackenzie Elmer, like you said, I'm the environment reporter at Voice of San Diego, and I am stoked thank you to be <laugh> to be kicking off Litaf Fest here for 2023 in the southernmost of Southern California towns, Imperial Beach. And thank you all for braving the traffic to join us as well. And so, like Scott said, p politics is about unpacking segment of California's biggest challenges. And this year it's all about housing and water. And that includes, you know, both the privilege and challenge that we all face living with our neighbor, the Pacific Ocean. You know, and most of scientists agree that you know, humans activity is warming the planet.

MacKenzie Elmer ([00:07:01](#)):

And that means ice is melting, oceans are warming, and when you heat something up, it expands. And in a nutshell, that's why sea levels are rising. So worst case scenario, we don't dramatically cut fossil fuel use. San Diego could see up to a foot more water by 2033 feet by 2050 and over and by 2100 over 10 feet. So it turns out Nova Brewing was a pretty good spot for us to pick, to have this conversation because I looked at the NOAA sea level rise maps, which tell you, you know, what's gonna flood in the future. And for some reason we're like safe here for the next 77 years. So if you just wanna hang out, we'll be, we'll be safe from sea level rise here. But I'm really excited to talk about sea level rise here and the impacts of the communities in San Diego and this impending doom that we're all facing and what we're gonna do about it.

MacKenzie Elmer ([00:07:48](#)):

So let me introduce our lovely panel first. We have Ed Spriggs, if you could wave your hand, he <laugh> he served on the local Imperial Beach City Council for 10 years until 2022. He now runs the Black Alumni Scholarship Fund at the University of California San Diego, his alma mater. And actually like all of our Alma Maers, which is interesting, we're a very U C S D heavy panel up here. But as councilman, he led the city through multiple rounds of assessing the city's vulnerability to sea level rise and planning for the future coastline. We also have Terry Gaster, land city councilman for the city of Del Mar, and Alma, also the former mayor of Del Mar. And she is a scientist and professor of computational genomics. So if you wanna talk about sea urchins, she's got some really awesome stories about that.

MacKenzie Elmer ([00:08:39](#)):

So she develops tools that help us read D n A and improve medicine, all that Scripps Institution of Oceanography. Also joining us is Laura Walsh. She is the California Policy Manager at Surf Writer Foundation, which is a national environmental advocacy group that focuses on public beach access and protecting natural shorelines and ocean health. And she formerly worked here in San Diego as their lead policy manager. So she intimately knows the ins and outs of everything going on here, the coastal challenges and the statewide perspective now of what's happening to the can capitol. And last but not least, Holden at the end there, Holden, Leslie Boyle Bowl. I'm sorry. He is a physical oceanography researcher at Scripps Institution of Oceanography Coastal Processes Group. And he spends his time working with renowned experts on sea level rise. And oh, thank you, Scott and <laugh>. And he walks the San Diego coastline and shoreline with all kinds of instruments to better understand, you know, how sea level rises eroding our beaches and, and what we can do to protect the impacts of the future.

MacKenzie Elmer ([00:09:40](#)):

So we're gonna have a great conversation today. And to kind of kick it all off, I wanted to hand it to our Imperial Beach representative here and just have him explain what he knows about the sea level rise impacts to here in Imperial Beach. Kind of late set the scene for us. We're sort of in a, we're at sea level rise, really in Imperial Beach. So, and we're surrounded by water on three sides, as you may notice, the Tijuana River Valley. So please please explain your microphone should be on, everyone's should be on. Alright,

Ed Spriggs ([00:10:12](#)):

Great. Well thank you everyone for coming and thank you Mackenzie for getting us all organized up here. We'll see how effective that effort is shortly. <Laugh> <laugh>. My name is Ed Spriggs. I served on the Imperial Beach City Council from 2010 to just this last December 2022. So it's actually 12 years, three, three terms. I decided not to run for a fourth term because new people need to come in with new ideas et cetera. And I needed to move on and work with trying to get more young African Americans into uc, San Diego from all over the state and country, and into our San Diego community which will help revitalize our, our diversity here. But I am one of the few African Americans who have spent a lot of time dealing with coastal land use management and sea level rise issues.

Ed Spriggs ([00:11:15](#)):

As a former attorney and someone with an economics background and a science background, I've been privileged to be at legal workshops planning planning workshops obviously the political ones and the science workshops on the questions of sea level rise, et cetera. I served as member and chair of the Tidelands Advisory Committee here in Imperial Beach for several years before I was elected to the city council, and participated in the development in 2015 of Imperial Beach's Sea Level Rise vulnerability

assessment, which also developed one of the first trigger or threshold based adaptation strategies based on actual measurable events taking place. And then what do you do about them in terms of adaptation?

MacKenzie Elmer ([00:12:16](#)):

Now, ed, I'm gonna interrupt you here just so we can, there's a lot of terms we're throwing out here, you know, like adaptation and vulnerability assessment, and these are all things that we need to explain to our lovely audience. So can you talk about, you know, why cities have to do foreseeable rise planning and, and talk about why you have to do adaptation planning. What is adaptation planning?

Ed Spriggs ([00:12:39](#)):

Well, science is pretty, scientists are pretty well uniform on not many issues, but certainly on the issue of global climate change, global warming, and the immediate consequence, one of the immediate consequences of that climate change is sea level rise. It's not as obvious to us as storms that are increasing in duration, in frequency and strength or wildfires. These are affecting the globe. Sea level rise is a lagging event. Those of us who have been responsible for the wellbeing of low lying coastal communities like Imperial Beach which Mackenzie correctly said is surrounded on three sides by tidal waters have to take this into account as we do our planning for the future of the city, the planning involving master planning et cetera. We also have an opportunity to work with the California Coastal Commission to develop local, local, what they call local coastal programs, which is a way where local communities can be delegated authority and responsibility from the coastal commission to regulate coastal land use to a large extent on their own once there's an approved local coastal program. This is big for local governments because it gives them the ability to have to manage things without everything having to go, every new development, every new change in plans, et cetera, having to go to the coastal commission for resolution.

MacKenzie Elmer ([00:14:33](#)):

So Ed, if I could just interrupt, we're kind of wanna have a conversation here with all of the panelists. So so what you're saying is these local coastal programs are sort of help the re the, each city has to make these plans for sea level rise, basically. Right. And they have to get them ver like verified by the state. Maybe Laura, you could jump in and talk about why we have these, like what the state demands cities to do to prepare for sea level rise. And, you know, the, and what that's based on in terms of like the coastal act and the state, the state law that makes us do this.

