



CITY OF PALO ALTO CITY COUNCIL TRANSCRIPT

Special Meeting
January 25, 2016

The City Council of the City of Palo Alto met on this date in the Council Chambers at 5:04 P.M.

Present: Berman, Burt, DuBois, Filseth, Holman, Kniss, Scharff, Schmid arrived at 5:06 P.M., Wolbach arrived at 5:05 P.M.

Absent:

Special Orders of the Day

1. Midpeninsula Regional Open Space District Measure AA Update.

Mayor Burt: Our first item tonight is a Special Orders of the Day, the Midpeninsula Regional Open Space District Measure AA update. Do we have our representatives here? Welcome.

Nonette Hanco, Midpeninsula Regional Open Space District Board Member: Thank you. It's been a while. I'm Nonette Hanco, and I've been the District's representative for Palo Alto on the Open Space District since its formation in 1972. I want you to know to begin with that this Council, different faces then, we're all very much in support of the District being formed. We took it to the voters, and it passed overwhelmingly. We started with the District only in Santa Clara County because San Mateo County had some problems. The Supervisors who were supposed to permit us to go on the ballot had too many interests in building in the hills in San Mateo, and they refused to put us on the ballot. When the Santa Clara Board heard about that, that made them so angry they said, "We're going to put you on in Santa Clara County." We knew, because Stan Norton who was your lawyer for the City in the early years had found the law that pertained to annexations, that we could be formed as an Open Space District just in the Santa Clara area that we had chosen and that any petition that came for annexation would come and have to be approved only by us and not by the Board of Supervisors. In four years, we got the District that we wanted which, I guess—it'll be pictured here somewhere. Anyway, it extended from San Carlos on the north to Los Gatos on the south which is essentially all the hillsides in both Santa Clara and San Mateo Counties. Thank you very much for your support over these years. We've done very well with the ten cents

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per 100 assessed value that is in the law that made it interesting for us to acquire as much land as we did. What's important for you to know is when I first addressed you or the people who used to be your Council, I told them that we had in mind to acquire all the open space lands in the hills, and most people didn't know belonged to Palo Alto. If you don't know yourself about it, you go up Page Mill Road all the way to Skyline Boulevard. If you look to the left, there's a large canyon there called Stevens Canyon where the creek runs all the way down. You can see a big tower that's on Mount. Umunhum in the distance. Stevens Creek Boulevard takes a turn and it goes out to the bay between Sunnyvale and Mountain View, California. We bought all that land, so we did what we said we were going to, just so you know. Now we're back because we had the luck of having a great bond measure pass for us. We have sufficient funds now to make it possible for more trails to be built, for more trails that lead from the bay to the ocean. There will be some great things happen in the next few years. I'm going to call on another person who represents Palo Alto, and you know her. She's Yoriko Kishimoto, and she's been a very outstanding Board Member since she's joined us. We elected her as the President of our Board this year. Thank you.

Yoriko Kishimoto, Midpeninsula Regional Open Space District Board President: Good evening. My name is Yoriko Kishimoto, and I am so happy to serve with Nonette Hanko on the Midpeninsula (Midpen.) Open Space Board and to serve as President this year. As you know, a significant reason why this is such an extraordinary time and place is our collective commitment to regional open space. This would never have happened without Nonette Hanko. It really is extraordinary. I wonder if you would join me in just thanking her. She's transformed the area.

Mayor Burt: If I got my math right, it is 46 years of service on the District.

Ms. Kishimoto: Yes. And what she has accomplished with it. This is Shelly Lewis, our Manager of Public Affairs. She's a wonderful member. I could have called this talk "Midpen. is on the Move," because with the passing of Measure AA—I think you have before you on your dais an Annual Report and also the Measure AA projects. With the passing of AA, Midpen. itself has been transformed. If I had a pointer, I was going to point out the locations of many of the preserves we're talking about, but I can't point them out to you. You probably can tell—I mean, Purisima Creek is towards the top. There's a lot of action on the coast; La Honda Creek Preserve in the middle going towards the coast will also see a lot of action. To the southwest is Mount. Umunhum Preserve where you'll see a big peak open later in the year. Kind of towards the north, towards the bay, is of course East Palo Alto and Cooley Landing. A lot of action taking place with Measure AA. Palo Alto

