



**MINUTES  
PARKS & RECREATION COMMISSION  
REGULAR MEETING**

**March 26, 2019**

**CITY HALL**

**250 Hamilton Avenue**

**Palo Alto, California**

**Commissioners Present:** Jeff Greenfield, Jeff LaMere, Ryan McCauley, Don McDougall,  
David Moss, and Keith Reckdahl

**Commissioners Absent:** Anne Cribbs

**Others Present:** Council Member Cormack

**Staff Present:** Daren Anderson, Kristen O'Kane, Natalie Khwaja

**I. ROLL CALL**

**II. AGENDA CHANGES, REQUESTS, and DELETIONS**

None

**III. ORAL COMMUNICATIONS**

Chair McDougall: I have no cards for Oral Communications. We don't seem to have any exciting topics this evening to attract attention. I will point out that there were public letters that have been submitted over the last month. They're in the category, I believe, of Oral Communications. I don't have them with me, but I hope everybody has paid attention to what those letters said. With that, I would invite Kristen to provide us with a Department Report.

**IV. DEPARTMENT REPORT**

Kristen O'Kane: Thank you. Kristen O'Kane, Community Services. I just have some upcoming meetings and events I wanted to share with the Commission. We can send those out afterwards too because I do have quite a few. There will be another meeting for the community to review the scope of work and design for the Rinconada Park Improvement Project. That meeting is scheduled for Thursday, April 4, at 6:30 p.m. at Lucie Stern Community Center in the community room. Peter Jensen will be leading that one.



1 April 13th is the Great Race for Saving Water and Earth Day Festival. That is 9:00 a.m. to  
2 2:00 p.m. at the Baylands Athletic Center. If anyone is interested in attending and doing  
3 some volunteer work at the event, we are looking for volunteers to assist with race day  
4 activities, participant coordination, and just helping out, cheering people on. We would  
5 appreciate it. Let me know if anyone's interested in volunteering. May 4th is our annual  
6 May Fete Parade. That is at 10:00 a.m. on University Avenue. Again, the fair will follow  
7 immediately at Heritage Park. Commissioners, as in previous years you'll be receiving an  
8 invite through email asking for your participation in the parade. You just walk at the  
9 beginning of the parade with other VIPs. We'll have some give-aways and things like that  
10 for you. Look out for that invitation, and do let us know if you plan on attending. We can  
11 talk about this when we get to the upcoming agendas, but it is the Parks & Rec  
12 Commission/City Council joint study session. That will be at 6:00 p.m. I had previously  
13 said 5:00 p.m., but there is something before it on the agenda. 6:00 p.m. actually works  
14 better for some people. Following that, we are hoping to have a joint study session between  
15 City Council and the School District Board of Education for the Cubberley Master Plan.  
16 That would be at 7:00 p.m. We're still confirming that. Some of the Board Members can  
17 attend. As of right now, that's tentatively scheduled for the same night. Finally, May 9th  
18 is our final Cubberley Community Co-Design meeting at 7:00 p.m. at Cubberley  
19 Community Center in the Pavilion. I hope you will all attend. Before that, the Parks &  
20 Rec Commission will be receiving a presentation specifically for the Commission. There  
21 will be a lot of repeat information at the Council study session as well as the community  
22 meeting. It would be great to have your attendance. Just to have you at the tables hearing  
23 what the community has to say and engaging in those conversations is very beneficial.  
24 That is all I have. Thank you.

25 Chair McDougall: Thank you, Kristen. Do I dare ask if Daren has anything to add?

26 Ms. O'Kane: Daren does not. I've already asked him.

27 Commissioner Moss: How did Cubberley Day go?

28 Ms. O'Kane: Cubberley Day was great. We had a wonderful turnout. I heard that you  
29 were there, Council Member, but I didn't see you. I didn't see you either. Cubberley Day  
30 was very well attended. There was a lot of energy. A lot of tenants were there sharing the  
31 work that they do. The kids were performing. A lot of people who didn't know much about  
32 Cubberley were there too. We had a table set up for the Cubberley Master Plan, trying to  
33 reach that demographic that we're having a hard time getting feedback from. Those are the  
34 parents of school-aged children. We were able to reach some people, but we realize that,  
35 as they're walking by with their children, they don't have the time to stop and talk. It really  
36 is a hard group to pin down. We all remember having little kids. We don't have the time  
37 to do much. We did receive some good feedback. Overall it was a great event. It was our

1 fifth year doing it. We had the JMZ there this year, and Avenidas. That just added some  
2 more activities and interest. I think it was a great event.

3 Chair McDougall: I appreciate that Daren has nothing proactive to add. I'd be curious  
4 about the status of the Public Works activity on Byxbee Park.

5 Daren Anderson: Thank you, Chair McDougall. Daren Anderson, Community Services  
6 Department. We spoke about this at a side meeting once, and I promised to follow up. I  
7 checked with Public Works, and they haven't gotten back to me yet with an answer. I'll  
8 have it for the April meeting. Essentially, what I'm asking is what's their timeframe for  
9 wrapping up filling the low spots at Byxbee where we're so often having heavy trucks come  
10 in and drop off soil to bring it back to grade due to subsidence.

11 Chair McDougall: Thank you. Let's move on to the business part of the meeting.

12 **V. BUSINESS**

13 **1. Approval of Draft Minutes from the February 26, 2019 Parks and Recreation**  
14 **Commission meeting.**

15 Approval of the draft February 26, 2019 Minutes was moved by Commissioner Reckdahl  
16 and seconded by Commissioner Moss. Passed 5-0, Cribbs, McCauley absent

17 **2. Urban Forest Master Plan**

18 Chair McDougall: The next item is a discussion and presentation on the Urban Forest  
19 Master Plan. Kristen, would you like to introduce?

20 Ms. O'Kane: Yes. Happy to have Walter Passmore here to share the Urban Forest Master  
21 Plan with all of you. I know he's been here in the past, but it was not with these actual  
22 Commissioners. I'm glad he's here. He can also share any updates. I will turn it over to  
23 you, Walter.

24 Walter Passmore: Thank you. Walter Passmore, Urban Forester with the City.

25 Chair McDougall: Welcome.

26 Mr. Passmore: Thank you, Commissioners, for having me to brief you on the second  
27 edition of the Urban Forest Master Plan, which was just adopted by Council one month  
28 ago. This is hot-off-the-presses news for you. The Urban Forest Master Plan is the guiding  
29 document for enhancing a thriving urban forest. It is intended to motivate  
30 interdepartmental collaboration and integrate actions across disciplines. It intersects with  
31 the Parks Master Plan, Sustainability/Climate Action Plan, Comprehensive Plan, Green  
32 Infrastructure Plan, and others. It guides the management of natural resources, trees in



1 particular, in parks, open space, public streets, private development, and elsewhere.  
2 Partnerships are one key aspect of implementation. I'm hoping that all of you are going to  
3 highlight some components of the plan that interest you and have some questions about  
4 how we could integrate activities between this plan and the Parks Master Plan and activities  
5 in the Parks and Recreation Department. These are some of the second edition  
6 enhancements that occurred since I last discussed the Urban Forest Master Plan with the  
7 Parks and Recreation Commission following adoption in 2015, basically the differences  
8 between the 2015 and the 2019 version. We have focused a lot on enhancing native species  
9 and combatting invasive species. We have greatly expanded Goal Number 5 for planning  
10 the future of our community and how we want development to play a role in that. South  
11 Palo Alto was an important focus of the analysis component of the plan in 2015. Now,  
12 we're doing something about it. We're taking some actions to correct that canopy disparity  
13 between North and South. Agricultural landscaping is one of the components of  
14 sustainability that we want to provide more resources here for residents to thrive without  
15 having to import what we need or export our impacts on the world. Partnerships, very  
16 important. We expanded the language to include a lot of the environmental groups that  
17 were very integral in helping us compose the second edition of the plan. However, that  
18 does not exclude a much broader array of partnerships that we're hoping to enhance, such  
19 as neighborhood associations, "friends of" groups, corporate citizens, etc. Habitat was a  
20 very important enhancement that we added program language about how we're going to  
21 implement new programs to enhance our natural habitats. Finally, development impacts  
22 and opportunities. Every time we look at development applications, there are some things  
23 that we know are going to be impacted and changed. There are other opportunities for  
24 goals to be accomplished through development. In fact, in part of the 2015 plan, we  
25 illustrated the difference in tree canopy between 1982 and 2010 through an analysis and  
26 found that some of the gain in canopy was due to our review and regulation of development  
27 activities, requiring replacement trees, requiring more trees to be planted than were  
28 removed. That actually helped us to gain more than 5 percent canopy coverage throughout  
29 the City. We went from about 32 percent to over 37 percent canopy cover throughout Palo  
30 Alto. Implementation, very important. The second edition of the plan does have some  
31 notable improvements. We're obviously encouraging a lot of interdepartmental  
32 collaboration. We've had some new regulatory requirements that we have to be aware of  
33 and create actions for, such as the water efficient landscape ordinance in California. You're  
34 all aware of the severe fires that have occurred throughout the state. We're trying to be  
35 proactive with preparing our ecosystem in Palo Alto to respond to those influences in the  
36 environment. In our culture, things are changing. We're trying to prepare a resilient  
37 ecosystem with all of our natural resources prepared the best they can be for these  
38 influences. Stormwater, we have made some changes in policy. You'll see those reflected  
39 in the Green Infrastructure Plan as well as the Urban Forest Master Plan. There are some  
40 very important goals that were further described in the second edition, such as no net loss  
41 of canopy. That goal also was replicated in the City's Comprehensive Plan. It's a simplistic  
42 notion, but very important as we move forward. The concept of no net loss when we're



1 considering the impact of development and how we create projects, how we move forward  
2 as a community. One good example project on land use is the Klyde Warren Park in Dallas.  
3 Just a concept that you might want to take a look at. It's a park that was constructed while  
4 I was in Dallas. It's constructed between downtown and uptown, over the top of an  
5 interstate freeway. It created brand-new parkland in the most valuable area of Dallas where  
6 parkland was needed most. As we think about creating new parkland and getting to the  
7 number of acres per resident goal that we want to reach, we may have to think about some  
8 of these innovative solutions to get there. Species and habitat, we have a lot of new actions  
9 listed in the second edition. I'm not going to review all of these here. One that's happening  
10 right now with our partner group Canopy is the great oak count. It's a survey that was  
11 conducted about 20 years and is being repeated now. We'll have an indication of how our  
12 native oak population is doing. There are a number of actions related to the great oak  
13 county. When we have those findings about the distribution and health of our native oaks,  
14 then we can start to do something to encourage them in the future. Recently there was a  
15 really nice article published by Grassroots Ecology about the value of oaks. It cited the  
16 recent publication, which we contributed to. There's a lot of good stuff happening around  
17 oaks. They're really the foundation of our native tree population. A quick mention about  
18 where we've come and where we want to go. We set a goal of having native tree population  
19 composition of 20 percent of our street trees within 20 years and 50 percent of our urban  
20 park trees. Just to give you an indication of our trend, between adoption of the initial plan  
21 in 2015 and now, we've gone from a native tree population of about 6 percent of our street  
22 trees to 9 percent. We've improved that fairly significantly. That puts us at almost 1  
23 percent change in composition per year. We're on target with meeting that 20 percent in  
24 20 years. That's pretty notable because we're only replacing about 1 percent of the tree  
25 population in any given year. The majority of what we're planting is native species. We're  
26 encouraging developers to do the same. This is being supported by our Tree and Landscape  
27 Technical Manual, which is nearing completion. That should be adopted by the City  
28 Manager's Office this calendar year. I'm not going to dwell a whole lot on development  
29 impacts. We are making changes to citywide plans and policy documents. We're going to  
30 be proposing changes to the Municipal Code to protect additional native species and also  
31 combat invasive species. We're going to be changing permitting procedures. We're going  
32 to be doing an analysis of dewatering impacts and use of recycled water. We're also  
33 assisting our Regional Water Quality Control Plant with exploring new technologies and  
34 hopefully constructing a desalination facility that will greatly reduce the salt content in the  
35 water and allow us to use it across species. Right now, there are certain sensitive species  
36 that we can't apply recycled water without diluting it. We've also changed our staffing  
37 model around, employing contractors to do some of the more basic tasks. We've  
38 reclassified our previous position of Planning Arborist to a Landscape Architect/Park  
39 Planner, the same title as Peter Jensen, but this position is going to foster innovation of  
40 public benefits from private development. We're matching what we're doing on the public  
41 property side with a similar position to review development across the board. On  
42 development, we have amended some aspects. I'm not going to go into these in great detail.