Laura Walsh ([00:15:06](#)):

Yeah, like I guess to recap a little bit, you know, the seas are rising, that's very well established science. And when we say, you know, the sea could rise or is very likely to rise one foot by 2030, we mean vertical foot. And so in a community like Del Mar where there are places where the first row of houses is sitting at like the edge of a bowl, if the sea comes and hits that edge of the bowl and goes over it, you're, you're talking about maybe hundreds of feet of horizontal flooding. And so the implication of sea level rise is, is flooding <laugh> as well as waves that are higher and lapping on coastal bluffs and accelerating erosions erosion, which has a lot of implications on coastal bluffs. Other implications to coastal resources, right? The sea is moving into wetlands. How are you gonna maintain that hydrological ecological function of the wetland if it's inundated with water? So water, sea level rise as well as the sensitivity of coastal resources was recognized a very long time ago. And in 1972, the voters of California passed the coastal Act. And this is the, a paramount piece of legislation in California. It's like the Clean Water Act, but for coastal resources. And the purpose of the coastal Act was to balance the interest in

public access, maintaining public access to the coastline, and maintaining coastal resources that are sensitive to development pressures. Balancing that against, you know, very well-known development pressures. Right, right.

MacKenzie Elmer ([00:16:48](#)):

Yeah. And isn't this kind of, didn't the coastal act sort of set like this pressure point that we're all dealing with right now in terms of sea level rise? It's sort of like set a boundary in terms of we need to have the public be able to access the beach and enjoy the beach, but we also need to protect private interests. So it set some sort of line in the sand, almost literally dividing, okay, we are allowing for some public beach, but we also allow for some private beach. Is that kind of the, the sticking point for where we're at in, in trying to, because the point is, is as the seas rise, does that not affect and sort of start to eat up the public portion of the beach

Laura Walsh ([00:17:30](#)):

Really? So a couple things, if I may please.

MacKenzie Elmer ([00:17:33](#)):

No, yeah. Correct me if I'm wrong. In

Laura Walsh ([00:17:35](#)):

California's constitution it's very well established in court decisions administrative action in California, the mean high tide line delineates where the public trust boundary is, meaning if you are seaward of the average location that the tide lands on, then you're in public land. So that's established, and we can talk about that in a second. But the purpose of the coastal Act rather, is really to maintain public access and protect coastal resources in light of development pressures specifically, however, so the Coastal Act it like the heart of the Coastal Act, surf Fighter says is really the access and recreation policies which are important. If you picture places like Malibu, Solana Beach, you know, plenty of places in San Diego, right? Where if you allow homes to be built adjacent to one another along the coast and don't provide for access, how is the public realistically going to access the coast?

Laura Walsh ([00:18:41](#)):

Well, the coast says the state has some level of review of these projects and can make sure that we provide for, for public access. But I think what you're referencing McKenzie, is there's also a coastal hazard section of the Coastal Act. Oh, okay. Who says we shouldn't be placing people in flood zones and we shouldn't, you know, we don't, the state doesn't wanna continually bail people out of flooding scenarios. We don't wanna build there. And so there's a very important section of the Coastal Act that also says development should minimize hazards and it shouldn't be built in places that are hazardous. And sea level rise is very much changing where locations that are hazardous, right, there are places that weren't a flood zone 20 years ago that are gonna be flood zones. Yeah.

MacKenzie Elmer ([00:19:27](#)):

In your time and maybe Holden you could jump in with some, with some science here and kind of lay down maybe a foundation that we should have started with of just what do you know having worked in both Imperial Beach and in Del Mar, very different landscapes. We have Delmar High on the cliffs, Imperial beach at the sea level, talk about the sea level rise impacts those cities are facing and what we know about that.

Holden Leslie-Bole ([00:19:50](#)):

Yeah, sure. Absolutely. Well first of all, thanks so much Mackenzie for organizing this panel. Thank you voice of San Diego for hosting Polus 2023. Really great to be here with all of you guys. So as Mackenzie mentioned in the introduction, I'm a PhD student at Scripps Institution at Oceanography in the Coastal Processes group with Mark Merrifield and Bob Gza and Adam Young where our main mission is to understand what's happening along our coastline and we do a lot of baseline observations to try to characterize the local rate of sea level rise, the flood risk, the patterns of coastal erosion, that kind of thing. So, you know, we got a little bit of the scientific background in the introduction. We know that sea levels are rising, but let me just put some numbers on it for you guys. So carbon dioxide is a greenhouse gas.

Holden Leslie-Bole ([00:20:30](#)):

It traps a lot of heat. And the two main effects of that on the ocean are that there's thermal expansion of the ocean. The ocean has uptaken 90% of the heat that has been associated with human caused climate change. And also there's been destabilization of ice sheets and that those two factors are leading to sea level rise that has already been about a foot since pre-industrial times in San Diego. We have a tide gauge in the San Diego Bay that's been maintained since 1906 and we've been able to see this pattern over time. Imperial Beach and Del Mar are both at risk, but in different ways from this pattern. So right now we're kind of in this relatively stable period in the 2020s before there's a fairly rapid acceleration in sea level rise starting in the 2030s. The historical rate has been around 1.7 millimeters per year for most of the 20th century in terms of additional water level.

Holden Leslie-Bole ([00:21:20](#)):

And that has already accelerated within the last decade to about 4.7 millimeters per year. And we'll continue to do so. But the important thing to think about is that this means that not only is the water level gonna be higher, but when you have high tide on top of that, and then you also have a storm on top of that, there are places that are gonna get wet that have never been wet before. And we look at that in terms of the, the sunny day flood percentage risk. And right now we're thinking that there could be potentially up to 49 days extra of flooding between the decade of 2033 to 2043 that don't exist right now. So right now, the important thing is that we need to understand what the baseline is. And for, for Del Mar, I think that that looks like characterizing the conditions of the bluffs, understanding the patterns of erosion.

Holden Leslie-Bole ([00:22:06](#)):

Adam Young in our group has done a lot of really phenomenal work on characterizing that. And bluff erosion is something that's really hard to model. It happens in different places at different rates. The record of historical erosion is not necessarily a good indicator of what's gonna happen in the future. And then with Imperial Beach, there's a different set of challenges already, as Ed has mentioned, and I'm sure he will talk more about, there's been a lot of flooding from just high tides, but then when we had extreme winter waves this past winter, there's even more flooding on top of that. So we just need to consider that. Right now we're seeing kind of only the tip of the iceberg, and this is kind of a storm that doesn't have calm after it, you know, sea level rise is gonna continue long after 2100. It's gonna continue even if temperatures stabilize. And we need to be really prepared to understand what's happening from a scientific perspective, observing what the baselines are right now, and then monitoring how that changes over time.