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is lucky to be right smack in the middle of the District and have many, many excellent preserves. Every day I give my blessings that I can walk out the door and be out in open space in a few minutes. There's very few places in the world you can do that. As highlights, as I said when Measure AA—thanks to the voters—passed in June 2014, it was a major transformation, and our organization has to transform to deliver the projects that we promised. We did a Financial Operational Sustainability Model (FOSM), they call it FOSM, to really guide our changes over the next few years so that we can gear up and so you would be very proud of the very systematic and long-term view that we're taking for these changes. There's internal changes, but you'll be seeing the manifestation of it outside. The number one request of the voters was more public access. Here's a few of them. One is La Honda Creek that I pointed out towards the coast. The red barn is one of the most conspicuous symbols of it. Probably in the next couple of years we'll be opening up the first part of it which is Sears Ranch Road, and then the red barn area following after that. The Bay Trail you all know very well about. Stanford's \$400,000 will be contributing to it. San Mateo County Supervisors put in \$1 million, and we will be as well. A critical half mile that will be opening up is a significant part of it. Cooley Landing in East Palo Alto, one thing going on there is the education center. I don't know if you've been there, but there's a beautiful new building out there. It's not open yet; it will be open April 9th, 2016. Please put that on your calendar and come out and join us as well. Purisima to the Sea, that's going to be another spectacular ridge to the sea trail. We're working to make a final acquisition that will make it possible. In addition to acquisition and opening the lands, the third leg of our mission is restoring the environment. These include restoring the oak woodlands in Pulgas Ridge, watershed protection which is El Corte de Madera where the old logging roads caused a lot of erosion and sedimentation. We're reforming those. Grazing, we actually own 10,000 acres of grazing land on the coast, so we're making grazing compatible with restoration and protection of the lands there and keeping alive agriculture on the coast. The wildlife crossings, one fact that I learned was that over the last few years 13 mountain lions have been killed on Highway 17, and many other animals. We're trying to create some crossings there, so they can survive that. Two big ones outside the Palo Alto area, Mount. Umunhum. If all goes well—I mean, the Board did pass a plan which includes a beautiful trail to the top, an overlook, and many interpretive features at the top. If all goes well, we will be opening it later this year. We'll let you know when it's set. Bear Creek Redwoods, I don't know if anyone has been there. It's another spectacular redwood preserve that will quickly become a favorite. Currently there's stables there. The former Alma College is located there and, of course, the redwoods. I know it's going to be a favorite as soon as it opens. Community partnerships, this is one area that we've actually been spending a little bit more time on than in the past,

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because we know that our long-term stewardship of the land is based on the future generations having the same values. There's a lot of emphasis on diversity, working with Latino Outdoors, so diversity, youth, and health. There's a lot of important partners that we work with. I just wanted to point out that we have a great website of course. There's a lot of great docent walks if you wanted to join us. Midpen. is on the move, and I hope you all join us out in the preserve as well. Thank you. If there's any questions, I'm happy to take them.

Mayor Burt: Council Member Kniss.

Council Member Kniss: Hi, Yoriko.

Ms. Kishimoto: Hello.

Council Member Kniss: Near and dear to my heart is the Bay Trail. Are you saying there is enough money now to do the connection or did I not hear that correctly?

Ms. Kishimoto: I believe there is enough money. I guess we're—yes, there's \$1 million from the San Mateo County side, our \$400,000 and I believe like \$700,000 from Measure AA. There should be enough money. I guess we're waiting for a lot of permitting from CPUC (California Public Utilities Commission) and many other steps.

Council Member Kniss: At one point, Facebook had agreed to some amount. I don't know if that's still the case or not.

Ms. Kishimoto: I don't quite remember.

Council Member Kniss: Maybe you could find out and let us know, if you would. We tried to fund that in full at the County, but I don't know where it ended up.

Ms. Kishimoto: I will be happy to get back to you.

Council Member Kniss: Thanks.

Mayor Burt: Council Member Holman.

Council Member Holman: Yes, thank you. Yoriko, if you could go back to the partnership slide please. I don't remember the discussions that took place in this, if there was a discussion, about how one becomes a partner. I noticed that glaringly absent here are any of the cities or the counties. What's the criteria for becoming a partner? For instance, we're doing our Parks Master Plan which includes our open space areas. There's interaction

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between those areas and your open space. How does one become a partner and might that not serve to enhance cities' and counties' awareness of the importance of interaction?

Ms. Kishimoto: Good question. I understand you're going to be talking more about the parks later this evening, which is great. In a way, I think we look upon every city as our partner.