1 A lot of these will be changes to our Tree and Landscape Technical Manual; whereas,  
2 before we just had a Tree Technical Manual. We're also now using our forestry fund in-  
3 lieu payment to fund trees in South Palo Alto and elsewhere where they're needed most,  
4 canopy in South Palo Alto. There was a report produced in 2011 analyzing the disparity.  
5 We did survey residents. We did a study of vacant tree sites. We found that there was  
6 about 24,000 sites that could be planted with a tree in South Palo Alto, but we wanted to  
7 refine that even further. We surveyed residents and asked, "Would you be willing to plant  
8 a tree? Do you foresee any barriers to planting a tree? Would you be willing to do so if  
9 some form of assistance was provided?" About 50 percent of those residents said they  
10 foresaw no barriers; they would be willing to plant one; and they would like assistance.  
11 That brought us from the 24,000 down to about 10,000. We still have not specifically  
12 located all of those sites. Looking at that 10,000-site potential, we've established some  
13 new programs such as utilizing the forestry in-lieu money from development to augment  
14 the Canopy contract to plant 300 trees in South Palo Alto in conjunction with neighborhood  
15 associations. Over the course of three years, they're planting 300 trees. We're hoping that  
16 program will expand in the future and grow into something bigger than the initial seed  
17 money that we've given them. We're also doing a pilot with our Right Tree Right Place  
18 Program, which replaces incompatible trees that are growing under utility lines with more  
19 compatible trees. We've enhanced that. We're not just giving a 1:1 replacement. We're  
20 saying, "We'll give you a utility compatible tree to replace the one that's growing under the  
21 lines plus we'll offer you a shade tree to plant elsewhere on your property." We're helping  
22 them to locate that tree and providing them a benefits calculation of doing so. Hopefully,  
23 we're going to at least be doubling the amount of trees that are planted in South Palo Alto  
24 with RTRP. We're also exploring a carbon offset project. I have been on the development  
25 team for two different protocols. One is a compliance protocol. The other is a voluntary  
26 protocol. They're both capable of generating offsets that are just as real. We just have a  
27 different audience or market for the two different protocols. We've had some initial  
28 conversations with five different corporate funders right now. Hopefully, those will  
29 progress, and we'll be able to find a good corporate funder to partner with the City and our  
30 other partners to enhance the programs that we have going right now or maybe even  
31 develop new programs. On agricultural landscaping, we're currently doing a lot of  
32 community garden work. We wanted to expand that and introduce more fruit and nut  
33 species for street trees, where those are appropriate. We're also expanding our Right Tree  
34 Right Place Program to include fruit trees as an option for going under the utility lines.  
35 That might make it more motivational for people to take advantage of RTRP. We can  
36 expand the outreach for that program. This is a really short list of environmental groups  
37 that helped us a tremendous amount developing the second edition of the plan. I do  
38 mention that Acterra has now divided. I also wanted to say that Grassroots Ecology staff  
39 was part of that conversation. They just didn't have that name at the time they were helping  
40 us develop the second edition. Costs and benefits. It's always a challenge to sell ecosystem  
41 management and urban forestry because the historic view of it is that it's an aesthetic. It's  
42 like we're planting pretty flowers in our front yard. We know that it's a lot more than that.



**DRAFT**

1 We are carefully reviewing costs and benefits for our decisions. That is causing us to look  
2 closer at project review, at requirements, at surveys and analysis work, our outreach and  
3 education, our maintenance activities and partnership activity in general. The benefits of  
4 public trees. Give or take, 30,000 street trees and 6,000 park trees in urban parks are  
5 generating almost \$18 million in ecosystem benefits annually. If you look in that second  
6 column of bullets, this represents about 9 percent of our land area. We have not done a  
7 benefits analysis for the entire City. A very rough extrapolation, if you took the inverse  
8 proportion of 9 percent and looked at that on a citywide basis, you can see that trees in Palo  
9 Alto are generating millions and millions of dollars' worth of services for our population.  
10 These eco benefits do not yet include human health; although, we are working closely with  
11 the University of Illinois and Kaiser Permanente to quantify the value of trees for a number  
12 of different health conditions. It's comparing communities with trees and healthcare costs  
13 to those with less. We think those correlations are going to prove that trees have substantial  
14 health value for human beings. Greenhouse gas benefits do not include storage. That's a  
15 struggle with our Sustainability/Climate Action Plan. We have a number of activities to  
16 reduce our pollutants and mitigate our impacts, but we don't do a very good job of  
17 describing what we have, how much carbon is actually stored in vegetation, soil, the  
18 organisms that populate the San Francisco Bay. If our actions to manage natural resources  
19 are not effective, what influence is that going to have on the millions of tons of carbon that  
20 is stored? We have a huge carbon bank, and it's important to recognize that it's not just  
21 how many miles we drive. It's also how we care for our natural environment that really  
22 influences the success of sustainability. Another aspect that we rarely talk about is the  
23 influence on City revenue. We talk about how much it costs to have City staff or hire  
24 contractors to prune a tree or do some of these other activities, but we really don't consider  
25 the amount that trees and landscape and natural resources correlate to property values, to  
26 the learning environment in schools, to the health of our population, to property transfer  
27 fees, to sales tax revenue, to permitting fees. These are all big revenue sources for the City.  
28 I would say that management of natural resources pays for itself. Some key issues, the role  
29 of urban forestry citywide. Before I was hired, Palo Alto did not have an Urban Forester.  
30 Palo Alto had a Manager who took care of street trees. There was a separate position,  
31 Planning Arborist, that monitored private development. There were separate positions in  
32 parks, such as the Rangers and Daren's position as Division Manager, that took care of  
33 trees in that environment. We now have an integrated system. We can do even better with  
34 interdepartmental collaboration. We need to incorporate Urban Forest Master Plan policies  
35 and programs across the board. We are going to be bringing forth revisions to Municipal  
36 Code Chapter 8, which regulates trees and vegetation. We're also reviewing and providing  
37 input on other Municipal Code chapters, especially those that regulate development and  
38 infrastructure. We've given input to the Sustainability/Climate Action Plan, and that is  
39 going to continue to adapt over time. The Parks Master Plan will be another very important  
40 document that we need to incorporate and share some of these policies and actions. The  
41 Comprehensive Plan, the Natural Environment Element in particular, across all of the  
42 elements we tried to infuse concepts of natural resources management because it does



1 influence all components of the Comprehensive Plan. The Green Infrastructure Plan I've  
2 mentioned already. Recommendations. One in particular for the Parks and Recreation  
3 Commission to consider is the Master Plan calls for an ongoing community forum. We  
4 have yet to decide on what the appropriate venue for that is or how we're going to  
5 coordinate that. I would appreciate input. Formalization of the role of urban forestry staff  
6 is still a work in progress. Updates to multi-departmental sections of the Municipal Code.  
7 Interdepartmental coordination and integration with other plans. Finally, the fiscal  
8 commitment to implementation. There are a lot of things we can do with partnerships, but  
9 partnerships are that. It's not you get the partner to do everything; it's a joint effort. The  
10 City, environmental groups, corporate citizens, residents, all need to play a part in  
11 implementing this plan. With that, I will entertain any questions the Commissioners have.

12 Commissioner Moss: This is amazing that we have an urban forestry program and  
13 organization. I don't know how many cities in the Bay Area have someone like you. It's  
14 absolutely amazing. Having helped with the Parks Master Plan, there are so many aspects  
15 of it that have everything to do with habitat and trees and open space. Your plan is an  
16 integral part of that. I think I gave some input when you did the 2011 plan, not this one  
17 but the first one. I really appreciate everything that you're doing. I hope you're working  
18 with Daren and Peter Jensen that every time we build a park, we're doing what we need to  
19 do to meet your plan as well as our specific needs. Do you feel confident that you're getting  
20 your goals met when we redo each park?

21 Mr. Passmore: Yes. We've been working very closely together. It's been more of an  
22 informal, professional working relationship. There is potential to formalize that so that, if  
23 we do have a transition in staff, which sometimes happens, the next generation will know  
24 that our intent is to continue this type of interdepartmental collaboration.

25 Commissioner Moss: We've had presentations from Green Stormwater Initiative and  
26 dewatering and all these other things that directly affect the canopy. I'm hoping that you're  
27 helping to push those aspects not only in the parks but also in new development. Every bit  
28 of help helps. I'm so happy that you're talking about fruit and nut trees. We have many on  
29 our property. The idea that we could have those instead of slow-growing oak trees is really  
30 good for me because I know that there are—even in our neighborhood they have many  
31 redwood trees underneath utility lines, which is just a no-no. To replace them with fruit  
32 and nut trees is a big benefit to the community, if we could even have a place to sell or give  
33 some of our excess fruit, which we have tons of. If you can incorporate some way to  
34 encourage people to use fruit and nut trees and then have a way for them to share, that  
35 would be multiple benefits. The idea of having parkland on top of buildings has always  
36 intrigued me. My gold standard is the Salesforce Transit Center in San Francisco. Even  
37 though it's not open, the park is fantastic up on top. I would hope that we could continue  
38 to build canopy on top of buildings.



1 Commissioner Reckdahl: How can we help you? Are there any actions, any policy  
2 changes you'd like to see changed in the City with respect to parks?

3 Mr. Passmore: The Parks Commission may have a role in input for future CIP projects and  
4 large commercial projects. I mentioned the Klyde Warren Park in Dallas as one example.  
5 There was another really notable example of partnerships that I brought back from a  
6 conference. I did share with Daren about the gathering place in Tulsa. If you haven't  
7 explored that project, it's a \$465 million construction almost exclusively funded by private  
8 donations, a 100-acre new park near downtown Tulsa. One of the greatest examples of  
9 public-private partnership that I've seen in my career. Worth taking a look at that project.  
10 The Commission being able to recommend ideas like that as we move forward with large  
11 development projects. Maybe we have to scale them down for Palo Alto, but we should  
12 be thinking big. We have property values that justify really innovative, cutting-edge ideas  
13 to be implemented in Palo Alto. The ongoing community forum I mentioned in my last  
14 slide, while Palo Alto does have this legendary process, we have not been all that effective  
15 at engaging our residents across cultural boundaries, across age boundaries. It seems to be  
16 a fairly small group of people that communicate with decision-makers on a regular basis.  
17 A lot of the community is the silent majority, which I guess is prevalent in almost all  
18 communities. To the extent that we could get better communication with more groups,  
19 we're going to be more representative of the interests of our community.

20 Commissioner Reckdahl: In your package, you mentioned the fact that a lot of these trees  
21 are on private property. For tree selection, we really have to hope that the private owners  
22 do the right thing. That's really tricky because there are so many times that we want to  
23 communicate with the public, and it's really hard to motivate private landowners. What's  
24 your outreach philosophy? How are you going to get around that?

25 Mr. Passmore: In the past, one of our most effective outreach opportunities has been during  
26 development. When we're issuing a permit of whatever type, that's an opportunity to make  
27 some strong requests and sometimes require actions to happen. We reviewed almost 400  
28 planning applications last year in the urban forestry section, and about 300 building  
29 permits. We interacted with developers on almost 500 tree protection inspections. We  
30 issued 30 or so public tree permits to people that just wanted to take some actions on trees  
31 on their own. That's a lot of interactions under an official permitting system that we can  
32 have some influence on.

33 Commissioner Reckdahl: You mentioned in your remarks about some tree spots that  
34 you've tried to fill with trees. How did you get hold of those people? Did you go door-to-  
35 door? Did you mail them?

36 Mr. Passmore: On 300, we are partnering with Canopy. Canopy identified residents in  
37 South Palo Alto that had responded to the survey for the South Palo Alto canopy disparity  
38 or residents in South Palo Alto that are on their listserv, which includes about 4,000



1 residents in Palo Alto. They have a very large interest group that wants trees. They reached  
2 out to them, identified where some viable sites were. I think they're going to surpass that  
3 300 trees in three years. Likewise, through the Right Tree Right Place Program, we know  
4 what utility customers we've had to do pruning on an annual basis because we inventory  
5 all of those trees. We have to pay our vendor to go in and prune them away from the utility  
6 lines. We know where we have some trees that are at-issue or in conflict with utilities.  
7 There's not a lot of guesswork really. We are doing further analysis. In the next 12-18  
8 months, we should have a canopy cover analysis tool that allows us to look at tree canopy  
9 on a parcel-by-parcel basis or anything larger than that. We can select a neighborhood or  
10 half the City, South Palo Alto for example, and we can analyze the trend in tree canopy  
11 cover over time.