MacKenzie Elmer ([00:22:57](#)):

Yeah, it was really well said. And I think that's why we're here in Imperial Beach, right? Isn't anybody from Imperial Beach? You raise your hand. Okay, well you should come to Imperial Beach in January when you have the highest tides of the year and some, and then pair that with a storm. And you see some pretty massive flooding already on those like first streets next to the beach. Right? And for Del Mar you kind of have this different problem. Right. And I was gonna ask Holden maybe to explain a little more of the interaction with, with talk about just briefly, how does Sea of Rise affects like property in Del Mar when you have these huge cliffs that, you know, it's like there's no houses right on the shoreline. What, what does the wave energy do to the, or sea level rise do to those cliffs?

Holden Leslie-Bole ([00:23:39](#)):

Yeah, absolutely. So there are two main causes of cliff failure that we observe. One is from waves, basically hitting the bottom of the bluff and undercutting them. And that can destabilize the cliff. And then also you know, these are, it's made of sandstone that's fairly porous and during heavy rainfall events and also with stormwater runoff, the sandstone can get kind of hydrated and start to fail along those lines. So it's a, it's a very complex system, but what we do know is that the higher the sea level is and the higher the tides are, the higher percentage of the time they're gonna be waves hitting the base of the bluff. And this is something that's happened historically throughout geologic time. You know, sea level used to be about 200 feet lower during the last ice age and has been rising consistently since then. And the California coastline is, has historically been an erosional environment. So we know that if sea level rises, we are likely to predict more bluff erosion and cliff failure. And that could have a pretty important impact on delmar's planning process, right?

MacKenzie Elmer ([00:24:37](#)):

Like the, the Delmar Cliffs are like an ancient shoreline that used to be exactly as high as the water was. It's very, very fascinating stuff. And so this is kind of the, the problem, right? So we have cities that are facing sea level rise and they have to plan for it because the state says that they have to and they do. So under these, this what we started off talking about, these local coastal programs, they're called some sort of policy document that explains where we're at, you know, where the city's at risk from sea level rise and what are you gonna do about it. So let's get into some of the ways that the cities are defending their property from the ocean, basically. And if we, Terry, why don't you start off with Del Mar? Yeah. What,

Speaker 6 ([00:25:17](#)):

Thank you Mackenzie. You know, it's a real pleasure to be up here. You know, ed and I have sat next to each other in the shoreline preservation working group for a while. Holden, I feel like I'm, you know, your professor mother here, <laugh>. 'cause I'm also a professor at Scripps and then Laura Walsh, you know, we've interacted with all the sea level rise planning really since 2014. It's been 10 years that we've been looking at this. In 2013, the city of Del Mar wrote a grant proposal to the state to do the planning and probably Imperial Beach did the same. Yeah.

MacKenzie Elmer ([00:25:53](#)):

So,

Speaker 6 ([00:25:53](#)):

So Ed was down here in Imperial Beach. I chaired Del Mar's sea level rise technical advisory committee. And at our very, very first meeting the other people around the table realized I was both the Scripps professor and interested in Del Mar. And they said, well Terry, will you be chair? Little did I know what I was getting into <laugh>? Well, long story short, fast forward about two and a half years, we had met, we were working with consultants who had kind of boilerplate solutions, none of which fit for Del Mar. We as a committee were handed an adaptation plan for the city of Del Mar. We read this and the next thing we knew, there were hundreds of people at our next committee meeting saying, you're not planning well for Del Mar. This is not good for my house. Well,

MacKenzie Elmer ([00:26:48](#)):

What kinds of things were they saying in your Exactly what, what, what were they telling you you had to do?

Speaker 6 ([00:26:51](#)):

So they, they were saying basically managed retreat that everything that it was, was in the way and was going to be flooded sometime in the future. Had to acknowledge that now and promise that it would never, ever, ever get rebuilt if it ever got flooded. Now. So move

MacKenzie Elmer ([00:27:08](#)):

Away from the coastline. Exactly.

Speaker 6 ([00:27:09](#)):

Basically,

Speaker 6 ([00:27:10](#)):

However, my last name is Gaster Land and Gaster Land is a basically a county in Freeland part of Holland. And I was like, wait a minute. You know, if Holland did managed retreat, all of Holland is below sea level, pretty much the Netherlands, but it's not below water. So I started looking at solutions in the place where my great-grandfather came from. A big solution that works there is something called the sand engine. A place where a lot of sand is engineered. It's put in a particular location, and then the natural coastal processes carry that sand down. We recognized in our planning that nourishing the beach was the very best way that we could keep protecting homes. And

MacKenzie Elmer ([00:27:58](#)):

What is nourishing a beach? What is that? Putting

Speaker 6 ([00:28:00](#)):

More sand on it.

MacKenzie Elmer ([00:28:01](#)):

Okay. And

Speaker 6 ([00:28:01](#)):

In fact, the Army Corps of Engineers is now going to be doing that in, in Sanitas, Carlsbad and Solana Beach and the sand flow southward. So it's gonna come to Delmar. But more importantly, even back in



the 1980s, Delmar had a certified local coastal program, which meant that all of our zoning code had been reviewed by the Coastal Commission. And the Coastal Mission Commission said, yes, this is good. So as long as somebody builds something that is within the terms, it has no exceptions, then Del Mar can make its own local decision. Solana Beach does not have a certified local coastal program. Every house that gets built in Solana Beach goes to the coastal commission for approval. Right.

MacKenzie Elmer ([00:28:46](#)):

So just to back up again, 'cause these local coastal programs, when I started reporting on this, I was like, wait, what is a local coastal program again? Like, so it, it basically says if we can get our plan for how we're going to adapt to sea level rise approved, the local coastal program is actually

Speaker 6 ([00:29:03](#)):

All development.

MacKenzie Elmer ([00:29:04](#)):

Okay? Right. The

Speaker 6 ([00:29:04](#)):

Sea level rise adaptation plan is specifically how are we going to add to our local coastal program, right. All of the things that we're gonna do to adapt, accommodate, or retreat.