Ms. Hanko: (Inaudible) work on it. Sounds like a good idea.

Ms. Kishimoto: That's right. Actually when this map was up, I was going to mention there are some things that we can work on long term. There's the connection between like Foothill Park to the Hawthorn Preserve in Portola Valley. Alpine Road's reopening is happening. I think we're already your partners. I hope so. Actually Nonette and I helped open the Los Trancos to Foothill Park opening as well. I think that's why Nonette and I are here, to present ourselves as your partners. Nonette and I and Shelly would be delighted, and our staff, to work with your Staff on ...

Ms. Hanko: (Inaudible) I'll bring it up at the Board meeting.

Council Member Holman: Great, thank you.

Mayor Burt: Council Member Wolbach.

Council Member Wolbach: Thank you to everybody from the District. Nice to see you, Shelly, and also thank you, of course, Yoriko and Nonette for your years of service to Palo Alto and to the region. Our region would look so different without the work that you guys have done and continue to do. Whenever I have friends visiting from out of state or out of the country, the first place I take them hiking is Foothills Park, of course. The second place I take them hiking is Pescadero Creek. I'm really excited about the expansion of that and the connection to the sea. I just wanted to say thank you for that. I'm sorry I arrived a little bit late. I was curious, was there anything about access for people walking their dogs? One thing that we always hear, of course, here in Palo Alto and for the region is where people can go hiking with their dogs either on or off-leash. I was wondering if you guys had any updates on that. I'm not a dog owner myself, but I love pooches.

Ms. Kishimoto: It's a good question. I happen to be the one on the Board who is always asking about dogs as well. There's one project which is opening up dog access, one dog trail access at El Sereno which is a little bit down south. Windy Hill, of course, is already open to dogs, and we have plans to improve some of the trails there, so improving current access. The new preserves which will be open, I think La Honda Preserve, there's a

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whole Master Plan and it's a huge preserve. It's like 5,000 acres. Not every trail will be open, but there will be some trails open to dogs in La Honda and I believe Umunhum as well. No, not Mount. Umunhum. That's right. That was the very first meeting I went to actually. Not Mount. Umunhum, but La Honda, I think, will have at least some trails open to dogs.

Council Member Wolbach: Thanks for the update on that and the whole update. Appreciate it.

Mayor Burt: Yoriko, one question I have. You mentioned the Purisima to the Sea. Can you update us on any plans for bay to the sea trail?

Ms. Kishimoto: bay to the sea trail?

Mayor Burt: There was discussion about it a long while ago. We certainly have potential routes leading right now from Arastradero almost continuously through ...

Ms. Kishimoto: You mean all the way from the Baylands, yes. I think we had mapped out—I mean, that is probably something that we would need the partnerships with the cities to do. I know with the City of Palo Alto we had looked at some connections from the bay to like the Stanford Hills area and the new Stanford trails. I know more about the ridge to the sea ones, but there's the Big Basin one which actually is not our preserve. The Purisima to the sea, it is one that we'd have to work with the cities on to really deliver that bay to sea trail for you.

Mayor Burt: Good. I think we'd look forward to that cooperation.

Ms. Kishimoto: That would be great.

Mayor Burt: Thank you very much for your presentation.

Ms. Kishimoto: Thank you so much.

Mayor Burt: That concludes Item Number 1.

Agenda Changes, Additions and Deletions

[The Council heard this Item at the beginning of Item Number 16.]

Staff requests Agenda Item Number 19 - "FY 2015 Performance Report, the National Citizen Survey™" - be continued to January 30, 2016.

City Manager Comments

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Mayor Burt: We now go onto City Manager Comments before Oral Communications. There might be people here interested in that.

