



SUSTAINABILITY & CLIMATE ACTION PLAN

December 8, 2020

The Importance of the Natural Environment in Meeting our Sustainability Goals

49 attendees, 61 registered

Questions and Answers

1. What is the goal for underserved neighborhoods in providing tree canopy?
 - a. South Palo Alto has less tree canopy than north Palo Alto. We established a goal for South Palo Alto through the Urban Forest Master Plan. We have been developing programs such as the South Palo Alto Funding Initiative with our non-profit partner Canopy to help our residents plant more trees than they would be able to otherwise. Funding for the program comes from development in-lieu fees. The initiative is responsible for planting more than 100 trees per year on private property.
2. Will the tree protection ordinance be revised to allow a right of appeal by neighbors?
 - a. Staff prepared and presented a draft revision to the Planning and Transportation Commission. That version does not include a revision on appeal rights, but it could potentially be included. City Council makes the final determination on all ordinances, which is something to keep an eye on as we move forward with the tree protection ordinance. If you are interested in providing further input on the tree ordinance, please contact Walter Passmore, Urban Forester and Acting Assistant Director, Public Works Public Services Division, at Walter.Passmore@CityofPaloAlto.org.
3. Can the City have a goal for number of native oaks - at least one per acre to support birds?
 - a. We do not currently have a goal for one native oak per acre, but that is certainly something to consider. Currently, we have percentage goals for native trees for street trees, parks trees, and open space.
4. Can the City plant only native plants in parks?
 - a. One of the things we focus on is the removal of non-native plants. When we do replacement planning, we look at the appropriate plant palette for that specific location. When appropriate, we do make efforts to replace non-native plants with

native plants. The City has planted over 10,000 native plants in our parks and will continue to prioritize native plants when looking at the plant palette for specific locations.

5. Can you allow trees that require more water in areas of high ground water level and in bioretention areas?
 - a. Yes, we are already doing that.

6. In regard to ensuring no net tree canopy loss for all projects: how is the time lag between loss of canopy due to tree removal and replacement of canopy by newly planted trees addressed? Is that time lag accounted for in carbon sequestration calculations?
 - a. We do have a time lag between the removal of a large tree and replacement of that same canopy by smaller trees. We have a ratio that is at least two for one and in some cases may exceed ten for one replacement, depending on how large the tree is. The objective is to replace that amount of canopy within 10 years. What we've found is that those development requirements have actually contributed towards a net gain of tree canopy in the City of Palo Alto over the last 25 years, whereas almost every other city in the United States has seen losses of tree canopy. Palo Alto is trending in the right direction.

7. Will the expansion of the Water Efficient Landscape Ordinance (WELo) address the water needs of trees during drought? During the last droughts, the aggressive and indiscriminate water conservation policies and campaigns have caused great harm to the urban forest.
 - a. Currently, the WELo is probably not as sensitive as it should be to addressing drought resilience concerns, and that is potentially an area that we could improve upon in the WELo. We are looking at the possibility of having Palo Alto-specific requirements that go above and beyond what the State of California requires.

8. Could "Above and beyond" State WELo requirements mean less stringent water conservation measures? Or do we have to comply with the state's?
 - a. We do have to comply with the water calculation measures that the state puts into WELo. Where we can go above and beyond is by putting in biodiversity measures and requiring a certain percentage of native planting. We can add additional requirements, but the water calculations are foundational to the WELo.

9. What percentage of all parks and city facilities are pesticide free?
 - a. A pesticide-free park is one that is maintained without the use of registered pesticides. In the City of Palo Alto, we have 34 parks in total. A little less than 1/3 of City parks - 11 parks total - are currently designated as pesticide free. In practice, for the past two and a half years, 33 out of our 34 parks have been pesticide free. We have had to apply herbicides in one of our parks due to a thistle that was propagating in our athletic fields, where manual removal was not viable. But in practice, we are not applying pesticides in our parks unless absolutely needed.

10. Has the city determined a cost difference in maintaining a park that uses pesticides and one that doesn't?
 - a. We've been focusing on alternative methods of controlling weeds and have not done a cost analysis. There are many strategies the city employs to reduce the need for pesticides, such as the way parks are designed and maintained.