MacKenzie Elmer ([00:29:16](#)):

So it means you can develop property with that under this local coastal program. Yeah. If what happens if a city doesn't have a certified local coastal program, if they're, then the

Speaker 6 ([00:29:25](#)):

Coastal commission has total control over every single thing that gets built in that city. Right.

MacKenzie Elmer ([00:29:28](#)):

Within

Speaker 6 ([00:29:29](#)):

A mile of the beach.

MacKenzie Elmer ([00:29:30](#)):

Right. Okay. And so what are some of the struggles Delmar has had with getting their local coastal program approved by the Coastal Commission?

Speaker 6 ([00:29:38](#)):

Yeah, it all came down to one sentence. Well, after that consultant delivered us the report that just was not for Delmar, I reversed engineered Imperial Beach's adaptation plan, you know, got that P D F turned it into a Word document and our little committee rewrote it entirely. The Coastal Commission was completely happy with everything. We dealt with wetlands and river. No new development in a flood zone, no new development is a key there. And our beach area in the, on our beach, the front row of

houses, as Laura mentioned, is higher than 600 homes behind it. So that front line in the eighties, we negotiated with a coastal commission. You know, I was in college on the East coast at the time, but the people in Delmar were doing this negotiating. And they got the coastal commission to agree that for public safety purposes, private sea walls on the private property, well, east landward of the mean high tide line it's a shoreline protection area.

Speaker 6 ([00:30:41](#)):

It's an actual line in the sand could be built. So that's the beach. We incorporated that. And then we have the coastal bluffs that Holden was describing back in 1885 when Delmar was laid out. The, the homes that were closest to the edge of the bluff were 500 feet away and then they put a private railroad on it, you know, and that's a problem today. So we're, what we acknowledged in 2016 when we rewrote our plan was that railroad has to come off the bluff. The railroad is public property and a public asset that must be relocated for the public good. So we really looked at things in detail in

MacKenzie Elmer ([00:31:22](#)):

This way free. Feel free to jump in Ed if you had something to add.

Speaker 6 ([00:31:24](#)):

Yeah,

Ed Spriggs ([00:31:24](#)):

Yeah. I'd like to, I'd like to pick up on a lot of the points that have been made here by everybody so far. What I was driving at in my first comments is that for Imperial Beach, this is a question of survival. In the, in the medium term, long term, when those ice packs melt we are all gonna have to be far away from the present coastline because it will be covered just as it was in eons in the past. But the question is what do we do between now and then? This, this is the question that California faces, it's the question that Imperial Beach faces. For us, a certain amount of sea level rise, unless we're able to defend against it, will destroy our municipality because we are 90% within the coastal zone. No part of Imperial Beach is more than about 30 feet above sea level.

Ed Spriggs ([00:32:31](#)):

And our economic base is the commercial and real estate development that is along the coast, all of which is protected by sea walls or what you call rock revetments, which are rock walls. So for us, this question of managed retreat, which is one of the philosophies that is motivating many of those who have a primary concern about protecting the beaches as a, as the prime objective has serious implications for Imperial Beach. Because for us, survival runs directly against the idea of quote managed retreat. Now this idea of relocation away from the coastline is the absolute number one challenge facing the developed portions of the California coastline. I, I chaired the, the local cities group, the Coastal Cities group for many years with the League of California Cities. And many, many cities, coastal cities in California have a very similar challenge.

Ed Spriggs ([00:33:51](#)):

A lot of their development, a lot of their tax base, a lot of their revenues, a lot of their tourism is based on managing the coast, maintaining the beaches, but also maintaining their economic vitality at the same time. So we, to conclude, there is no clear path to large scale relocation in medium and high density coastal areas to somewhere else. We have nowhere else here, Imperial Beach, many other

places may, but the cost of that relocation is, is horrendous. We need to work together with those who want to absolutely protect the coastal environment and the beaches in order to come up with an accommodation that meets the realistic re the realistic situation in California where highly developed coastlines are not going to be relocated anytime in the near future. That

MacKenzie Elmer ([00:35:02](#)):

That's a good point Ed. And I wanna lower it a kind of weigh in on the, as a, if you would, as a counterpoint, kind of what is Surf Rider's opinion on managed retreat as an option for, 'cause there's basically, there's various things that cities can do to combat sea level rise, right? Maybe you could talk a little bit about that and, and this managed retreat option that cities seem to hate

Laura Walsh ([00:35:21](#)):

<Laugh>. Yeah. Well it, it's funny when you talk about like, oh, what's gonna happen with sea level rise? And all of us as panels panelists jump to manage, treat, like, I think like backing up a little, you have to think about, okay, if the sea rises, who does that affect and what assets is it affecting? Right? Like your, is your lifeguard tower maintainable? Is your bike trail maintainable

Speaker 6 ([00:35:44](#)):

Your sewer lift station, your

Laura Walsh ([00:35:46](#)):

Sewer station is, you know, public infrastructure or is it private property getting affected? What are the things that are getting affected? And I think Surf Rider weighs in on some of those options because we see a lot of public resources getting affected. And we think that the longer you have the long, the longer time period, you have to set a long-term plan in motion, the more likely public resources are to get protected. Because private property owners tend to have a lot of resources and legal tools at their disposal to defend their assets. Whereas public resources need to be planned for in a very process oriented way. And if you picture, you know, seas rising and encroaching land where once a certain area of land is flooded, it becomes a lot harder to enact certain strategies. It's much easier to dump concrete there than to sort of put a natural do system or what we call living shoreline.

Laura Walsh ([00:36:46](#)):

So, because the most obvious implication of sea level rise to us is that coastal squeeze is happening, what's the first thing to go the beach? And we think California in a lot of legal and court proceedings has decided that it does want to try to defend the beach. And there's really only one good way to do that in the long term. And that's that you have to move development back. And I emphasize long term, because I think where manager Tree or moving development gets controversial is in the short term is what does that, what does that mean for us in my property today? And I think that's where there's a lot of work we could all do to figure out what are the short term tools that are reasonable to each other.

Speaker 6 ([00:37:31](#)):

Yeah. And I'll return to a question that Mackenzie had asked, you know, why did Del Mar not get its adaptation plan certified by the Coastal Commission? Ed is Imperial Beaches certified.

Ed Spriggs ([00:37:44](#)):

We have an old we have an old L C P local coastal program that's about 20, 25 years old. That's still in effect. It has not, we've attempted to update it. Essentially the staff of the coastal mission has been sitting on our draft for the last year. Okay.

Speaker 6 ([00:38:03](#)):

Which is, which is

Ed Spriggs ([00:38:04](#)):

The problem with the Coastal Act. Yeah.