12 Commissioner Reckdahl: So much of South Palo Alto has rolled curbs. How are you  
13 going to get around that for street trees?

14 Mr. Passmore: We still have street trees. A lot of people don't recognize that they are  
15 street trees because they're trees in their front yard. There is an educational component that  
16 we need to reach out to those property owners, inform them that they are the proud owner  
17 of a street tree. We do have a proactive approach when we plant a new street tree. Again,  
18 we partner with Canopy to do a young tree care survey, where they go out, they survey  
19 every tree that's been planted in the last five years, and they deliver some outreach material  
20 to the property owner that says, "We've looked at your tree. It needs mulch, it needs water,  
21 or good job, you have a great, healthy tree. Keep up the good work." We're looking at  
22 about 1,000 trees a year that are planted in the last five years in conjunction with Canopy.

23 Commissioner Reckdahl: With a lot of people putting solar panels on their house, how  
24 does that change the desirability of having a tree in your yard?

25 Mr. Passmore: The Urban Forest Master Plan does call for some analysis and policy  
26 development to resolve conflicts between trees and solar. The easy answer is roof  
27 mounted. If we don't put solar on the ground, there's much less conflict with trees. The  
28 higher up you put it, the less they're competing for light. California's solar ...

29 Commissioner Reckdahl: Eichler roofs are so low that they really do compete with trees.

30 Mr. Passmore: Granted. It's not for everywhere. We have to balance our desire to have  
31 locally generated solar with our desire to have a robust tree canopy. We can greatly  
32 increase our solar collection by taking advantage of roof-mounted solar on two-story and  
33 higher buildings, which are not in conflict with trees. That being said, the California Solar  
34 Shade Act says basically whichever was there first has the solar rights in perpetuity. If you  
35 have a tree there, even if you replace the tree, it maintains the solar rights.

1 Vice Chair Greenfield: I want to quickly comment, Keith, regarding your comment on the  
2 rolled curbs, just to clarify what Walter was saying. Typically, the first 7 feet of the land  
3 is City land. Any tree that's in that first 7-feet of property or whatever the setback might  
4 be on that particular parcel is a street tree.

5 Commissioner Reckdahl: Looking at my neighborhood, people are much less likely to  
6 plant a tree in their front yard than they would if you have a dedicated boulevard. People  
7 emotionally feel like boulevards are the spot for trees, but my front yard is my front yard.  
8 It's a harder sale.

9 Vice Chair Greenfield: It's partly a semantic thing. Walter, correct me if I'm wrong. A  
10 street tree is a tree on property that's bordering the street, whether it's in a planting strip or  
11 in the setback on the rolled curb. For semantics, it's the same.

12 Mr. Passmore: The City of Palo Alto actually owns the right-of-way, unlike some other  
13 cities. Unlike a lot of other cities, the City of Palo Alto maintains all of the trees in the  
14 right-of-way. The property owner has input as a neighbor, but they cannot dictate what's  
15 planted in the right-of-way. We do work very closely to cooperate with property owners  
16 on tree selection and planting. We've done a good job at increasing the number of trees  
17 that we have in sites. We track that with an occupancy rate. Our occupancy rate has gone  
18 from about 90 percent of our street-tree spaces filled to about 95 percent in the last five  
19 years. We've increased that occupancy rate. Our goal is to have 98 percent occupancy  
20 rate, which we think accounts for some amount of mortality and replacement during the  
21 process. We're getting close to full occupancy, no vacant sites anywhere in Palo Alto.

22 Commissioner Reckdahl: There's a vacant site in my front yard. I actually would like a  
23 street tree.

24 Commissioner McCauley: Thanks for your presentation. I'm sorry that I was late. With  
25 respect to the species, you noted a really impressive trend when it concerns the street trees,  
26 that you've increased it by 1 percent—when I'm speaking of species, I mean native  
27 species—over the past three years. You have this goal within urban parks to have 50  
28 percent of trees within 20 years be native species. Where are you on that?

29 Mr. Passmore: The easy answer is I don't know because we just recently completed our  
30 inventory of urban parks. We still have to do the analysis on our species composition and  
31 establish goals for those. Like I mentioned, in the past all of the urban forestry functions  
32 across departments were not integrated, so each department had its own idea of what should  
33 be done. Once the Urban Forest Master Plan was created and we established these goals,  
34 we knew that we needed to collect inventory information across all the urban parks so we  
35 could understand the size, location, distribution, health of all those trees and also provide  
36 maintenance on a routine basis to them. Those are some of the actions that have taken  
37 place since the plan was adopted in 2015.



1 Commissioner McCauley: I was just curious because 50 percent seems like a really high  
2 number to me. If we're at 40 percent, maybe it's attainable. If we're at 10 percent or  
3 something in that neighborhood, it seems like it would be perhaps a bit too ambitious. I  
4 don't know if you have thoughts on that. Do you have a ballpark sense for where that might  
5 be?

6 Mr. Passmore: Our guess at the time the goal was written was about 25 percent native  
7 species composition in urban parks. With parks, we have a lot more flexibility to control  
8 the species because the space is not as constricted as along streets. We have more  
9 flexibility to control the site environment for the trees as well. Some of our park strips are  
10 so restricted that we just don't have good native species to put into those sites. With parks,  
11 we can really enhance the site and do a lot of things to encourage a native species to grow.

12 Commissioner McCauley: What's your approximate replacement or replenishment rate of  
13 trees within parks? On an annual basis, do you replace about 1 percent, 2 percent or is the  
14 mortality rate higher?

15 Mr. Passmore: We're not differentiating right now. I could run a report, but right now  
16 we're not differentiating between public trees, street trees and park trees. We have just one  
17 number of how many we're planting.

18 Commissioner McCauley: That's about 1 percent year-over-year. Is that ...

19 Mr. Passmore: A little over 1 percent of the population was planted. We planted in excess  
20 of 400 trees last year, and our population is about 36,000.

21 Commissioner McCauley: I would just note that Daren and his team have been very  
22 attentive to the issue of health of trees within parks. They've taken steps recently, in the  
23 past year even, to try and be on top of that. I don't know if there are issues still within the  
24 parks that need to be addressed. If you're part of that planning, I presume that's the case.  
25 If there is something more that we need to do or to press for from City resources, City  
26 finances, I'd appreciate knowing what that is.

27 Mr. Passmore: We have made some pretty substantial changes in how we manage trees in  
28 parks. One was we included park trees in our cycle maintenance pruning contract. Now,  
29 it's our goal to prune every tree in an active use park area once every seven years. We'll  
30 take the dead out. We'll make sure it's safe. That had not happened previously. We're also  
31 in the process of collecting inventory information for active use areas in open space such  
32 as Foothills Park. Those trees, picnic areas, around the Interpretive Center, entrance gate,  
33 the overlook, those will all get inspection and routine cycle maintenance pruning.

34 Commissioner McCauley: Correct me if I'm wrong about this. My sense is for a long time  
35 it might be a resource that we took for granted because we thought they were receiving

1 adequate water and that's all they need, or something like that. We've really turned our  
2 attention to the issue and are doing a good job of being stewards of the trees within our  
3 parks. Is that fair or is there something more we need to do?

4 Mr. Passmore: We're doing a good job with the resources we had at our disposal before,  
5 but now that we're collaborating across departmental lines, we're going to be much more  
6 effective at proactively identifying maintenance that needs to be done.

7 Commissioner McCauley: I'll just note again that Daren and his team seem to be doing a  
8 great job actively managing it.

9 Commissioner LaMere: Appreciate the presentation and appreciate all the hard work  
10 you're doing. You were talking about the collaboration between departments. It certainly  
11 helps get things done. What is the role of the redwood tree in Palo Alto and the general  
12 health of the population? What are we doing about those trees that are not so healthy right  
13 now or on the way out, so to speak?

14 Mr. Passmore: Obviously redwood is a very important species. The city was named after  
15 a redwood tree. It's a species that we want to keep in our inventory forever. That being  
16 said, redwood was not historically distributed across Palo Alto the way it is currently.  
17 There's been a lot of redwood trees introduced because they're easy to grow in the nursery,  
18 they're very quick growing when they're young. In some cases, those were planted in  
19 inappropriate locations where they're not thriving anymore. We do need to pay attention  
20 to how we locate redwoods in the future and under what conditions we would allow them  
21 to be removed and how we want those to be replaced.

22 Vice Chair Greenfield: Thank you for the presentation, Walter. As you know, my family's  
23 been very active with Canopy for many years. Full disclosure, my daughter even worked  
24 for you one summer and had a great experience with that. We're definitely supporters.  
25 Great to see that a lot of the priorities listed in the presentation are deeper in South Palo  
26 Alto. Increasing the canopy project is great. There really is a disparity on halves of the  
27 town. It's a very worthwhile effort. It's also nice to see different tree lists with varying  
28 priorities based on location. For example, different trees located near sports fields so  
29 they're not hanging over them and getting bashed. Very pragmatic and makes a lot of  
30 sense. The first question I have is could you shed light on the size of the urban forestry  
31 department, how many people are included and what are the roles?

32 Mr. Passmore: Fourteen staff members in the urban forestry section.

33 Vice Chair Greenfield: What kind of roles is the breakdown?

34 Mr. Passmore: I'm the Urban Forester. Landscape Architect is over planning and  
35 development activities. I have a Project Manager that oversees our in-house park and street

1 tree maintenance. I have a Project Manager that oversees utility vegetation management,  
2 line clearance activities. We have an in-house tree trimming crew.

3 Vice Chair Greenfield: The tree trimming crew is the bulk of the staff. It sounds like  
4 you've had lots of interactions with the public on the building permits and the tree  
5 protections. That falls to a couple of people, it sounds like. You mentioned needs for  
6 better interdepartmental collaboration. Could you highlight some of those needs?  
7 Obviously, your department is small in size and doing a lot and couldn't possibly achieve  
8 your goals without the collaboration of the other departments. I'm just trying to get an  
9 understanding of what the difficult points are.

10 Mr. Passmore: We've done a lot to improve interdepartmental collaboration. There are  
11 tasks to be done still with formalizing different processes. For example, we have improved  
12 the conditions of approval for development projects. It's a list that we can copy and paste  
13 as comments on development applications. Improvements to the Tree and Landscape  
14 Technical Manual will improve those policies. We're drafting changes to the Municipal  
15 Code to change things like designated officers, responsibility for enforcement, the types of  
16 native trees that are going to be protected. Having these formal policy changes and  
17 authorities is meaningful as we transition staff in the future, as we transition board  
18 members, as we interact with new partners. It's important to have things in writing that we  
19 can fall back on.

20 Vice Chair Greenfield: It's helpful to understand the bigger picture that's going on to  
21 protect the trees in the community. Regarding the native trees that are being planted, in  
22 the fine print it looks like you're focusing on both native trees and climate-adaptive species.  
23 I understand that is controversial in some circles, focusing on climate-adaptive species as  
24 opposed to just the natives that have been here historically. I appreciate that approach as  
25 being the reality that we need to deal with right now. How are you deciding what the  
26 climate-adaptive species are, and is there a list where can see what's on the combined list  
27 of natives and climate-adaptive species that are approved? I'm looking through the Canopy  
28 site and the urban forestry site, and I'm not finding it.

29 Mr. Passmore: Canopy has a tree library that was one of the programs of the 2015 Urban  
30 Forest Master Plan that has been implemented and is complete. There are filter features on  
31 the Canopy tree library that allow you to select drought-tolerant species, trees of a certain  
32 stature, certain types of attributes. That's really what we're going for, an attribute-based  
33 selection system. There's going to be more guidance on attributed-based selection in the  
34 Tree and Landscape Technical Manual. We're also going to reference other sites such as  
35 the Urban Forest Ecosystem Institute and Cal Poly. That's another good resource to enter  
36 attributes about trees. I've always been very hesitant to produce a list. Certain years, there  
37 are species that don't have a good seed crop, so they're really hard to obtain in the nursery

1 trade. We don't want people to default to just an easy selection as compared to matching a  
2 tree that's best for the site.

3 Vice Chair Greenfield: By design, there isn't a specific list out there. When people are  
4 looking to plant trees, I know they work with Canopy. Canopy goes out and works with  
5 the resident and helps select species based on the resident's desires and the suitability of  
6 the location.

7 Mr. Passmore: Attribute-based selection.

8 Vice Chair Greenfield: On the great oak count, the oak study was done 20 years ago, and  
9 this is a redo of the four native oak species. Looking at the climate-adaptive oaks that may  
10 be well suited for the area now, do you think it makes sense to monitor all oaks that are  
11 planted in the City and not just the native oaks?