James Keene, City Manager: Thank you, Mr. Mayor, Council Members. Just a few items to report. Number one obviously, we had a wonderful, engaging, and 300-person turnout at yesterday's Sustainability/Climate Action Plan Summit. We're going to have a Study Session later on that, so I won't say anything more. I did want to get that out for folks who may not stick around for that portion of the Council meeting tonight. Continuing good news on the street maintenance front. Our Public Works Staff completed their Citywide Street Survey for 2015 in December. Based on the results of that Survey, our Citywide average Pavement Condition Index, or PCI Score, is now 81. That score is a nine point increase since 2009 and certainly reflects our continued progress toward meeting our City Council established goal of a Citywide average PCI of 85 with no street below 60 by the end of 2019. We're certainly on target with that. As many folks know, some of the things that are being talked about in a potential Valley Transportation Authority (VTA) County Sales Tax increase is how to get the streets in the County up to that level. We're doing it already on our own and ahead of schedule without the need for that special tax. On a related note, just tonight on the Consent Agenda is the street resurfacing contract that will resurface an additional 4.7 lane miles of Alma Street and Middlefield Road with rubberized asphalt concrete. Again, this is a project as a result of increased funding by the City Council specifically for the completion of these sections by the end of Fiscal Year 2017. This is the second of three phases needed in order to complete that work. More information on our maintenance programs can always be found at the cityofpaloalto.org website under streets. Next up, just in a kind of arcane area, I guess, of street signs. About a year ago, the City's Transportation and Public Works Departments working together to ensure Palo Alto's compliance with the recent change in what is called the manual or uniform traffic control devices or in this case stop signs. Most of the stop signs in Palo Alto had the small supplemental plaques below them such as "two-way," "three-way," or "four-way." Apparently new State regulation language requires plaques to say "all-way" if intersection approaches are controlled by stop signs. Otherwise, "cross-traffic does not stop" is used in combination with a stop sign when appropriate. Over the past year, Public Works has installed over 300 "cross-traffic does not stop" signs and over 500 "all-way" signs, and all of the obsolete signs have now been replaced. A big thank you to our crews from Public Works and Transportation who got this project completed. We don't have the problem I had when I was in Berkeley of people slapping their own additions to stop signs like "stop war," "stop eating meat," things like that. Anyway. Lastly, the Council Retreat—I think it was a competition actually. The Council Retreat reminder, this weekend, as if you weren't busy enough

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this past weekend with the Summit. You will hold your annual Council Retreat, Saturday, January 30th, starting at 9:00 A.M. That's the formal start for the actual meeting. We'll be gathering beginning at 8:30 A.M. at Mitchell Park Community Center. You'll be talking about your Priorities for the year. The majority of feedback we've gotten from Council and community does seem to indicate that a continuation of the current Priorities you established this past year would be in keeping with your policy and would be carried forward. The Completion of the Comprehensive Plan, the Built Environment: Multimodal Transportation, Parking and Livability, Infrastructure, and lastly Healthy City/Healthy Community. I would imagine that the Council, as is often the case, will have emergent initiatives or special areas of focus you want us to pay attention. Those are often given priority within one of the actual existing Priorities that you have. That's it. That will run 'til—right now scheduled to 2:00 P.M. You have run as much as 3:00 P.M. in the past. That's all I have to report. Thanks.

Mayor Burt: Thank you.

Oral Communications

Mayor Burt: At this time, we proceed to Oral Communications. I have six speaker cards, but the first one is five speakers asking to allow Rachel Kellerman to speak on behalf of their group. We would be glad to do that. Welcome.

Rachel Kellerman speaking for Jon Sweig, Marie Jo Fremont, Jennifer Landersmann, Mark Landersmann. Thank you. Welcome. Mayor Burt, Vice Mayor Scharff, Honorable City Council Members, hardworking City Staff, my neighbors, thank you for this forum. I'm here today representing my neighbors—I'm proud to do it—to urge you to adopt funding solutions for aircraft noise and pollution in our community as a primary City Priority in 2016. You know the facts. The FAA (Federal Aviation Administration) concentrated damaging airplane superhighways over Palo Alto. You have seen and heard the planes over our homes, our parks, our schools, our places of worship, and our places of work. You are hearing our community. We are losing sleep. We are having an unprecedented disruption to our quality of life. Because of the rise in complaints from citizens, the FAA is doing something never done before, which is to issue an action plan to address our concern. This is a golden opportunity happening right now that our City cannot afford to miss. In order to fully engage with the FAA, which is heavily dominated by the airline industry, our City Council and City Staff must do what it does best. Number one, gather and interpret reliable data in order to present a credible and compelling position to the FAA, to tell the history of our situation, and to propose solutions better to distribute aviation