Speaker 6 ([00:38:05](#)):

Coastal

Ed Spriggs ([00:38:05](#)):

Act was written in

Speaker 6 ([00:38:08](#)):

76, 19 74. Yeah,

Ed Spriggs ([00:38:08](#)):

1976 before anyone had a clue about sea level rise. Really. And it hasn't been updated to address how we deal with these conflicts and all of the development that has taken place along the coastline of California since 1976. So this, this is a big problem. The coastal commissioner's trying to wing it, basically interpreting the coastal act to include sea level rise provisions that they're essentially making up

Speaker 6 ([00:38:36](#)):

What, what it came

Holden Leslie-Bole ([00:38:36](#)):

And this causes a lot of conflict. Yeah.

Ed Spriggs ([00:38:38](#)):

When cities are trying to get their local coastal programs approved. Yours wasn't ours.

Speaker 6 ([00:38:43](#)):

No, no. Our our, we have a local coastal program. It's approved just like yours. It's 30 years old. Okay. That's the problem. Our sea level rise planning update to it, local coastal program amendment was not approved. That's what I meant. Yeah. And so, so what happened in Delmar, we put a stake in the ground and said, for existing homes, the Coastal Act gives private property the right to protect private property within limits. You know, we have to give access to the beach. So we said we will not include in our adaptation plan for sea level rise a clause that says homes that are vulnerable to sea level rise in the longer run must record a deeded restriction with transfer of property. And

MacKenzie Elmer ([00:39:31](#)):

What does, what does that mean or do?

Speaker 6 ([00:39:33](#)):

The deeded restriction would be an acknowledgement that future sea level rise may flood this home that would've wiped out people being able to get house insurance, homeowners insurance, which we're already having problems with anyway here in California. And so it

MacKenzie Elmer ([00:39:49](#)):

Affects property value and

Speaker 6 ([00:39:51](#)):

Built into the flood maps. Anyway, the FEMA flood maps show exactly where historical flooding is gonna be, and really the sea level rise planning overlaps with that. Well,

MacKenzie Elmer ([00:40:01](#)):

I think

Speaker 6 ([00:40:01](#)):

We said no and the Coastal Commission said, sorry. Yeah. And we withdrew our plan so that they could not approve a conditional version of the plan that they edited for us. We just said, Nope, you're not touching our plan. And we added it to our community plan. So we're building that living levy along the river. We have grants now to plan for that. We have our sand nourishment, no new development in places where the wetlands can migrate upland as the sea level rises. But

MacKenzie Elmer ([00:40:32](#)):

Isn't it true, so, and maybe Holden can jump in here too. I mean,

Speaker 6 ([00:40:35](#)):

The,

MacKenzie Elmer ([00:40:36](#)):

The fact of the matter is it seems that the beach is still shrinking, right? Because sea levels are rising, our beaches

Speaker 6 ([00:40:41](#)):

Are wider than ever <laugh>. Okay. Maybe

MacKenzie Elmer ([00:40:43](#)):

In some areas maybe you can jump in and talk about how, you know, how how are new beaches made beach beaches seem to be the only defense or the last defense that we have naturally between the ocean and the

Holden Leslie-Bole ([00:40:53](#)):

Property. Yeah, great question. Thanks Mackenzie. Yeah, so I think that a lot of us think of the beach just as the strip of sand between whatever developments at the back of the shoreline and where the water hits. But we actually need to think of sandy beaches as these complex systems that extend far offshore. The, the end of the beach effectively is where the waves start to feel the bottom and where they start to shoal, where they start to pile up and there are wave seabed interactions there that can move a lot of sand around. And then you go all the way through the surf zone where waves are breaking and then up into the, into the back of the beach where the waves are running up and, and down the beach. And historically California beaches we think actually are not as wide as they have been through most of the 20th century.

Holden Leslie-Bole ([00:41:32](#)):

Throughout the 20th century there was a lot of what we call opportunistic nourishment where harbors were dredged, places like Mission Bay were built, and a lot of the sand that was resulting from those projects got put on the beaches and created these wide kind of picture perfect beaches that were in all the postcards from the fifties and sixties, you know, Santa Monica and Oceanside and elsewhere. But if you look at aerial photos from Scripps back around the turn of the century, there are these old black and white photos. They're actually waves that were crashing up against the base of the bluffs. And so we, we think that we've been kind of in a historical anomaly about how wide the beaches are and how wide the beaches that can be sustained in our region are. So this past winter, as many of you may have observed, we had some really uncharacteristically strong storms.

Holden Leslie-Bole ([00:42:13](#)):

There were waves that were 35 feet offshore. There was an incredible amount of erosion. The beaches ended this past winter in a really depleted state. They were much narrower in a lot of places. They were completely devoid of sand and other places and were cobblestone beaches instead. And you know, it's worth mentioning that there's this kind of annual cycle here in San Diego of beach erosion and recovery, where in the wintertime we get big waves and you know, a lot of us have probably played around with like a hose spraying it at a pile of dirt. And you can imagine that water when it has a lot of energy, can suspend this sediment and then you can take it offshore. So there's a lot of sand that was taken offshore and deposited in, in these sandbars. We've been running this field experiment to try to see how much of that sand comes back on shore in the summertime when the waves are a little bit smaller and it can get kind of picked up from the sandbar and put back up on the beach.

Holden Leslie-Bole ([00:43:05](#)):

And right now we're still at about five meters narrower of a beach state than we, than is the long-term average after this winter. It was about 10 meters narrower when we were coming into the beginning of the summer. And there's a lot of, you know, regional variation and where that happens. But it's worth mentioning also that we're heading into El Nino this year. And El Nino winters, at least in San Diego, are associated with a lot of really strong storms. Some of you in the audience might be old enough to remember the 1983 El Nino, which had tremendous storms and a lot of flooding and damage. 1997 was really strong as well as was 2015. And so it's still yet to be determined what will actually happen this winter, but we think there's a pretty good chance of above average erosion. So kind of going back to Mackenzie's question here, why do we keep focusing on the beach?

Holden Leslie-Bole ([00:43:50](#)):

Well, the beach is this natural barrier between the ocean and whatever's behind the beach, and it's this very dynamic system where sediment can kind of act as a dissipating force to some of the wave energy. But at the same time, it's also really important to understand the way that beach changes can amplify flood risk. And you know, we've seen an imperial beach, we've done a lot of studies here, it's been great to work with you guys. The changes in the sea floor shape and the bathymetry between storms can actually change where the flooding is based on where we would expect. And so all this makes it really important to understand, first of all how the beaches change in normal years so that we can then predict in the future what we're likely to be looking at Holden.