12 Mr. Passmore: Yes. In fact, we are going to be doing a much better job of monitoring all  
13 trees that are part of a permitted planting. All public trees and all trees planted as part of a  
14 development or other permit, we will be getting an electronic location and attribute  
15 information and be able to track those over time. For example, there are requirements in  
16 zoning that say we're supposed to have 50 percent shading over parking lots. There are  
17 requirements for commercial properties that maintain landscape that's compatible with the  
18 authorized site plan. Without the electronic data on those permits, it's hard to revisit those  
19 15 or 20 years down the road to determine if they have been effectively implemented and  
20 they're still being maintained at the desired level.

21 Vice Chair Greenfield: How would these trees be surveyed over time?

22 Mr. Passmore: Once you input electronic data, we'll be able to use GIS to revisit those  
23 trees electronically and imagery analysis to determine how they've grown over time. It's  
24 actually a pretty accurate method to sample trees of a known population.

25 Vice Chair Greenfield: Getting back to your community forum question, the question is  
26 the challenge of outreach. It is a question that we struggle with in this community. The  
27 sea level rise folks did have a very well attended public meeting last month. That's a good  
28 model for us to strive to, but we're not always that successful. Looking at the Commissions  
29 within the City, there isn't a Commission that's directly applicable to the urban forestry  
30 department. I'm wondering if having the Parks and Rec Commission meeting open for the  
31 purpose of some sort of community review would be something the Commission would  
32 entertain, if that would be helpful for your department.

33 Mr. Passmore: Right now, I'm just throwing it out. I'm very receptive to hearing ideas on  
34 how we establish that ongoing forum.

1 Vice Chair Greenfield: I'm just throwing it out as well. that sounds like something we  
2 could entertain in the future. We can keep in touch on that.

3 Chair McDougall: Thank you for the presentation, and thank you for a lot of really good  
4 work. I participated in a sidewalk survey with a group a couple of years ago. When you  
5 ask people what they like about Palo Alto, it was invariably the trees. To reinforce what  
6 Commissioner Greenfield just said, we always believe that we're here as stewards of scarce  
7 and valuable resources, whether that's pickleball courts or Baylands space. The trees in the  
8 City are a scarce and valuable resource. This Commission might be an appropriate partner  
9 in that. I'm really glad that Commissioner Greenfield brought up the issue of native versus  
10 climate-adaptive. In this community outreach, I worry. I don't know if you think about  
11 this. When you say trees are either native or invasive, you're setting up a dichotomy that  
12 doesn't make for a good conversation. Trees are appropriate or inappropriate for the public.  
13 I understand the technical term. There are lots of non-native trees that are not particularly  
14 invasive that might be allowed to stay in our community. Do you have a comment on that?

15 Mr. Passmore: Yes. When I mention native and invasive, those are two ends of the  
16 spectrum. There is a huge number of species that are climate-adapted, appropriate, and can  
17 thrive. Palo Alto has such a wonderful climate that we can have a very wide variety of  
18 trees that do well here, that are not invasive, that do not inhibit function of our native  
19 ecosystem. I should have provided more information on that.

20 Chair McDougall: That's what I understand and believe. I see Commissioner Moss  
21 shaking his head. This audience might understand it. I worry that using those terms when  
22 you're doing outreach would not be productive. You say there's 36,000 trees, plus or minus  
23 something obviously. Do you have any sense—you talk about street trees and park trees  
24 and trees on private property, and the private property can be commercial or residential.  
25 When you talk about parks, you've got the Foothills and the Baylands parks. Do you have  
26 any idea of the breakdown of where those 36,000 trees are?

27 Mr. Passmore: It's about 30,000 street trees and 6,000 in urban parks. We have not  
28 inventoried trees in open space preserves such as Foothills Park. There obviously is a vast  
29 number of trees in Foothills Park, Arastradero Preserve that we have yet to even estimate  
30 the number and the species composition for.

31 Chair McDougall: You're saying as you move along having GIS tools available is going  
32 to make all of that easier. Do you have a comment on what kind of GIS tools you're using?

33 Mr. Passmore: The City has a somewhat unique enterprise GIS system that is going to be  
34 replaced with a much more common software. We're converting from Geodesy to Esri.  
35 Esri is used by the vast majority of the world. Geodesy is a very small customer base. That  
36 will be the enterprise GIS foundation. We'll build department-specific tools off that.



1 Chair McDougall: A company I ran tried to buy Geodesy at one point. That didn't work,  
2 so we tried to partner with Esri, and that did work. When I see Esri stuff that people are  
3 doing, it's spectacular. Using that tool would be really exciting for us. I can imagine how  
4 the benefits get calculated. I don't really have a question about that. It was on page 12. I  
5 was hoping it would be on page 1, selling the benefits of the trees. I believe people  
6 historically had an historic aesthetic view of the trees. People today are moving in the  
7 direction of having a better understanding that there is real benefit and value and that those  
8 benefits are the ones you've listed, the greenhouse gas benefits, the energy benefits, the  
9 clean air benefits, particularly the human health benefits, both physical and mental health,  
10 and the benefits of trees. With your staff or focus, it would be really nice if we had the  
11 opportunity to understand and grow on that part. That would benefit our ability to support  
12 what you're trying to do. It would benefit your ability to get the funding that you'd like to  
13 have. What you have here is a nice little summary, but even talking more about the benefit.  
14 There are people at Stanford who are doing research on this right now, including people  
15 who are doing research on the redwood tree, which is not a native and is very difficult to  
16 grow here because we don't have the mist that feeds the moisture into the tree at the higher  
17 levels. I'm really enthusiastic about oaks and other things. I'm not sure how much benefit  
18 comes from protecting the redwoods. I realize that might be a politically ...

19 Mr. Passmore: I will debate you on that just slightly. We've had a redwood tree in Palo  
20 Alto for over 1,000 years. I would say that constitutes being native.

21 Chair McDougall: Touché. There's a difference between a single tree that's been here for  
22 a long time and basically the coastal redwood that should be here.

23 Mr. Passmore: Granted. That's why I framed my comments about redwood protection.

24 Chair McDougall: Thank you very much.

25 Commissioner Moss: We lost a whole lot of trees when we redid the golf course. They  
26 didn't belong there. They shouldn't have been there. Have we recouped that loss other  
27 places?

28 Mr. Passmore: Thank you for that opportunity. We have worked very closely with  
29 Acterra, now Grassroots Ecology, to protect 500 naturally established oak seedlings in  
30 Arastradero Preserve, which are all now inventoried. They're protected from predation.  
31 The most common cause of young oak mortality is deer browse. Deer population is much  
32 higher than it was historically. It's very difficult for oak seedlings to grow to maturity  
33 because the deer just browse off all the new buds. We've put some caging and tube  
34 protection around those trees to allow them to mature above the height of deer browse. We  
35 would expect those trees, naturally established, already growing on site, to mature into  
36 fully sized oak trees. That's 500 more native oak trees in Arastradero Preserve that we  
37 have. I heard a question about Byxbee Park. We're also planning to plant some trees on

1 Byxbee. We did do some replacements on the golf course as well. It was not 1:1 on the  
2 golf course because we didn't feel it was appropriate to put the same number and species  
3 of trees back as we had there before. We wanted to do better. We did that on the golf  
4 course and then paired it with what we did on Arastradero and Byxbee Park.

5 Chair McDougall: Commissioner Moss, you mentioned the park in San Francisco, which  
6 is on the transit center, not on Salesforce. On the Salesforce building in Menlo Park, there  
7 is a park. Commissioner Reckdahl took advantage of my offer to take everybody there. If  
8 anybody else would like to visit the rooftop gardens and park and trees at Salesforce, I'd  
9 be happy to arrange that. Facebook, I'm sorry.

10 Council Member Cormack: Thank you, Mr. Passmore, for being here. We certainly are  
11 lucky to have this program and to have you and your experience and expertise and your  
12 team. Many of my comments were covered by the Commissioners. Thank you for that.  
13 Addressing Commissioner Reckdahl's comment about how this Commission could  
14 potentially help is have you ever thought of doing some sort of creative recreation class  
15 around trees and tree planting where the City staff maybe in connection with Canopy could  
16 offer a one-day—I don't know what it is. I'm sure you all can come up with something.  
17 That would be a way to connect and get some more exposure for the program, which is a  
18 little bit hidden even for those who pay a lot of attention to it. That's one idea. You did  
19 mention the CIP programs. As discussed last month, I am on the Finance Committee. I  
20 thought I would just take a quick look, and we could discuss page 3 of 26 in the whole  
21 plan. It looks like we have two big years, year 6 and year 9, with substantial requests for  
22 funding. It looks like the major part of year 6 would be canopy analysis and the major part  
23 of year 9 would be iTree. Do you want to highlight anything about that to the Commission  
24 about those needs?

25 Mr. Passmore: Are you referring to the Implementation Plan?

26 Council Member Cormack: I'm in the second part of it, which is—yes. I think that's what  
27 it's called, the Implementation Plan. I'm on Implementation Timeline and Annual Budget  
28 Needs. I note we have large numbers under year 6 and year 9. Based on looking at the  
29 detail, it comes from a canopy analysis and an iTree. I just wondered if you wanted to  
30 touch on that at all.

31 Mr. Passmore: The canopy analysis paired with iTree benefits modeling historically has  
32 been a very big task. However, these were estimates, most of which were prepared in 2015  
33 based on the tools and data that we had for similar programs. When we introduce GIS and  
34 have more powerful analytics, there may be some ways to minimize those costs with staff  
35 expertise, especially if we hire some people with good skills in technical analysis. We may  
36 be able to bring those costs down to do pieces of analysis instead of a comprehensive  
37 analysis of the entire City. Additionally, the scheduling is predictive. I don't think we're  
38 going to be coming back to Council with a \$400,000 or \$500,000 additional budget request

1 as much as trying to distribute programs throughout years and move stuff around so that  
2 we can keep funding requests relatively stable.

3 Council Member Cormack: That's very helpful. That's good to know.

4 Chair McDougall: Does anybody have any final comments or questions? Walter, thank  
5 you very, very much for spending time with us and giving us this insight into what's  
6 happening and the good stuff that's happening.

7 **3. Sea Level Rise Policy**

8 Chair McDougall: We'll move on to sea level rise. We might want to have Walter stay  
9 with us so he can find out how he gets the same number of people to attend an event for  
10 trees as we do for sea level. Kristen, would you like to do another introduction?

11 Ms. O'Kane: Yes, please. I'd like to introduce Julie Weiss, who's with our Public Works  
12 Department. She is going to be talking to you about sea level rise and the City's Sea Level  
13 Rise Policy. To her right is Jeremy Lowe, who's a subject matter expert on the topic. We'll  
14 turn it over to the two of them.