11. I would like to see a Pesticide-Free Palo Alto ordinance to ban the sale and use of pesticides and herbicides in landscapes by residents, businesses, schools, etc. We've shown it can be done successfully at the City government level, so let's make it the law for everyone. Our pollinator and insect populations are plummeting across the country and the world, and bird and other populations are affected as well, so we need to do all we can to protect our local biodiversity and be a model for other cities. Are there any plans to move in this direction or will this require a citizen's initiative? Thank you.
 - a. California state law doesn't allow municipalities to prohibit use of pesticides beyond its own operations. We've been working within and enhancing an Integrated Pest Management Plan (IPM) since 2001, and our success with an IPM in our park system is an example of what can be done. We do a lot of education and outreach and agree that overall pesticide use should be reduced. Banning the use of pesticides across the board would be rather challenging, because there are some pests where mechanical methodology doesn't work.

12. Is the city planning to build or expand parks if/when more housing is built in the city?
 - a. The Planning Department will be updating the Housing Element of the Comprehensive Plan. Various land use options will be incorporated in the update.

13. Does the City Green Stormwater Infrastructure (GSI) Plan take the role of trees in slowing runoff and reducing peak storm events? What are some of the enhancements done on the Southgate pilot?
 - a. Yes, the City GSI plan considers the role of trees. While we were developing our GSI plan, Urban Forestry was heavily involved in the process to make sure that trees were consistently considered. We're working on pilot projects to see how we can best fit trees into a GSI design. The soil mix that we're required to use for bioretention is not the best for supporting trees based on how quickly water infiltrates, so we're trying to find ways to work around that to encourage the incorporation of trees throughout our GSI plan.
 - b. For the Southgate pilot, we revitalized two different measures in the corner of Peers Park. We replaced rocks with mulch and added a compost amendment – both the compost and mulch came from our Municipal Service Center, using materials we had on hand. We also repaired the irrigation and partnered with a local nonprofit, Grassroots Ecology - who received a grant from Valley Water that partly focuses on native plants - and utilized native plants from their nursery in Foothills Park. We're hoping to roll out similar improvements throughout the neighborhood in partnership with Grassroots Ecology.

14. Can we mandate that ALL new parking, and driveways and sidewalks be made of pervious concrete to increase pervious pavement?
- a. Currently, the Planning Department has requirements for new single-family residential areas requiring a minimum percentage of the front yard to be pervious (outlined in section [18.12.040\(h\)](#) of the City's Municipal Code). The Planning Department and its Municipal Code language also encourage sites to maximize onsite stormwater management through landscaping and pervious pavement where possible for all other project types. Pervious pavement, for the most part, is still new and we're trying to figure out best maintenance practices for it. We're not quite ready to make this a city-wide mandate, but we're pushing outreach for our stormwater rebate program, which includes rebates for pervious pavement to offset that cost. For City projects, we're trying to make this more common so that we can learn what the best maintenance practices are. We have pervious pavement at a few pump stations and Mitchell Park Library and Community Center and are working towards making this more understood and more common throughout the City. Over the next year or two, we would like to determine best practices for installing pervious pavement in areas with high groundwater. A lot of the eastern part of Palo Alto has very high groundwater, and we don't want to mandate something that later on will be difficult to maintain for private landowners. We want to make sure we understand how to maintain these installations long-term before we explore whether a mandate is feasible.
15. How do you measure the effectiveness of Green Storm Infrastructure - Such as how much area required to take care of impervious area?
- a. One way is to measure water quality entering and exiting the GSI measure. Another way is to measure flows to the storm drain system as well as using equipment to measure infiltration. In addition, there are existing regulatory requirements that mandate that the size of a green stormwater infrastructure measure be 4% of the size of the area that it will treat.
16. Is there any issue of lawn water running into DI's?
- a. Yes, lawn water has chlorine, and in some cases, may also have fertilizer and other chemicals. If we don't capture that runoff and remove the pollutants, we can greatly impact our creeks and the Bay. And we hope to start monitoring some of our largest measures. It's hard to retrofit GSI measures, so we'd be doing it with newly constructed ones in the future
17. Has the city considered "green corridors" to improve biodiversity that link parks and open spaces (canopy, native plants, GSI features, etc.)?
- a. As discussed in the webinar, there are many City-wide plans that link to the Sustainability and Climate Action Plan. There are aspects of the City's Comprehensive Plan about this concept of green ribbons that link our open spaces together. There are programs in the Urban Forest Master Plan, and goals and Key Actions in the Parks Master Plan, and they all capture a similar concept of trying to

link together green spaces in a meaningful way so we that have habitat corridors, riparian corridors, and continuity. One way to ensure that we have strategic habitat sites throughout the city is by linking our hubs with these green corridors. City Departments work together to meet our goals to link our parks and trails. The challenge is either the land acquisition or commitment from private property owners to be a part of a larger activity.