Speaker 6 ([00:44:32](#)):

Gary Griggs in about 2015 did a study of dams upstream of the shore. And what we know in Del Mar is that the Lake Hodges dam has accumulated enough sediment behind it that if we could get that sediment out, it would replenish the shrinking sand on Delmar's beaches for the next 20 years. That's directly from Gary Griggs calculations. Same with the Lake Henshaw dam upstream of Oceanside. Now why is that really important? I'll tell you, and then you can tell me the Henshaw and the Hodges dams are in the north part of the Oceanside literal the, this this system of sand that moves from the north to the south. Do we ever have a prayer of getting those dams redone some way that we can get that sediment back out? That's one of the most important things for our entire area.

Holden Leslie-Bole ([00:45:26](#)):

Yeah, you you bring up a great point, Terry. I'll say first of all that I'm not an expert in water policy. So I, I can't predict whether those dams are gonna come down, but you're right, there is a lot of sediment stored there. And it's worth remembering that the San Diego coastline is heavily engineered and is really sediment starved as a result. We have so much paved area that prevents sediment from running off the land when there's a rainfall event. Some of that gets trapped behind the dams or creeks and river systems are are starved of sediment. You know, I was thinking when Hurricane Hillary came through this year, I live in North Park, Florida Street became Florida River, it was you know, this natural watercourse that got reactivated and we've completely paved it over it. And in other places, seawalls have also starved the beaches of sediment of its naturally erodible barrier behind them.

Holden Leslie-Bole ([00:46:10](#)):

So, you know, you also mentioned another thing, which is the, a longshore transport of sand. And we, we have seen that there is this general transport from north to south in San Diego of, of sediment. But it turns out it's actually a little bit slower than we originally thought. And we think that it's kind of more on the, the many decades of timescale rather than the multiple years of, of timescale. But it, it's worth thinking about the fact that the more we engineer our shoreline and the more we starve it of natural sediment sources, the more we're probably gonna have to resort to things like beach nourishment in places where there are resources to do so

Speaker 6 ([00:46:44](#)):

Well. The other thing that fits into this is stormwater runoff and irrigation. I many times in, in Delmar I've said I'd really like, as you know, running for count city council. I ran in 2018 and again in 2022, and I really wanted to get in there less irrigation. Let's put in sustainable plants, plants that require less water, and let's have more permeable surfaces. Let's have driveways not be paved. And why, because that water, when a big storm happens, it hits and that water comes rushing down those rivers of water and

they go right into the sandstone and limestone of the bluffs and they erode the bluffs from above. Do we have hope of trying to have better water drain off and

MacKenzie Elmer ([00:47:34](#)):

Runoff

Speaker 6 ([00:47:35](#)):

In the San Diego area?

Holden Leslie-Bole ([00:47:37](#)):

Yeah, I think we do, especially if cities continue to do what you were just talking about. You know, it, it is a win-win all around when we can increase the permeable area in our cities. We have an enormous amount of asphalt coverage and there's really no water infiltration that occurs in those areas. And there are a lot of benefits that, that Terry was mentioning, some of them, but additional ones are, you know, permeable surfaces generally trap less heat too. And so there's an additional urban cooling effect when you can convert some pavement into more natural landscapes that can trap and store water. Like you're saying, there's reduced flood risk. I would love to see more local leadership and efforts on that to try to convert some of our asphalt spaces into things that can both store storm water and and absorb that runoff and then also, you know, hopefully increase the sediment supply downstream a little bit. Yeah,

MacKenzie Elmer ([00:48:24](#)):

Think

Speaker 6 ([00:48:24](#)):

Of those acres,

MacKenzie Elmer ([00:48:25](#)):

330

Speaker 6 ([00:48:26](#)):

Acres of blacktop on the Delmar fairgrounds. I, I would really very much like to see that turned into more

MacKenzie Elmer ([00:48:31](#)):

Of a sponge. These

Speaker 6 ([00:48:32](#)):

Tools that

MacKenzie Elmer ([00:48:33](#)):

We can use to, to

Speaker 6 ([00:48:35](#)):

Adapt and push back on climate change.



MacKenzie Elmer ([00:48:38](#)):

Yeah, I mean, to make a good point, like you can make some changes to land use to lessen the problem, but the point to tie it, to tie a bow on this whole conversation, it's, you know, the ocean is coming. We know, we know, we know how basically, or you're, you're trying to develop tools to predict when exactly and what it will do to the coastline. But the challenge that we see just from this panel is that you know, local elected officials who have terms of maybe four years in a row are expected to make these decisions now that will impact the, the, the city for, you know, the next 100 years on sea level rise. And there, there are certain things that they are or are not allowed to do. And a lot of it is, you know, you can pay to put sand on your beach you can build a sea wall, but you're, you'll often get pushback from the coastal commission on that.

MacKenzie Elmer ([00:49:31](#)):

And or you'll what, you know, you could, and a lot of these things cost money too. And so it seems like a lot of these cities are expected to kind of take care of this global sea level rise problem on their own. But I'm wondering if Laura, you could jump in and talk about, we have a new coastal commissioner and it seems like that, you know, that coastal commissioner as I've read she's talking more and more about managed retreat. And can you talk about just the direction you think the state is going on directing cities or maybe even taking charge of how, how the coast is supposed to manage this instead of expecting each city to come up with their own plan and funding for for adaptation?

Speaker 6 ([00:50:10](#)):

Yeah. Oh, that's a good question. <Laugh>. So the, the coast's job, the coastal Commission is the arbiter of the coastal LA So they specifically think through a lens of how do development decisions affect coastal

Laura Walsh ([00:50:26](#)):

Resources. And lately because of legislation and interpretation of the coastal Act and different policies that the coastal Commission has adopted, they also think about how those decisions interact in a content in a real world situation where we have sea level rise. And so the commission, I think has an emphasis on equitable access as well as coastal resource protection. And your options for promoting both of those two things, you know, are are limited, right? I think you, you kind of referenced some of the offices. You always see level eyes say you're trying to protect an asset, you you can wall it off, you can put a big wall in front of it, you can accommodate, which the visual for that is like putting a house on stilts, or you can say move it back, right? And really only one of those options has like, benefits the average member of the public.