15 Julie Weiss: Julie Weiss, Public Works Watershed Protection. I also want to introduce my  
16 partner in crime on this project, Christine Luong [phonetic]. She is the manger for the  
17 implementation of the Sustainability and Climate Action Plan. She and I are working  
18 closely together on this project because sea level rise is a chapter of the Sustainability and  
19 Climate Action Plan. Jeremy's been introduced, but I'm going to introduce him more  
20 thoroughly and more properly in just a few minutes when he does a segment of the  
21 presentation tonight. We are looking forward to discussing the Sea Level Rise Adaptation  
22 Policy, which was approved by Council last week. The policy will inform the development  
23 of a Sea Level Rise Adaptation Plan that we will be working on hard over the next year  
24 and a half. We will be returning to you with that plan in late 2020, probably the  
25 November/December timeframe. Just as background for those of you who may not be  
26 familiar with this topic. Developing a Sea Level Rise Policy is a requirement in our Comp  
27 Plan. It's in our Sustainability and Climate Action Plan. It's in various plans and directives  
28 that we have in the City. We're making good on that promise that we've also made to  
29 previous City Councils, to deliver this right about now. Our goals tonight are to answer—  
30 give you chances to ask questions you have about sea level rise as it pertains to us locally  
31 in San Francisco Bay and your questions about the policy and the upcoming plan and to  
32 also hear any initial feedback or your initial thoughts about what's important for you to see  
33 in a plan that we start putting together. I also want to point out that initially we had  
34 scheduled ourselves to come to you first before we went to Council. Our timeline was  
35 changed by the City Manager's Office, who asked us to come a little bit earlier. We have  
36 ample opportunity to still get your input as we put together a plan. The presentation that  
37 we have put together tonight is broken into two components. For the first ten minutes,

1 Jeremy Lowe, our aforementioned subject matter expert, will give you an overview or the  
2 big picture of what sea level rise means for the San Francisco Bay and some of the  
3 adaptation strategies that communities all around the Bay are considering, including Palo  
4 Alto. I will zoom in and give you a closer look at what we're already doing to prepare for  
5 sea level rise in our City and how our sea level rise planning efforts will inform even more  
6 work in the future. I also want to acknowledge that at least three of you have heard this  
7 presentation once. This will be a second time for a couple of you and a third for another.  
8 We have sprinkled in maybe one or two extra slides just to keep you interested and  
9 engaged. Before I introduce and hand this over to Jeremy, I do want to give you a chance  
10 to look at this picture a little bit more closely that you have on your screen. This is a  
11 photograph that I took just a couple of months ago during the king tides that we have in the  
12 Baylands. I would imagine that some of you went out there to take a look because it's quite  
13 a visual spectacle. This was taken across the street from the duck pond in an area where  
14 we don't have any protection. There's no levee. There's just the road and the trail. You  
15 can see that the Baylands habitat is nearly completely submerged. Obviously, the trail is  
16 submerged. It's really difficult to get in the Sea Scout House where the Environmental  
17 Volunteers organization is. If you were to go over to the Interpretive Center, you would  
18 see a couple thousand sandbags that are put out there every year just to keep the water from  
19 overtopping the levee. We see this four or five times a year, but it's not that big a deal  
20 because it's only four or five times a year, but this will be an almost daily occurrence in  
21 just a few decades. After we get closer to the turn of the century, it's going to be really  
22 dramatic, and you'll see some images of that later on, what we think that will look like.  
23 That water will start creeping towards 101, really impacting critical infrastructure we have  
24 like the wastewater treatment plant and the airport, parks, golf course that are out there.  
25 Keeping that picture in mind, I am going to had this over to Jeremy. Jeremy is a senior  
26 environmental scientist who leads the San Francisco Estuary Institute's initiatives related  
27 to rising oceans from climate change. He has 30 years of experience in tidal wetland  
28 restoration and sea level rise adaptation planning both on the Pacific Coast and in Europe.  
29 His career includes designing sea defenses to reduce flooding in Venice, Italy. He is a  
30 local innovator as well, developing nature-based climate change adaptation strategies for  
31 the Bay. Jeremy's also worked at Cambridge and Newcastle Universities in England.

32 Jeremy Lowe: Thank you, Chair McDougall and Commissioners. I'm going to give some  
33 background to the science and the issues that we're facing with sea level rise and with  
34 management of the Baylands and which the policy and recommendations are based upon.  
35 I'll just give a quick primer about why sea level is rising. We're measuring it now, and  
36 we'll be measuring more of it in the future. We're also measuring the drivers for it. One  
37 of the drivers is the warming of the ocean. As you warm water, it expands. That's what  
38 we've been monitoring over the last century or so with our tide gauges. That is a well-  
39 known phenomenon. The more difficult one to predict is the role of ice, particularly ice on  
40 land, in glaciers and the Antarctic ice sheets. That's out of the water at the moment, and as  
41 it melts and as it calves off, it goes into the ocean adding mass. That can raise the ocean



1 levels much more rapidly than just the simple thermal expansions. That is more difficult  
2 to predict. That is one of the reasons why we have more than one projection for what the  
3 future will be like. What we're really interested in, living as a community by the Bay, is  
4 the role of relative sea level rise, the relative elevation of the land to the sea. As the sea  
5 goes up, we also have the land moving up and down through subsidence because we've  
6 diked off areas and we've drained them, but also through tectonic movements as well.  
7 Measuring both of those together and the net result of that is what we're really trying to  
8 manage. We can manage that, and I can show you a graph here. On the X axis along the  
9 bottom is two centuries, one century which we've been measuring and one century which  
10 we're trying to project forward. On the Y scale, the vertical scale, is the change in sea level  
11 in inches. The black squiggly line has been measured at the Presidio. We're lucky, though,  
12 we've got a whole century of observations taken by the USGS. We have a good record.  
13 That black line is squiggly. It marks storm surges, El Nino periods. There's variability in  
14 that signal. You can also see there's a trend in there, and that trend is about 7 inches a  
15 century, and that's sea level rise. Even when we didn't think we had sea level rise, we had  
16 sea level rise. Looking ahead, there's some dotted lines. Those are projections about what  
17 sea level rise is projected to increase over the next century. You can see there's one line  
18 up to about 2050. Most of the models agree it's mainly thermal expansion, it's mainly very  
19 predictable. When people give you projections up to 2050, there's not much variation in  
20 those. Looking ahead into the latter part of the century, you have to think about not only  
21 how much we've heated up the planet so far, but how much more we could heat if we don't  
22 mitigate for it by reducing our emissions and so on. There is some variability in the future.  
23 A century's a long time to make a projection over, but there's also some ways we can  
24 influence that future depending on what our emissions are going to be. We don't have to  
25 work that out. Palo Alto doesn't have to figure those numbers out themselves. The State  
26 does that for you; the Federal Government does that as well. We're lucky that the State  
27 provides clear guidance. They've been updating it on a regular basis, about every five  
28 years. The last guidance came out last year. Each addition of the projections is more  
29 usable. It provides it in simple language, it explains it more and also provides much more  
30 detailed tables and explanation about how to use them in what situations, what kind of  
31 assets are you protecting and how much you're adding it to the future. The same guidance  
32 is being used by State agencies and by the regulators when they come to look at projects  
33 as well. The main take-home is that, as I said, we've already had sea level rise. Looking  
34 ahead, the projections are about up to your knee by about 2050, up to your shoulders or  
35 above by 2100. The take-home point is it's going to continue to happen. Even though the  
36 graph stops at 2100, sea level rise doesn't. When we're thinking about projects on the  
37 shoreline and we're thinking about adaptation, we're going to think about that continuously.  
38 There's no silver bullet. There's no one thing we can do and that'll be solved. That will be  
39 enough maybe for our lifetime, but think of future generations. We've got to keep thinking  
40 about adaptation. There are some uncertainties. The Antarctic ice sheet, if that goes,  
41 significant changes could occur quite rapidly in geologic terms, 10 feet in a century.  
42 Looking ahead, we can expect to see at least 6 feet of sea level rise over the next few



1 centuries. The Dutch, being more risk averse maybe, project over 3,000 years. We tend  
2 to project over 100, 150 years. What's protecting us? This is part of the Hayward Shoreline  
3 at Ora Loma. I just chose this as a typical place. The levees vary in how well they're built,  
4 but they all do the same job. They're keeping the water out. Usually we go along there—  
5 this is the top of the Bay Trail on a nice clear day. This is what they're actually designed  
6 for. This is a storm surge 2005. Usually they're at night so you don't get a good photo of  
7 them. Usually they're on a public holiday as well, so you don't tend to be out there. This  
8 is a good one. That was the same levee, but it's doing its job. It's keeping the water out.  
9 The water's about 3 feet higher, but there's also waves on top of that. There is some  
10 overtopping, and there's some damage to that levee. That's what we design the levees to  
11 deal with. When we're looking at that squiggly line—this is the same graph as sea level  
12 rise. That squiggly line was the mean sea level, the still water level. What we're really  
13 designing for levees and so on are those crosses. They're the highest water level recorded  
14 each month over the last 100 years. That's the levels that we need to deal with. You'll see  
15 there are some real outliers in there. When FEMA are doing their projections for how  
16 much sea level rise is going to be, they say the mean sea level. On top of that, there's these  
17 extremes. They say something like on average the maximum water level is going to be at  
18 least this once a month, once every two months, once every five years, once every ten  
19 years, once every 50 years. We design over a term period of something's going to happen  
20 into the future.

21 Commissioner Reckdahl: What are the units on this graph?

22 Mr. Lowe: They're inches of sea level. If we're doing that, when we design a structure or  
23 build a house or something, we do it to FEMA and we say we're protecting to 100 years  
24 now. In the future with sea level rise, that 100 years is going to become a 50-year, a 20-  
25 year return period. The amount of protection our structures are going to provide is going  
26 to reduce. That risk is always increasing as sea level rise is. We need to be aware of that  
27 if we're protecting communities in the areas. We also need to protect from behind. We  
28 have creeks, we have streams coming down to the Bay. As the water levels—they  
29 discharge out to the Bay. What tends to happen if the Bay is high, during a high tide or  
30 during a storm surge? That water can't get out to the Bay, and so it tends to flood behind.  
31 That's why we build flood basins. That's why we the marshes do a great job of absorbing  
32 that area. If we levee those places off, that water tends to back up into the cities. Sea level  
33 rise risks translate inland if we don't manage things properly. There's a disaster now as we  
34 increase storminess, sea level rise. We have atmospheric rivers that are coming through,  
35 more precipitation so more issues of river discharge to the Bay. We have our marshes  
36 changing as well as all these changes, which we've been managing. We have land  
37 subsidence. Groundwater changes are important. They're a lot less well known. Also, we  
38 need to provide that level of protection to the development. A lot of these Baylands are a  
39 part of the economic engine of this area, so we need to manage those in light of all these  
40 places. There are lots of great ideas about how you do this. This is one idea. At the back

1 we have a traditional flood risk management levee. Usually in front of that we'd have a  
2 marsh, a very steep change between the flat marsh and a steep levee. The idea here is that  
3 gradually we're going to put a longer slope in front of our levees. We call them a seepage  
4 slope or a horizontal levee, which provides upland areas in places.

5 Chair McDougall: Could you repeat what they're called?

6 Mr. Lowe: Horizontal levee. In doing that, we're providing more space, more upland areas  
7 adjacent to marsh. We're providing good habitat. We're providing space during storm  
8 surges for species to go, but they also provide protection during storms. They provide a  
9 space for the marshes to go as sea level rises. As an example of that, at Ora Loma in  
10 Hayward where they built a pilot study of this. Julie's going to be talking to you about how  
11 this could be applied at Palo Alto, where it's being considered in the yacht basin in  
12 conjunction with discharges from the wastewater facility to provide some hydrology as  
13 well as elevation for that levee. We're combining different benefits on the shoreline, and  
14 we're preparing it to be more resilient in the long term and focused particularly on the  
15 introduction of native species into these areas and in support of those. There are other ideas  
16 around the Bay. Some are appropriate for different parts of the Bay. Oyster reefs provided  
17 as breakwaters are being looked at in San Rafael and in the North Bay. Choosing what's  
18 appropriate for different parts of the Bay is important. The Bay is different all around.  
19 Thinking of the opportunities we have in this area as well is the salt ponds and the  
20 restoration of those salt ponds as part of the South Bay salt ponds project. They're already  
21 incorporating features such as those horizontal levees, such as marshes, such as the  
22 mudflats to start not only providing restoration, but they also provide benefits in terms of  
23 sea level rise accommodation. We've got to think about this on a large scale. This is a  
24 land-scale problem. It's not a Palo Alto problem. It's something that you can work with  
25 the neighbors with, and you benefit from their work. It's also a long-term problem. That's  
26 one idea that we have to start to think about, that there's no one answer to this. What we  
27 have at the moment, the marshes will do a job. Here I tried to show this as a timeline in  
28 terms of feet rather than years. This is feet of sea level rise. Our existing marshes, our  
29 existing habitats will last for maybe 9 inches or so. They're natural systems. They will  
30 evolve, but we've hemmed them in a bit, and we've cut off their sediment. We've done a  
31 whole lot of things to make life difficult for them. At some point, we might want to do  
32 something to protect those marshes but also to protect what's behind them. At 9 inches,  
33 we say we need something, but it takes a long time to build and design and to raise money  
34 and to get permits for. We might have to start thinking at 2 inches about a decision of how  
35 we're going to go, spend some lead time getting that in place, and then building it. We've  
36 added sediment and we've increased the height of our levees, but we might have to do  
37 something bigger because that's only going to accommodate maybe 1 or 2 feet of sea level  
38 rise. Then, we've got to start thinking about a plan B. That plan B might be one of those  
39 big, horizontal levees, which we haven't built. It's expensive to build. We need permits  
40 from BCDC, which they're presently having discussions about how to manage those types

1 of things. We need to start thinking, almost at the same time as we're thinking about plan  
2 A, about plan B because these things are big changes to our landscape. In the very long  
3 term, when things get serious at the end of the century or so, if those projections come to  
4 fruition, we need to think about how we use that shoreline and have we got everything in  
5 the appropriate place. There's a limit to how much we can maybe hold the line. We need  
6 to think about how we accommodate sea level rise. That type of discussion of how we plan  
7 in the future is the type of thing that Julie is now going to talk about in terms of the policy  
8 and recommendations that they've been making in their Sea Level Rise Policy.