18. Has the City considered implementing Bird-Safe Design and Dark Sky Techniques into the Sustainability and Climate Action Plan (S/CAP) to protect birds and other wildlife while reducing light pollution?
 - a. We have not, but that's a good idea for a potential Key Action.

19. How is the city addressing plastic turf?
 - a. From a development review standpoint, we are updating the Tree and Landscape Technical Manual, and we will be discussing requirements for natural versus artificial turf in landscape installations for new development. The City does have some artificial turf fields – we've been a leader in this category as well. Currently, our specifications for our fields are more strenuous in regard to environmental materials that are used for turf – not just the material for the turf blades but also the infill products. We've gone away from crumb rubber and are using a material that complies with both US and European standards and is more environmentally friendly than other alternatives on the market. In addition, we also have requirements for some of the material that is off hauled to be recycled or reconditioned for re-use.

20. What about artificial turf in private gardens and highly trafficked commercial areas?
 - a. From a development review standpoint, we do not prohibit artificial turf, but where we have an opportunity to give discretionary comments, we generally encourage people to plant native and drought tolerant plants which happen to have a vastly better benefit for our environment than artificial turf. Despite the water savings of artificial turf, natural plants can be very drought tolerant and not require a lot of additional water beyond normal rainfall.

21. Where/how are plastic turf fields recycled? To the best of my knowledge, it is sent overseas and ends up in trash?
 - a. Most artificial grass is made of multiple plastic materials, including polypropylene, polyethylene, latex and polyurethane, and infill material including sand. The combined multiple types of plastic and infill material are difficult to separate from each other making it very difficult to recycle. There have been several advances in technology that simplify the process of recycling artificial turf, but the availability of this equipment and technology is very limited. Unless a specialized artificial turf recycler is contracted to remove and recycle your turf, the material is essentially non-recyclable and therefore a product that would need to be landfilled. Repurposing artificial turf at home once it's at the end of its 10-year life span is also possible and highly encouraged. Some of the most common options include:

Covering for dog runs and dog parks, ground cover for driving ranges, floor covering in batting cages, play area ground covers, and ground coverings for animal shelters.

22. How can we increase our practices to encourage biodiversity within the City? Can you stop hedging shrubs where not blocking passage? Square plants are not natural. Can you plant natives for all life stages of insects, and allow leaves to accumulate to support larvae and pupae?
 - a. A starting point is that we have changed some of our practices. For example, for trees, we used to have a block site list, like a lot of other cities, where we had one tree per block or maybe even one tree that dominated an entire street, and it was a single species. We don't use that practice anymore and instead use an attribute-based selection system. We give preference to replanting native, drought tolerant species, species that obtain the largest mature size and produce the most benefits for that site. Instead of thinking that we need nothing but Southern Magnolias on an entire street, for example, we've changed to try to reach some of the goals we've discussed in this webinar.
23. Is the city developing a biodiversity index? I'd love to know more about it.
 - a. The City is looking into biodiversity metrics as part of the Sustainability and Climate Action Plan Update.
24. Is the city planning to create an environmental commission?
 - a. No, at this time, there is no plan to create an environmental commission.
25. The natural environment is important, but in terms of meeting our 80 X 30 goal, reduction of fossil fuels in buildings and transportation is paramount. How will the city/staff/council prioritize the actions to be taken?
 - a. This year we've been working with AECOM on several components of our Sustainability and Climate Action Plan (S/CAP). They are currently working on our 2019 greenhouse gas (GHG) emissions inventory, a business as usual forecast – if we were only going to implement what Council has already approved and if we were to meet existing California environmental regulations, how much would we reduce our GHG emissions by 2030, and the missing piece of the puzzle – the impact analysis. AECOM will take the 2019 GHG inventory, the business as usual forecast, and the draft potential Key Actions that were updated with community feedback, and look at the potential GHG reduction, costs, and co-benefits of those potential Key Actions. In terms of prioritizing the Key Actions, we need to pick the Key Actions that not only will get us to our 80 x 30 goal, but also have the most co-benefits.
26. Do we still use our famous “engineered soil” for planting street trees (which, if I remember correctly, makes them more tolerant of the extensive surrounding pavement, or maybe it helps them not break sidewalks with their roots)?
 - a. At one time we were using that fairly extensively, however we no longer use it except in rare circumstances. We are trying to more commonly employ soil cells,