Laura Walsh ([00:51:33](#)):

And that's moving it back because that would reestablish natural shoreline dynamics. It would allow the public to access that area instead of, if you picture like armor, if you put up a wall in front of your house, you've effectively preserved your house, but the beach is gonna erode all around it, which means the economic of the, the economic value of the beach is gone, the habitat or ecological value is gone and the recreational value is gone. And I do think that the Coastal Commission and the new commissioners really have an emphasis on the need to equitably think about coastal resources. And that does in some cases involve prioritizing those decisions over public assets. And I think the title of this panel was really creative. And, you know, where will we, where will we live in the coast? You know, when sea levels are here, you know, where will we live in?

Laura Walsh ([00:52:28](#)):

I laughed at it a little because I think it's really compelling and it's how we, you know, we do need to be thinking about this in an existential way, but the policies that the coastal Commission has acted on for a very long time are intended to be incremental. The coastal commission is never gonna stay out of left field. You have to bulldoze your house so that we can have a public beach here in the future. They, they're supposed to be incremental policies for not encouraging the continual redevelopment and arming the coast to the point where we don't get beach in San Diego anymore.

Ed Spriggs ([00:53:01](#)):

Scott, so this, oh, sorry, we go ahead. Could I ahead, could I just add the, the example of, of putting a house on stilts, I think is a good example, but it illustrates the challenge of urbanized coastline where there's high density or medium density versus low density where you can have solutions like that a lot more readily available a lot less expensive, et cetera. Our challenge in Imperial Beach, as I said before, is survival of the community long enough to get to the point where we have some real solutions in terms of being able to relocate away from the tts in the tidal inundation areas that are evidenced themselves every now and then. And that will do so more frequently in the future. So it is with every coastal city in California to different degrees in different parts of those communities.

Ed Spriggs ([00:54:05](#)):

So in the short term and medium term, we need to buy time because we don't have the solutions for the larger scale problem. Buying that time means we need to be allowed to protect existing medium and high density areas in these communities because those, those are already generating a lot of value for the cities themselves. We need really a, a very collaborative approach between environmental protection on one hand and the survival of our municipalities and their financial viability on the other. And, and science has an important role to play in that, but we really need a Venn diagram that has the science, the environmental interests, and the community urban interests overlapping. And right now we're not really at that point where we have that kind of dialogue in a way that can give us the time and the grace to find longer term solutions, which are a national issue. We need more federal awareness, more public awareness that sea level rise is coming so that the resources can be made available at the federal and state level to actually look at major relocations in the future. Right now we're not there, but we need to survive in the interim. Thank

MacKenzie Elmer ([00:55:32](#)):

You, ed. Yes. Scott, did you have some questions for

Scott Lewis ([00:55:35](#)):

The on? Yeah, so thank you all for submitting some great conversation and questions. I think there was some jokes in there and I appreciated them. That's all right. We can have that. But I want to pick up on something that Laura ended her last sort of conversational point about, which was about walls. So I think we've been dancing around this question in a, in a way, like at the heart of a lot of this is the human instinct to just build a wall. If there's water coming in, build a wall, a sea wall is in Mission Beach, there's sea walls in different parts of the community. So why, what are the dynamics of building a wall to keep it out? And you mentioned that it would you know, it has an effect on the ecology, on the environment, but also I think, ed, what you're getting at is let us build some walls while we fi while

Ed Spriggs ([00:56:23](#)):

We figure out what to do. In some ways, let let it, let us keep the walls because we have them already. Right. And let us enhance them until such time as there's a realistic alternative. Got it. So talk to me, Laura, about walls and get more into what we're talking about when we're saying like, if you build a wall, it's gonna have a lot more consequences than just to protect the asset behind it.

Laura Walsh ([00:56:49](#)):

Yeah, yeah. I guess I would say, you know, I'm not bar none saying no walls should exist, but I think we should be honest about the implication of a wall. And sea walls kill beaches. That's, you know, you put a beach or you put a wall on the beach and that forces erosion on the surrounding property and eventually in front of the beach it takes up a footprint on the public beach space. And so if you are a decision maker and you have time to consider alternate options that might benefit, you know, the broader community, I think, you know, surf riders have the opinion that those other options should be prioritized in the context of something like the Coastal Act. But we, you know, it's some that would be the question, like, okay, what should go there if the sea is coming and something we advocate for is living shorelines.

Laura Walsh ([00:57:43](#)):

And it's true that there isn't always space to reconstruct a natural resilience habitat. We have certain assets on the coast like power plants that you know, I think there's a lot of people that would say build the wall in front of the power plant to preserve its function. So we're not saying, you know, no walls anywhere, but if we continue to build walls and have policies that allow existing walls to last forever, and we continue to redevelop behind them, will people expect their assets to stay safe? You know, where we should be admitting that there won't be beaches there in a lot of places.

Speaker 6 ([00:58:19](#)):

Yeah. I wanna, something I'd like to pick up on that in first great statement in Delmar, we have a contradiction. The San Diego Association of Governments is about to start spending \$78 million in Del Mar on our coastal bluff to build two miles. Well, to complete two miles of sea walls. We have about a half mile that they've put in already. They're going to put these sea walls west of where most of the high tides are. So they're saying, well, it's east of the mean high tide line, but the mean high tide line is the average. The high tides hit the bluffs right now. They wanna put sea walls there. We don't want those walls. Why? Because the energy of the wave comes up when it hits the bluff, it comes down on the rocks and it dissipates. So that sand tends to stay when those walls go up in the first half of 2024, we will lose one and a half miles of natural, beautiful unfettered beach in Delmar. We can't let that happen. And yet it's going to happen. Okay.

Scott Lewis ([00:59:30](#)):

See, I love that getting to the heart of that. So last question I think we could get to is about the state. You mentioned the coastal commissioner, but what could the state Sacramento itself do to, to help with this discussion? Because like you said, every city's doing it differently. Every city's got its own dynamics and problems. Often what we're seeing, especially with housing and other things is the state saying, these cities can't handle this discussion. We should get in there, but also maybe invest and try to figure some things out. So yeah, I can see Laura wants to say something. I do. Ed Terry and Laura, go ahead and we'll wrap that.