9 Ms. Weiss: To answer the most basic question, why do we need a policy and a plan, we  
10 know this is a priority of our City Council. Climate change is one of the top four priorities.  
11 In starting to put together the policy, it became clear to me that it's not just a policy  
12 statement, which is usually three or four pages. We need a full-out plan that we're going  
13 to be returning to you with in about a year and a half. The policy bridges these very high-  
14 level, conceptual policy statements like use the best science or plan for sea level rise that  
15 we have in the Comp Plan. They're great, but they don't really say a whole lot. This policy  
16 bridges that with a very meat on the bones, nuts and bolts plan of what we're going to do,  
17 when we're going to do it, and who's responsible for it. That's what our intent is. On the  
18 most practical level, we have a community that we love and we care about. We care about  
19 our future generations, and we need to be planning for them now if they want to have a  
20 similar community to live in as we do now. We also need to be making sure that, in a city  
21 where we have departments that are spread out all over the city, we are unified and singing  
22 off the same sheet of music about what the plan is and what we're doing and when and  
23 we're using the same technical guidance. We also need to be good neighbors to the cities  
24 of Mountain View and East Palo Alto because anything we do along that Bay edge is going  
25 to impact them. It could help them. It could hinder them if we were to build something  
26 that just pushes water in their direction. We need to be working closely with them and also  
27 with our broader regional partners. We also need to be able to answer to the public, and  
28 we need to have a cogent, well thought-out plan for the future. The good news is that we  
29 are not starting from scratch. We have several projects under way. The SAFER project  
30 that Jeremy mentioned is the proposed alignment. There are several different proposed  
31 alignments that will be brought to City Council at some point for levees. Right now, staff  
32 has commented—this is the Public Works engineering group—on a feasibility study.  
33 We're waiting to get a revised report back. Hopefully, an update will be coming to you in  
34 the near future. The project that I am personally interested in and excited about is the  
35 horizontal levee. We do have preliminary plans for that. That's in partnership with the San  
36 Francisco Estuary partnership. We have some of the funding we need for that. That would  
37 be in the area I showed you, where we don't have any protection, that flooded area. We  
38 are working on the plan for that right now. A project that you may recall hearing about  
39 this last December was the completion of the San Francisquito Creek project, which  
40 widened that creek area that goes out to the Bay. One piece of that project was to put up a  
41 flood wall. You can see that flood wall here. It was before the project was completed.





1 That helps protect East Palo Alto for 3 feet of sea level rise and a couple of feet of storm  
2 surge as well. This portion of the project would be part of any of those SAFER alignments  
3 as well. You can see these connections starting to happen. This will be one of the new  
4 things that those of you who have seen the presentation before haven't seen yet. We've  
5 already started making adaptation plans for the wastewater treatment plant. Probably  
6 within the next year, we will have a new outfall pipe. We'll have two outfall pipes from  
7 the wastewater treatment plant where we discharge to the Bay because we need to have  
8 that additional capacity to push water out if we have sea level rise. We've also been as a  
9 City working on filling some data gaps. This is a project that the Community Services  
10 Department spearheaded as part of the BCCP project. They put together a vulnerability  
11 assessment for the Baylands habitat. The key takeaways there were 12 inches is where the  
12 Baylands habitat starts having problems. You remember seeing that in the picture where  
13 it was almost complete submerged. Three feet is where we start seeing impacts for  
14 everything else on that east side of 101 but also past 101 too if sea level rise was to extend  
15 past that. Right now, we don't think Byxbee Park would be affected, but the horizon for  
16 that vulnerability assessment was just up to the turn of the century and not after. We care  
17 about that because if sea level rise does start moving into that landfill, you could see some  
18 mobilization of pollutants. Another project I know you are aware of is the Green  
19 Stormwater Infrastructure Plan. The idea is we have these upstream water sources that are  
20 flowing downstream to where sea level rise would be happening too. How do we reduce  
21 that source of water? I know you're familiar with green stormwater infrastructure, so I  
22 won't go into that too much. If we're doing all this, why do we need a policy and plan?  
23 What we have is great, but we need to do more. It's not enough especially when we know  
24 that globally greenhouse gas emissions are going up, oil use is going up. We are not going  
25 in the right direction. When we have more greenhouse gas emissions, that equates to more  
26 sea level rise in the future. We need to be doing more. To give you an idea of what we  
27 could anticipate for sea level rise in the next few decades, this is mid-century, 2050, about  
28 a foot of sea level rise. If you see that dark blue, picture that image that I showed you at  
29 the very beginning. That's about what it would look like. Things get really interesting  
30 after the turn of the century if we were to do nothing. Of course, we are doing something,  
31 but this is what it could look like if we did not take action. There are other models that  
32 look more dramatic than that. Another area that we need to learn more about is the impacts  
33 of sea level rise on groundwater. Sea level rise pushes groundwater inland and closer to  
34 the surface. It increases the salinity. It could also mobilize pollutants. It could cause  
35 problems for people who have basements or for the underground infrastructure at the  
36 wastewater treatment plant or at the MSC. While there are some studies, we don't have  
37 site-specific information for Palo Alto. We will need to do a study to learn more about  
38 what that means for us. What could the sea level rise action plan look like? There are a  
39 lot of things we could be doing for a plan. Some big bucket ideas here is filling those data  
40 gaps, looking at sea level rise, incorporating sea level rise in groundwater into our site and  
41 design and permitting process, in emergency planning, certainly including an economic  
42 analysis of critical assets to protect. That will be one of the things we need to get leadership



1 guidance on. For example, we know critical infrastructure like the wastewater treatment  
2 plant or fire stations are important, but we've also just invested millions of dollars in the  
3 golf course. We have playing fields. What do you all think about that? What are your  
4 priorities for us to be protecting? One of the most important ones under physical is CIP  
5 projects, these large projects like SAFER and the horizontal levee, adaptations for the plant.  
6 Part of a plan would include prioritizing those in terms of the bang for buck and also when  
7 we need to take action, when do we sequence those, when do we start trying to find funding  
8 for those. Along the Baylands, it could also include looking at different plant palettes that  
9 we have out there, that are more resilient to rising tides, and informational and outreach  
10 ones, providing maps for people who are looking to do construction projects in the area,  
11 and then public outreach and engagement. There are a lot of things we could do there to  
12 educate people about what to anticipate for the future. In putting together our policy, which  
13 is no longer a draft—it is now adopted—we did reference all of the places where we've  
14 made commitments in City documents. We looked at the best literature out there. For  
15 what we should be including, we used our own personal experience. We had it reviewed  
16 by a lot of experts, academics at UC-Berkeley, Jeremy and the San Francisco Estuary  
17 Institute and his colleagues. We shared it with cities and counties on either side of our  
18 border. Of course, staff. We had a public meeting that was well attended in late February.  
19 The policy says we need a plan for rising tides, we need to keep focusing on greenhouse  
20 gas reductions, we need to be leading by example and not waiting for anyone else to come  
21 in to save us, and we need to be relying on the Ocean Protection Council Guidance, which  
22 is considered the best standard science on what we should anticipate for rising tides.  
23 Instead of reading this whole list, the procedures are two things. We need to do a  
24 vulnerability assessment which leverages the work that was already done by CSD to inform  
25 and tell us more about what we can be doing to protect our built assets. After we have the  
26 vulnerability assessment, then put together the plan that includes some of the components  
27 that I've shared with you. Next steps are we need to wait to confirm that our budget has  
28 been approved so that we can send out an RFP to do a vulnerability assessment. That  
29 should be coming up soon. Start meeting more regularly interdepartmentally and also  
30 across city borders so that we keep in sync with our efforts. We received some feedback  
31 from our public meeting that we should put together a sea level rise task force. We're  
32 looking into doing that. In winter 2019, we would start on plan development. We do need  
33 to do CEQA as part of this effort, we have been told. We would return to both the PRC  
34 and Council with a proposed plan at the end of 2020. That is our overview. We would  
35 love to hear input you have about our future planning efforts.

36 Chair McDougall: Thank you very much for that, both of you. I'll start with Commissioner  
37 LaMere as long as he's not sneezing down there.

38 Commissioner LaMere: I'll pass.

1 Commissioner McCauley: Thanks very much for the presentation. It's definitely sobering.  
2 I don't have any questions. Thanks.

3 Commissioner Reckdahl: I want to curl up in a fetal position. We've talked about putting  
4 higher levees in. The water erodes dirt, but also mud accumulates down at the Bay. If we  
5 put this higher levee down by the Bay, what would happen long term? Would mud build  
6 up, and there would be a marsh there? Would it just be a drop off and no marshy area?

7 Mr. Lowe: In this area we tend to have a marsh in front of our levees. What would happen  
8 is you build a higher levee, and it stays in one place, but you've drawn a line in the sand  
9 sort of thing. The marsh naturally would tend to build up. That's what they've been doing.  
10 They also tend to move landward or they transgress. You have a fixed object meeting a  
11 moving object, and they squeeze. You call it coastal squeeze. You gradually lose that  
12 width. You lose the habitat, the value of the marsh in terms of keeping water clean, all  
13 those ecosystem services. One of those ecosystem services is reduction of wave action and  
14 protection to the levee itself at the low water levels. Then, you're exposing the levee to the  
15 open Bay, and you get more cost of maintaining that levee and more overtopping of that  
16 levee, so you have to build an even bigger levee. Having a levee, it's great to have a marsh  
17 in front of it. Protecting the marsh is not just for the habitat benefits. You would like to  
18 maintain those marshes as part of a hybrid shoreline of natural and manmade features,  
19 which protect us. We're starting to realize we've had that all along in the last 150 years.  
20 We're now starting to value it, that value of the protection of the marshes. That's what  
21 we're trying to maintain and build upon.

22 Commissioner Reckdahl: We're talking about 6 feet of water. If we raise the levee up 6  
23 feet, eventually ...

24 Mr. Lowe: Remember, as you raise a levee, you have to widen it. That's even more of a  
25 problem. If you look at East Palo Alto, there's not much space between the houses and the  
26 marsh. You can't fill in there because it's a reserve. The SAFER project has a real issue  
27 of how much space it can place these bigger levees on. That becomes a question for  
28 society. We need more space at that end. What do we do? We've developed right up to  
29 the edge. We value the marshes at the other side. We're squeezed in between. Some of  
30 these discussions we can keep raising, but there's a limit to how much we can do. The  
31 other point is, even though you're raising the levee, the ground behind it is still at the same  
32 elevation. The damages caused by a flood are dependent upon the depth of water you have.  
33 That's the general way you calculate it. The rule of thumb is that all levees are going to get  
34 overtopped. There's always a bigger flood. Something's going to happen. If we keep  
35 building the levees higher, when we do eventually have a flood, the consequences are much  
36 more catastrophic. In terms of a risk approach, we should be thinking about in the longer  
37 term are we putting people at risk and assets at risk that we could move. Of course, moving

1 in the Bay Area is problematical in terms of where you would move to. These are things  
2 we're going to have to grapple with.

3 Ms. Weiss: I just want to add something to the idea about the levee. SAFER, the design  
4 would allow us to add to it in the future. We wouldn't be having ...

5 Commissioner Reckdahl: SAFER's that horizontal levee?

6 Ms. Weiss: No. SAFER is the proposed levee alignments that could go all around the Bay.  
7 Not the horizontal levee itself; although, that would be sort of inserted into that alignment.  
8 Does that make sense?

9 Commissioner Reckdahl: Yeah.

10 Ms. Weiss: We are not going to be building a 20-foot levee immediately. What could  
11 happen is the levee design could be built upon in the future. That's part of the adaptive  
12 management. We don't need to do everything now, all at once. We can stage it over time  
13 and add to it over time. There are limits to that, as Jeremy was saying. We should  
14 remember that too.

15 Commissioner Reckdahl: In the presentation, you showed those oyster—what did you call  
16 it? Oyster beds or oyster ...

17 Mr. Lowe: Oyster reefs.

18 Commissioner Reckdahl: You said that was good for certain parts of the Bay. Was that  
19 good for our part of the Bay or not good for ...