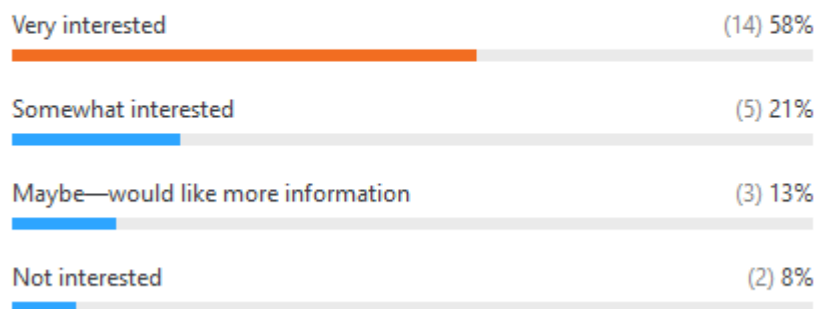
which allow uncompacted natural soil. The comparison is that the engineered soil is about 80 – 85% rock, whereas soil cells are 80 – 90% viable soil. There's a lot more soil for the trees and plants to utilize, to get the water and nutrients that they need, they don't dry out as quickly, and they're more resilient to drought.

27. The big goals of this effort concerned ecosystem recovery... given that this is what we hope to achieve, there should not be any plantings but natives, right?
- a. No. We encourage natives, but if you look at our historic ecology, the Bay Area was primarily grassland and Oak savannah. We now have an ecosystem that is vastly different than what it was 200 years ago, so we can't go back. Since we have so many introduced plants, natives are not always compatible. To have the population of natives equal to the population of all plants that we have, would be too many for them to be healthy.
28. Are CA native plants subject to Palo Alto's weed abatement code? I'm interested in adding milkweed to my CA native garden for the monarch butterflies.
- a. Milkweed is a native plant. It shouldn't be negatively impacted by the weed abatement program.
29. What will be the effect of low-lying areas from sea level rise on flora?
- a. We're still looking into the potential impacts of sea level rise and groundwater levels increasing through the Vulnerability Assessment that is currently underway. As we observe trends, we're probably going to be looking at scientific adjustments for natural ranges. For example, if climates in our region become warmer, natural ranges for plants that thrive in warmer climates, may outcompete native plants in Palo Alto to establish themselves.
30. There was a great article in the New York Times on how trees communicate with each. Do you take this account when planting trees?
- a. No. It was an enjoyable article to read, but the science is a little bit young still.
31. Could we plant trees in wetlands to help with carbon offset projects? I'm thinking of mangroves, but I realize this is the bay and not a tropical region. Or are they too invasive for the bay?
- a. All of the creeks have native riparian areas that extend into the bay marsh. There has been, and will continue to be, some tree planting associated with projects such as the Adobe Creek Bridge, pump station projects, and levee construction. These "permanent" installations could be submitted as a project to generate revenue from carbon offsets. Note, the revenue projections at this time are nominal for carbon offset projects that cover small areas of land. Trees (on average) generate 1-3 tons of carbon each, every 25 years. Carbon markets pay about \$10 per ton at present, so a project that plants 100 trees with a permanence requirement of 100 years may generate \$8,000. Costs for reporting and third-party verification (of approximately \$20,000) exceed the current revenue projection for such a small project. Conversely,