Ed Spriggs ([01:00:09](#)):

I, I'd, I'd like to, as someone who has worked with the Coastal Commission over years, you a working group with the League of California Cities one of the things that we would like to see, the California Coastal Commission, which regulates land use along the coast, and as I said earlier, can delegate through local coastal programs. A lot of that responsibility to the local governments where they have agreement on the parameters of what can be done. Okay. It's in the interest of everyone, especially the coastal commission, to have every city, all 61 plus the 20 odd counties have a local coastal program that addresses sea level rise. Right now, we're far from that because of the cost and the complications and the rules, the high bar that the Coastal Commission sets for approving a local coastal program. Now our thought as California coastal cities is let's lower that bar a little bit so that we can get every coastal community to go through the thought and an analytical process to come up with a local coastal program that is unique to those circumstances in that, in that community.

Ed Spriggs ([01:01:36](#)):

That way we have a wide range of local coastal programs make 'em short term no more than 10 years so that the communities politically, economically, environmentally, et cetera, can haggle these things out based on each community's unique situation. We'll then be able to take best practices for the next 10 years when sea level rises beginning to really have an impact. We'll be able to take steps with informed communities that know how to go through the planning process, have dealt with the issues, et cetera. But we are not there now because you can't even get a local coastal program through the Coastal Commission. We need everybody to be able to do that

Holden Leslie-Bole ([01:02:19](#)):

And then we can step back and take a look at what we've got and take some best practices and move forward.

Speaker 6 ([01:02:25](#)):

Ed, maybe I'll say something next so that we can end on, on, Laura, you have these pithy statements. It's great.

Holden Leslie-Bole ([01:02:31](#)):

Well, I got another

Scott Lewis ([01:02:31](#)):

One I want to do real quick, so go ahead. Well,

Speaker 6 ([01:02:33](#)):

I was gonna commend Ed on one thing and that's Imperial Beach's adaptation plan. You put the triggers and the thresholds in it that brought the science back into the planning and that was a key thing. We copied that in Delmar, we built that into our plan, and that's how we can get all 61 of these coastal cities to come together and really think about how do we have a plan that works here.

Laura Walsh ([01:03:04](#)):

Yeah, I think something everyone up here is trying to pursue is like science based adaptation planning. And so I do think like the best things that the coastal Commission can do is continue to provide local governments with guidance on what does the sea level rise science say, what are policy options? What

are location options? I think the state can continue to fund both long term and emergency planning for sea level rise. Because the reality is, you know, I also work on the North coast and central Coast and, and places like Santa Cruz, the sea level rise conversation is playing out in emergency. And the more money that they have to implement craftier solutions, the less concrete walls and boulders and sea walls going on a week. And the more public space we'll have, I think I, I'll reference Charles Lester, who's the former chair of the Coastal Commission who came out with a really great report called Planning for Sea Level Rise in California. And the top recommendation in that report was to mandate local coastal program updates. And I don't think we've properly explained some of the countries around the world and there's a lot to get into. But the idea behind that type of mandate would just be that, you know, if, if some amount of local control exists to plan for sea level rise and it's playing out in really controversial local battles, you might have to mandate it for the plan to, to get passed in a way that the state is comfortable with.

Holden Leslie-Bole ([01:04:44](#)):

I want to get this one in 'cause I wanna lead with a little lesson. Holden, would you mind answering this

Scott Lewis ([01:04:49](#)):

Question?

Holden Leslie-Bole ([01:04:50](#)):

It's about the difference between dunes and sand replenishment programs. Can you explain

Scott Lewis ([01:04:57](#)):

What

Holden Leslie-Bole ([01:04:58](#)):

The, what

Scott Lewis ([01:04:58](#)):

A

Holden Leslie-Bole ([01:04:59](#)):

Dune is in this context and what sand replenishment is and how they're different? Yeah, absolutely. Great question. So dunes are these naturally occurring effectively piles of sand that exist on the back of a lot of beaches. There are some natural dunes down here in the Tijuana River estuary. There're natural dunes in the Cardiff area. There were historically natural dunes in the Mission beach area, and they are generally wind shaped and they act as a natural supply of sand for when there's a big storm. The beach can be replenished kind of from the backside. They're an incredibly important buffer too, because they're much higher than the rest of the beach. And so they can have a lot of benefits for reducing flooding for communities and infrastructure. On the backside of the dune sand replenishment works by taking sand from what's called a borrow site offshore, usually at a depth where it's not gonna come back on the beach when the, when the summer waves come and there are these big barges that suck up the sand and kind of turn it into a slurry hydrated with water and pump it up onto the beach.

Holden Leslie-Bole ([01:05:57](#)):

And there the idea is that the sand will stay on the beach until it's eroded away, which is hopefully on the, the timescale of decades rather than years. And ideally you want to use a sand grain that's large enough that'll actually stay put instead of some of the finer grain sands that will get washed away more easily. I'd just like to also kind of express from, from that perspective that I think there's a ton of room for municipalities, and maybe this is a, a closing thought to experiment with some of these more creative engineered solutions that are bridging the kind of gray green boundary between infrastructure and living systems. Right now we're working with California state parks to test out a couple different shapes of berms, which are kind of a way to replicate a dune just by piling up sand on Silver Strand State Beach.

Holden Leslie-Bole ([01:06:40](#)):

And the idea is that, you know, the parking lot floods a lot during some of these wintertime storms. And maybe we can come up with a berm shape that is most conducive to preventing that flooding and just use bulldozers to kind of pile it up and kind of have it be an actively managed system. So also if there are any political folks in the audience here who work with city governments trying to develop plans and they're unanswered questions, we are always happy to try to help design an experiment and try to come up with some of the answers and the baseline observations that you need to make the decisions that are appropriate for your community. So like everyone here has said, I think that really the important thing going forward is to have as much crossover as possible between the different stakeholders, property owners, municipalities, researchers, and the coastal commission. So that's kind of the path forward that, that I think we all see.

Scott Lewis ([01:07:27](#)):

Okay. Well I hope you've enjoyed the session. If you are interested in this topic or topics like it you can always sign up for the environment report. You go to [voice.sandiego.org/newsletters](http://voice.sandiego.org/newsletters), that's [voice.sandiego.org/newsletters](http://voice.sandiego.org/newsletters). Sign up for the environment report. It's one of our best. I love it. Let's hear it for our panelists, thank you so much and our moderator, McKenzie. Thank you. Polus starts tomorrow at 9:45 AM get there earlier, get there ready. We will see you all day. There's gonna be a lot of good stuff, some music, some tables and some chances to interact with your favorite local journalists and, and public officials and some of those that you might not be so excited about as well. So thank you very much and we'll see you tomorrow.

Speaker 7 ([01:08:24](#)):

Hi, how are you? Good to see you. Oh goodness. Thank you everybody. So.