20 Mr. Lowe: As the discussion earlier about the climate-adaptive trees, parts of the Bay are  
21 going to become better for some species and not for others. Around the Bay, we have types  
22 of habitat. We have marshes in the north Bay and the south Bay. In the central Bay, we  
23 tend to have more rocky shores. We used to have a lot of beaches there, which we don't  
24 see because we've built on top of them. We've also released a lot of mud from the Sierras,  
25 and they coated them. Those are ideas. Beaches, marshes, oyster reefs were prevalent a  
26 few thousand years ago. They've changed. They were farmed out. Those are  
27 opportunities. What we would like to see are those opportunities being used like a big  
28 restoration of the Bay, putting things in the appropriate places. Not just choosing out of a  
29 list, but this is what's appropriate and in the right combination. If you're going to have a  
30 marsh, you need a mudflat, and you need some upland behind it. You can't just take the  
31 mudflat and the upland and not have the marsh in the middle. What we have been doing  
32 for the last 40 years is restoring it very carefully and thinking about this big landscape. We  
33 want to continue doing that, but also reap the benefits for sea level rise and for protecting  
34 us as well. That's what I meant by what's appropriate. There are maps that show where

1 oysters are appropriate. We're on the southern end. It's a bit too murky in the water for the  
2 oysters here.

3 Commissioner Reckdahl: There are other options that might be appropriate here.

4 Mr. Lowe: There are certainly places that are, and it's certainly something to consider.

5 Commissioner Reckdahl: You're doing very good work, and I appreciate it. Thank you.

6 Commissioner Moss: You don't have much real estate to deal with. You have maybe 200  
7 yards or 150 yards of marsh between the runway and the water, the current shoreline. Are  
8 you suggesting that we're going to expand the shoreline out into the Bay and also raise the  
9 existing marsh 5 feet, in other words, take all the marsh, put it away, put dirt down, put the  
10 marsh back on top of it 5 feet higher?

11 Mr. Lowe: No. Sorry if I did give that impression. The idea is that marshes do this  
12 themselves. Naturally, they will accrete. The Bay has a lot of sediment in it. At the highest  
13 tides, it comes in over the marsh. The water slows down because it goes through all the  
14 vegetation and deposits that sediment, and it gradually builds up. That's how marshes form.  
15 Our marshes are several thousand years old, and it's taken a long time. They will react to  
16 changes in sea level rise. As the water gets deeper over them, as the sea level rises, we'll  
17 start seeing them going up. What we're hoping is we can continue to use the marshes as  
18 we have done to provide protection for the levees and for the airfield. Two hundred fifty  
19 feet, I think you said—you'll find all marshes erode, and sometimes they build up. They'll  
20 do that naturally. I don't think anywhere in the Bay we've actually pushed a marsh out or  
21 tried to build a marsh further out than it was historically. It's very difficult to do because,  
22 as you get into deeper water, it's very difficult to establish a marsh. You don't have a  
23 mudflat. You don't want to do that. What you want to do is maintain the marshes we have  
24 and provide them with sediment to grow up, allow those natural processes to occur. At the  
25 landward end, when we're talking about placing that longer slope, as we're doing at the  
26 yacht basin, we're doing that on an area which is behind the marsh. It's in an upland area,  
27 so we're trying not to—we don't want to spoil the marsh while we're trying to protect it.  
28 We're trying to accommodate that space. As you say, there's not much space. Nature needs  
29 space to do the job. A concrete wall would stop things immediately. A marsh takes a bit  
30 longer. It doesn't take a whole lot; it takes about 50 feet or so to do most of its job. We  
31 have some space. Valuing and maintaining those marshes are as important as building  
32 these bigger levees and maintaining the protection behind.

33 Commissioner Moss: I didn't realize that the marsh could grow as fast as it needs to, to  
34 overcome the accelerated sea level rise that was never in nature before.

35 Mr. Lowe: There's one caveat. We've never seen the sea level rise as quickly as it's being  
36 projected over this century. What we see is the marsh responding to sea level rise. We can

1 say it can cope with this because it can. What we don't know is what the upper limit is.  
2 Part of that is related to how much sediment is in the Bay. The Bay has been clearing.  
3 What was being produced by the hydraulic mining from the 1850s has worked its way  
4 through the delta. We've had a lot of iron. The TDMLs we have, which improve the water  
5 quality, also reduce the amount of suspended sediments we have in the Bay. We know  
6 they're good. They've lasted so far.

7 Commissioner Moss: Where exactly is the SAFER levee, near the Interpretive Center and  
8 the environmental ed center? Is it between the runway and the environmental ed center?  
9 In other words, the environmental ed center is outside the proposed SAFER. I just need a  
10 visual. I'm confused about the horizontal levee versus the SAFER.

11 Ms. Weiss: Each of these colors represents a potentially different alignment that is being  
12 considered. Tell me again your question.

13 Commissioner Moss: The orange or red line is just outside the runway; therefore, we would  
14 probably—we hope that the marsh will survive, everything outside that orange line. A  
15 whole lot of our Baylands is outside that orange line. Will we lose all of that in our  
16 Baylands and when?

17 Ms. Weiss: You're saying when are we going to lose that?

18 Commissioner Moss: Yeah.

19 Ms. Weiss: I'm not sure of the height at that level. I would anticipate mid-century we'd  
20 start seeing—do you (crosstalk)?

21 Mr. Lowe: There has been modeling of the marsh surface all around the Bay. It depends  
22 upon how high the marsh is at the moment. Some marshes are higher than others. Some  
23 are more mature than others. Also, the amount of sediment that's around in the Bay. The  
24 south Bay has a lot more sediment in the water than in the north Bay. It depends on the  
25 salinity because different types of plants like different types of salinity, and they trap  
26 sediment better. Up to about 2080, 2090, we should have marshes that are okay. After  
27 that, if those curves continue to accelerate and if the Bay continues to clear, that's when it  
28 starts becoming problematical. What we haven't experienced is the drowning of marshes.  
29 We know how they grow up, but we don't necessarily know how they grow down. Does  
30 all the vegetation die off or does it go in reverse like you'd expect? We've occasionally  
31 seen drowning of marshes, but they tended to be tectonic. Everything dropped down in the  
32 space of a few seconds during an earthquake. What we haven't seen is this gradual change.  
33 What we're looking to is the East Coast where we do see that occasionally, that kind of  
34 gradual drowning. When it's going to happen—these marshes should last you to the end  
35 of the century unless we give them more space to move or unless projections ...

1 Commissioner Moss: That orange or red line, is it going to be like a 3-foot high wall or is  
2 it going to be a levee that's ...

3 Ms. Weiss: I don't know the answer to that because I'm not the manager for the SAFER  
4 project. I don't know that level of detail. I'm sorry. The SAFER project is not just about  
5 walls. They're also looking at expanding habitat in certain areas. They're really looking at  
6 a mix of these constructed adaptations and the marsh. They're trying to do more than just  
7 build a wall. They're trying to improve habitat and also recreation.

8 Vice Chair Greenfield: Thank you for the presentation. It was certainly dense enough with  
9 material and sobering enough that it's definitely not boring a second time. The visuals are  
10 excellent. To Commissioner Moss' questions, one suggestion is to create a new diagram  
11 using an aerial photo and overlay where the horizontal levee would protrude into. That  
12 would give people a better visualization idea of what you're talking about. I was wondering  
13 the same myself. It makes a lot of sense as a community for us to be considering new  
14 permitting guidelines for areas that are likely to be impacted with sea level rise based on  
15 the projections. That's certainly going to fall to Planning and Council. One question I feel  
16 like hits close to heart for the Parks and Rec Commission is the 10.5 acres of land that's  
17 located in the Baylands area near the baseball fields, which is more or less designated for  
18 potential development for recreation purposes. I'm wondering what we should be thinking  
19 as a Commission in terms of development plans for this area or things like playing fields  
20 potentially for soccer or baseball. Certainly, this area is going to be impacted at some point  
21 in time. The impacts on a field aren't as severe as for buildings. Can you give us some  
22 guidance on what we should be thinking near term as we consider development of this area  
23 near term?

24 Ms. Weiss: When we are putting together our plan for that, it's good for us to know that  
25 that is a concern so we can list that as something that we need to be addressing when we  
26 bring that back to you in terms of recommendations. It may be that we could still use that  
27 area in the short to medium term and also be keeping it on our radar for the longer-term  
28 horizon, what sea level height would require us to do something different. I don't know  
29 that it means we have to abandon all use or recreational use immediately, but we do need  
30 to know when we need to start taking action on that area. What else would you add?

31 Mr. Lowe: That's very appropriate. What we're going to see first is nuisance flooding. It's  
32 not that the big deluge is suddenly going to turn up or it's going to be completely covered  
33 in water all the time. It's really occasionally in king tides and so on that things are going  
34 to get difficult to use. As long as the use is appropriate, as long as you haven't put things  
35 in which can't get flooded or something like that and it causes you problems. There are  
36 lots of examples around the Bay where people are thinking about trails that can be flooded.  
37 You go up to Marin and Richardson Bay, and they have that trail which regularly gets  
38 flooded on very high tides. 99 percent of the time, it's used perfectly well. As long we're

1 managing the uses, then there are lots of things you can do. It's just being aware of what  
2 those consequences are. If it's of a higher value, if it's the wastewater treatment facility,  
3 you can't continue the operations like that. Choosing activities which are appropriate for  
4 that level of flooding and being aware that it's going to increase. It's not going to decrease.

5 Vice Chair Greenfield: Another consideration related to that you might want to comment  
6 to us later on, it's likely we would be considering using artificial turf fields for that area as  
7 opposed to grass fields. That would be another potential complication with respect to  
8 flooding and contamination at some point. Regarding the vulnerability assessment. Do  
9 you have a feel for what type of adaption strategies will be recommended? I don't know if  
10 you can spill the beans in advance just to give us a flavor of what kind of menu of strategies  
11 would be considered. How much time do we have to kick the can down the road versus  
12 acting now? It feels like there's a higher urgency given the long-term nature of the  
13 planning.

14 Ms. Weiss: There are certainly things that we can take action on in the short term, the next  
15 2-5 years. We can start looking at changing maps and presenting information when people  
16 are coming in. Let's say they want to do something to a basement. Can we provide them  
17 a map that shows they're in both a flood zone and a sea level rise zone? We could consider  
18 restricting those types of underground structures. That would be a bigger discussion for  
19 this group and for Council. We could be looking at elevating electrical panels. At the  
20 wastewater treatment plant, we could put raised areas around critical infrastructure to keep  
21 that water out. Again, moving anything that's electrical aboveground. The new dewatering  
22 facility that we have at the plant, that was also raised 12 inches aboveground. Those are  
23 bigger projects there. We did talk about looking at planting plans, implementing GSI,  
24 which we're already doing. There are a number of things that we're already doing in the  
25 short term and in planning now and starting to figure out funding now for these larger  
26 projects like SAFER. That's the \$64,000 question, how are we going to be funding these  
27 things so we can start planning now for that.

28 Vice Chair Greenfield: It's nice to end on a pleasant note of hearing some positive  
29 mitigations that we can consider in the near term.

30 Chair McDougall: For the people who are disturbed by the seriousness of this story, there's  
31 a book by a guy named David Wallace Wells, *The Uninhabitable Earth*. If you really want  
32 to be scared, you should read it. I would defy you to have a night's sleep after that. Aren't  
33 we all glad that we approved that boardwalk that was so high above the Bay? We all  
34 objected to it at the time, and now we're going to be happy. I may be speaking more to  
35 maybe Kristen and Council Member Cormack. When I read your policy thing—I attended  
36 your presentation, so I've heard this before. The introduction and the summary talk about  
37 the fact that the City recognizes the best way to avoid long-term impacts and minimize  
38 adaptation response costs is to reduce greenhouse gas emissions. That's a paragraph. In



1 the background, the first thing it says is greenhouse gases trap the Earth's heat. It goes on  
2 to immediately talk about building levees. I was struck by the fact that, as you talked, you  
3 started to use terms like adaptive and appropriate, which sounded like an echo from the  
4 previous urban forest presentation we had, where we started to hear the words adaptive and  
5 appropriate. What I'm concerned about for the City is there are different competing  
6 interests relative to climate change relative to greenhouse gas and the things that we should  
7 do. We heard Walter talk about collaboration between all the departments. You're talking  
8 about collaboration between all the departments. Pretty soon we've got more activity going  
9 on to collaborate, and that might be hard. I'm used to an environment where you talk about  
10 having a framework. In the framework, you plug things into the slots in the framework. I  
11 worry that the City needs a framework. Even when you say—you had S/CAP. I'm not  
12 sure that even S/CAP was construed in a framework, nor was the Comprehensive Plan  
13 relative to all of this. Even a Commission or body that all these different pieces need to  
14 come to so that we really are doing it together. For example, I know San Francisco Estuary  
15 has a paper that talks about one of the things you could be doing is upland planting trees  
16 as a way of dealing with the fact that you have sea level rise. That sounds like something  
17 we just heard. Maybe I'm just ranting, and I'll stop. That's my concern, that we look at all  
18 this together and don't decide to spend a lot of money on levees because you guys are better  
19 salesmen than Walter was and we don't spend the money on trees or Walter is the better  
20 salesman and he gets a lot more trees and you don't get your levees. I don't know how we  
21 bring all that together. Maybe the City is doing that but not in a way that's visible to us in  
22 general, me in particular. I'll stop at that and give Council Member Cormack an  
23 opportunity to comment.