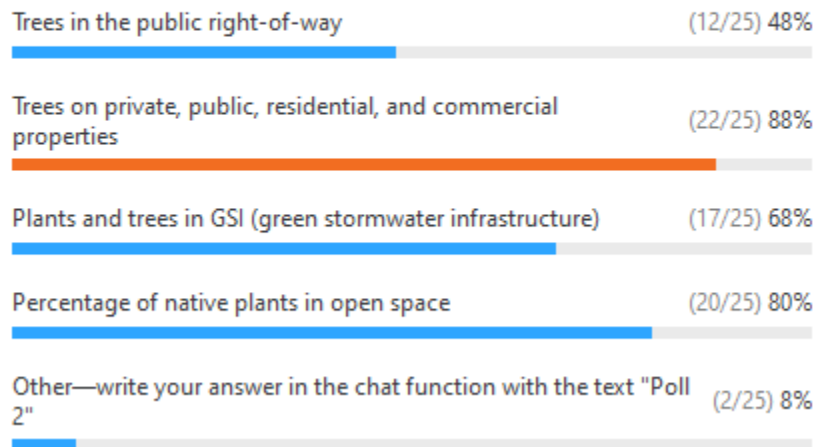
revenue exceeds costs for large projects covering hundreds or thousands of acres, therefore aggregating projects is the most sensible approach. The foundation is being prepared for an aggregated project by creating policy mechanisms including Municipal Code, goals in plans such as the S/CAP, and strategic partnerships to link actions on public and private property.

Poll results

1. Would you be interested in information on how to incorporate pollinator plants on your own property?



1. Which aspects of biodiversity should the City measure? Select top three (3) choices. (Multiple choice)

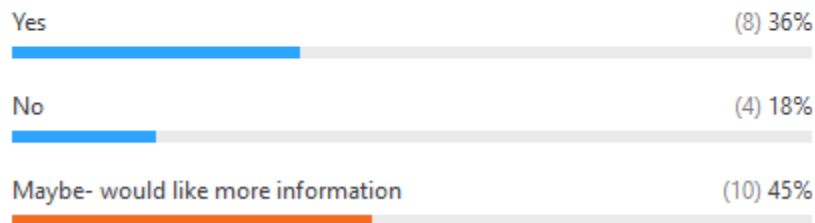


Poll 2 – Other:

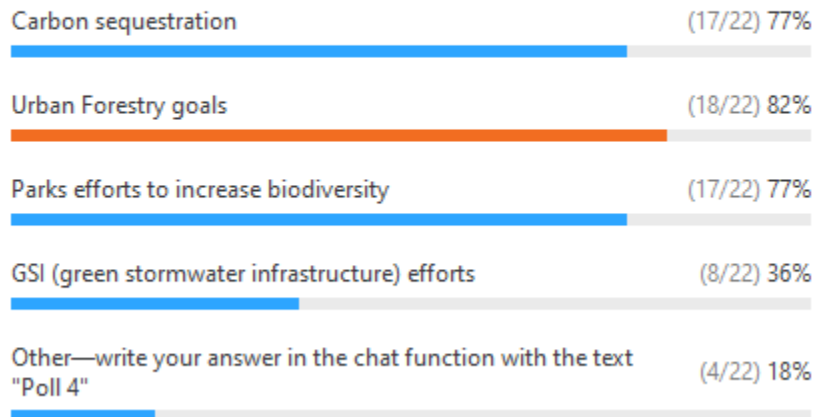
- Bird Safe Design
- Light out programs
- dark sky and minimization of light pollution
- Locally native oaks in every park, and at 150-ft distance on city streets
- biodiversity of wildlife

- biodiversity of animals and birds and insects too like bird counts, etc.
- Because there are actually relatively few native trees in this region which are appropriate in the urban
- prohibit plastic turf
- allow trees that require more water in areas of high ground level
- environment, we need to understand the contributions of non-native trees to biodiversity.

1. Would you be interested in helping to steward City-owned GSI measures? For example, caring for plants, maintaining cleanliness, etc.



1. Would you like to attend another webinar about any of the following? Select all that apply. (Multiple choice)



Poll 4 Other:

- Is the city developing a biodiversity index? I'd love to know more about it.
- I want to see how this work actually increases biodiversity beyond 5 small sites. A biodiversity workshop for park. Also - light pollution, bird safe design
- What the city can do not just to reduce our carbon emissions but to engage with project Drawdown to reduce the carbon already up in the atmosphere.
- Webinar about best practices for eliminating pesticides/herbicides on their property (based on city learnings in the parks).