24 Ms. Weiss: May I comment?

25 Chair McDougall: Please.

26 Ms. Weiss: One thought I had when we put together this plan is to approach it after we  
27 have a vulnerability assessment and we have a menu options because we're all learning  
28 what do we do. That's one of the main questions I'm hearing from you tonight, what do we  
29 do. We're all trying to figure that out. Agencies all around the Bay are trying to figure it  
30 out, and we're all learning. Once we get a menu of ideas together, we could approach the  
31 sea level rise adaptation plan similar to what we've done with the S/CAP, Sustainability  
32 and Climate Action Plan. It's not the three of us drafting a plan in a silo separate from the  
33 urban forest group, for example. We are working with those groups, so that they are also  
34 drafting that plan themselves, so that it's naturally going to be integrated with their plans  
35 too. Does that make sense?

36 Chair McDougall: It does. I think I like the word integrated better than I like the work  
37 collaboration. Maybe that's picky. I appreciate the fact that you said integrated relative to  
38 the challenge that we have as a set of integrated plans that is optimized. The question I

1 asked Walter was the whole question of benefits, how do you measure and legitimately  
2 compare those benefits. If there's a plan to integrate, then I'm thinking we're moving in the  
3 right direction. I would go so far as to say I don't think collaboration is enough. It has to  
4 be integration. Thank you for that. That's a really good point.

5 Council Member Cormack: Thank you, Chair McDougall and Ms. Weiss and Mr. Lowe.  
6 Third time still the charm. I've learned a little bit more. Vice Chair Greenfield's comments  
7 about the visuals, there are two that are particularly effectively, the extreme water level  
8 slide build and the adaptation pathway slide build are excellent. That's the one I found the  
9 most comfort from, laying it out and seeing there's a path. If we start here, we'll be at least  
10 in a better position for the next part. One thing we haven't talked about tonight, but we did  
11 talk about last week and was in the Council's work, is the concept of the expected life of  
12 an asset as we look forward. That would be one component to consider when you're  
13 looking at the 10 acres. To answer your question, Chair McDougall, about are we getting  
14 different versions of sales, I don't think this is about sales. It's a little bit more about  
15 science. As someone who talked about this issue during the campaign last year, I'm  
16 reassured that the City is taking such a thoughtful approach that includes all the things that  
17 we would ask, not just because it's a good thing to do, because it's actually necessary. The  
18 water doesn't respect our boundaries. I'm very comfortable with where we are in terms of  
19 this. I am glad you brought up the first part about the greenhouse gases. A separate issue  
20 is the S/CAP plus the SIP. Now for us to address the crisis that is global climate change  
21 maybe not, but it's certainly the method we have right now. That's part of why climate  
22 change ended up as one of the Council priorities. Are we doing this the right way, should  
23 it be one of our many plans or is there another way we should be thinking about this? That's  
24 work we'll all be doing this year. Don't have any answers on that but certainly willing to  
25 entertain thoughts and suggestions about how we move forward, whether it's something as  
26 straightforward as a new component of the staff report that addresses this more directly  
27 around greenhouse gases. Open to what we can do there to take this one and understand it  
28 throughout the City.

29 Chair McDougall: Any other comments anybody wants to make? David.

30 Commissioner Moss: Kristen, when we had the Cubberley Master Plan, we did the public  
31 participation in a certain way that you really found effective. Would you use that model  
32 for something like this because you have about 9 or 12 months' worth of public engagement  
33 going forward? Would you use something like that or would you use a more traditional  
34 steering committee organization?

35 Ms. O'Kane: It depends on what the goal would be. If the goal is to have the community  
36 sitting down at a table trying to solve a problem or design something or generate ideas off  
37 one another, then yes. If it's more providing information to the community, then maybe



1 not. I don't like to use the answer "it depends," but in this case it does depend on what the  
2 goal would be with the community engagement.

3 Ms. Weiss: For the community engagement piece of it, we have discussed having a sea  
4 level rise task force. The goal of that task force would be to help inform both the process  
5 for plan development and the components for the plan development and likely the staging  
6 for that. It will be something we'll be doing for decades into the future. That would be the  
7 two purposes I see of a task force, giving us feedback on both the plan development and  
8 the process for it.

9 Commissioner Moss: It doesn't seem like it's the same model as the Cubberley Master Plan  
10 where we have many, many stakeholders, and they all have different things that they're  
11 looking for. You have one goal, and it's a very technical goal. It seems more like you  
12 would get a task force of technical people to help you and department representatives,  
13 things like that.

14 Ms. Weiss: It would be a mix of technical people and just people who are going to be  
15 impacted by it. Businesses will probably want to be able to have a voice at that table. I'm  
16 just thinking off the top of my head. Educators, people certainly with environmental  
17 expertise from surrounding nonprofits like Acterra and Grassroots, people who do  
18 restoration. We would need to be thoughtful about who we invite to be part of that task  
19 force. We're going to want to have a diversity of people including people who may not  
20 have technical expertise but who are concerned about what happens in the area that's most  
21 likely to be impacted.

22 Chair McDougall: Julie, thank you very much for the presentation and the candid  
23 discussion. Jeremy, thank you for your insight and the fact that Commissioner Reckdahl  
24 won't sleep tonight. Council Member Cormack's comments probably did make us feel  
25 better that there's somebody looking at the whole thing. Thank you.

26 **4. Other Ad Hoc Committee and Liaison Updates**

27 Chair McDougall: The last thing on our agenda tonight is ad hoc committees. We made  
28 an attempt this time to get written input so we didn't have to spend a bunch of time trying  
29 to go through the ad hocs. Commissioner Greenfield was diligent and provided  
30 information. You should all have that in front of you. I'm only going to ask if anybody  
31 has any questions on anything in this. Not here but through Natalie, if anybody has  
32 suggestions about a better or different format, Vice Chair Greenfield and I will look at the  
33 format and see if we can make it easier, more appropriate, and more attractive for  
34 everybody to use and reply to. The thing that we didn't do is specifically say, "here's a  
35 format, fill it out for the ad hocs." For the liaisons, if anybody has any comments on any  
36 of their liaisons, I would entertain that if anybody's got anything they want to say.



1 Commissioner Reckdahl: The Council had a joint session with the North Ventura CAP a  
2 couple of weeks ago. Very well attended, I was impressed. It was over at Ventura school.  
3 One of my duties on that is to represent you. If any of you have opinions, look through the  
4 materials that's on the website, take a tour of the area. If you have questions or comments,  
5 let me know and I can pass those on. We're starting to make some progress. Allison, do  
6 you have any comment?

7 Council Member Cormack: When we were discussing the urban forest plan earlier, that  
8 was certainly one of the things that I said. I'd like to see at least one of the plans that comes  
9 forward be a real challenge to us. One of the things would be adding to the canopy.  
10 Certainly, one of the things would be naturalizing the creek. I'm hopeful that we'll see one  
11 that has a great deal of green in a variety of areas so we can get a real sense for what our  
12 options are. Yes, it was very well attended. I always enjoy being in different  
13 neighborhoods of the City. Thank you for doing double duty on that service.

14 Commissioner Reckdahl: Council Member Cormack made a very good suggestion at the  
15 meeting. She wanted multiple options, but she also wanted some of the options to really  
16 stretch themselves. It's really easy to put out three vanilla options, and really push the  
17 options and see can you find something that you're uncomfortable with. Maybe it'll bring  
18 up some ideas that are good. That was good progress.

19 Chair McDougall: Any other liaison comments or any other questions on the topics?

20 Vice Chair Greenfield: I have a couple of liaison updates. We'll need to figure out how to  
21 get these circulated along with the ad hoc updates. Regarding community gardens, the new  
22 garden agreement has been forwarded to the Palo Alto Christian Reform Church for  
23 signing, which is exciting news. I'm hopeful that it'll be squared away by the end of the  
24 month; that's what I'm hearing. The current community garden rules within the Park Rules  
25 and Regulations are being replaced to only include rules, which apply to the general public.  
26 A new community gardens guidelines document is being created to address specific rules  
27 associated with community gardens license agreements. On turf management, I met with  
28 Daren and Lam for an update and review of the new El Camino Park soccer field fencing  
29 along El Camino, which is great to extend the fencing in the spot where balls go out onto  
30 El Camino. We also talked about the Cubberley turf replacement and bathroom plan status.  
31 It looks like that could be taking longer that anticipated, more than a month. We need to  
32 talk more about that. We also talked about summer field maintenance plans, future turf  
33 studies, and communication to community stakeholders.

34 Chair McDougall: It appears that Friends of the Palo Alto Parks may have secured the  
35 funds to help with the signage plan for the Baylands. I think that's actually been done,  
36 which would be very nice.

1 Commissioner Moss: I was reading about the Foothills ad hoc. You talked about  
2 increasing access to Foothills Park. Is this for people outside of Palo Alto? I was  
3 wondering if we were going to have Los Altos Day or Stanford Day or something like that,  
4 where we would have limited access for a limited time. What things came up?

5 Chair McDougall: There was a brief discussion at the ad hoc. This was not agendized  
6 here. Until we put together a real discussion that we can bring forward, we shouldn't go  
7 further with that conversation right here. Kristen, do you have anything you'd like to add  
8 or conclude with?

9 Ms. O'Kane: Not to the ad hoc updates. We can add a second tab with liaison updates.  
10 that's not a problem.

11 Chair McDougall: What we were trying to do is make the input from the ad hocs basically  
12 mandatory. Even if there was no meeting, the thing should say no meeting, so that we  
13 actually know. For the liaisons, what we're going to do is say if something useful happened,  
14 something meaningful happened, then submit it. We're trying to make that less mandatory.

15 Vice Chair Greenfield: Status update with an ad hoc doesn't necessarily have to be a  
16 meeting. There can be communications and actions.

17 Chair McDougall: A meeting or something else meaningful.

18 **VI. TENTATIVE AGENDA FOR APRIL 23, 2019 MEETING**

19 Chair McDougall: Tentative agenda for April.

20 Ms. O'Kane: For April, I have pickleball. We're working with the Planning Department  
21 making sure we have all the permits that we might need or at least are aware of all the  
22 permits we need. We're hoping to bring that back in April. Peter Jensen would like to  
23 come and discuss the plans for Boulware Park. In May, Daren is planning on bringing a  
24 draft Baylands Conservation Plan to the Commission.

25 Commissioner McCauley: Kristen, as it concerns pickleball, it is a proposed action for the  
26 Commission next month?

27 Ms. O'Kane: That is the plan, to have an action for the Commission at that time.

28 Commissioner McCauley: It's a Park Improvement Ordinance?

29 Ms. O'Kane: That's correct.

30 Commissioner Moss: Can we add Magical Bridge to one of the next couple meetings?

1 Chair McDougall: I'll get back to you, David.

2 Ms. O'Kane: We can talk about that.

3 Vice Chair Greenfield: What are you interested in discussing regarding Magical Bridge?  
4 I'm curious.

5 Commissioner Moss: The extension of additional park features in all of our parks, Magical  
6 Bridge features.

7 Chair McDougall: Do we have a liaison with the Magical Bridge? Let's talk about that.  
8 Maybe we need to see if we can create a liaison, and first have the liaison talk. We'll talk  
9 about that.

10 Ms. O'Kane: If we're talking about plans for City parks as we update those, that might be  
11 better for Public Works to address.

12 Commissioner McCauley: I think Peter Jensen has addressed that before. I'm sure he can  
13 address it again when he's next with us.

14 Vice Chair Greenfield: I wanted to suggest for next month's agenda that we spend some  
15 time talking about preparing for our joint session with Council.

16 Ms. O'Kane: That's a great idea.

17 **VII. COMMENTS AND ANNOUNCEMENTS**

18 Chair McDougall: Any other comments, questions, suggestions? Council Member  
19 Cormack, do you have anything to add?

20 **VIII. ADJOURNMENT**

21 Meeting adjourned on motion by Commissioner Reckdahl and second by Commissioner  
22 Moss at 9:40 p.m.