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noise. Number two, consult experts in the aviation field, scientific, practical, legal, so that we know all of the opportunities and options available to us to correct the problem which the SFO Roundtable has labeled the perfect storm. Three, expend the time and energy necessary to address this complex problem so that City Council and Staff can be active and equal partners with other affected communities, Representative Eshoo, SFO and the FAA. Now, I would add the SFO Roundtable, but that institution's actions have been detrimental to our community. We propose that Palo Alto become a leader in forming a new regional body that better represents communities more distant from the airport. Our City should stand for equitable dispersion of noise, not the random shifting of noise to other communities, using the best tools and talent to evaluate impact. We all benefit from our active economy, and air travel is a byproduct of commerce. As the situation exists now, communities like Palo Alto are bearing an unreasonable and unhealthy burden for all this aviation traffic. We have heard from some City Council Members that aviation noise and pollution is a Federal problem and there is not much they can do about it. This seems to us akin to passing a sticky hot potato from one elected official to the other. Representative Eshoo's office clearly stated that they absolutely need ongoing support from the cities to continue to press the FAA. Other cities are fully committed to the battle for quieter skies and cleaner air, namely Phoenix, Culver City, Santa Monica, and our City should show its citizens the same level of interest and action. We have heard from some City Council Members that aviation noise and pollution can be secondary under the Healthy Cities/Healthy Communities Priority Item. Yet, reading the fine print of that Priority as currently written, there is no logical insertion point for aviation impacts. Healthy culture is about kindness and connection. Healthy environment is urban planning, bike lanes. Healthy food and healthy work does not connect either. I work in education. When a student with special needs has specific tasks to work on, that task is called out in their individual education plan along with concrete steps and resources all parties must engage in to effect change. When that is done, we as educators are held accountable for that student's progress in all areas. Making aviation noise and pollution a primary City Priority is the right thing to do, because it will compel City leaders to craft concrete actions and marshal resources to heal our skies. It will give citizens confidence that our City is working hard on our behalf to solve a very vexing problem. The concrete steps and resources should include devoting substantial Staff time to the problem. We remain very impressed with City Senior Management Analyst Cash Alae's commitment to the problem. I should just say, Cash, that a crack Paly (Palo Alto High School) reporter elevated you to City Manager in a article. Sadly, when I fact checked it, I had to demote you, but Paly's on the case. These concrete resources should include hiring aviation consultants and law experts to professionally propose and vet potential solutions urging

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completion of their tasks especially in light of the short window we have to respond to the FAA. These concrete steps should include staying well informed, you speaking up for Palo Alto and neighboring communities. We are pleased that Council Member Filseth has taken an interest in this matter. In our view, a City Staff member and a City Council Member should attend the National Aviation Noise and Pollution Symposium sponsored by UC (University of California) Davis in February. I am a librarian, and I believe that knowledge is power. All major stakeholders in the aviation industry will be at that conference, and Palo Alto should be there too. In a *New York Times* column today, titled "Michigan's Great Stink," Paul Krugman defines a public good as "things that benefit everyone and can't be provided by the private sector." Sky Posse neighbors, we're just that; we're neighbors. Many of us work full-time. We are raising families. Some of us are retired and had hoped to live out our lives here in relative peace. What brings us all together is the fact that living many miles distant from major airports we never expected to be part of an airport runway and all the resulting noise and pollution. As private citizens, we can work with Eshoo, the FAA, SFO and other cities, but to be effective and fair to the public which relies on our governing bodies to work together, your leadership is what will make the difference. Each of you are part of the solution. Quieter skies and cleaner air are a public good. We urge you to make achieving equitable solutions within the region a primary City Priority for 2016. There are solutions that can eliminate or reduce the concentration of low and loud aircraft over Palo Alto, but we need your leadership to defend and argue these solutions. What do you think, neighbors, should they make it a Priority? Thank you.

Mayor Burt: Thank you. Our next speaker is Herb Borock, and that's our final speaker.

Herb Borock: Mayor Burt and Council Members, today the Attorney General of California issued the title and summary of the chief purpose and points of a proposed initiative measure to suspend the High Speed Rail project and to prohibit the issuance or sale of future bonds for the High Speed Rail project. I'll provide the City Clerk with copies of the title and summary, the text of the measure and the fiscal impact analysis for inclusion in the next Council Packet. Thank you.

Mayor Burt: Just to clarify for members of the public who are here, the Council is not permitted to have dialog on un-agendized items. We'll be having discussion on this at our Retreat and elsewhere, but we are not allowed to discuss it tonight. Thank you. We hope that many of you will stick around for other exciting things on the Agenda.

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James Keene, City Manager: Mr. Mayor, if I just might make a really quick comment.

Mayor Burt: It sounds like you may want to hear City Manager Keene ...

Mr. Keene: No, I'm not going to say anything, I think, that lots of the Sky Posse folks haven't already referenced. Obviously, we've been devoting a lot of concentrated Staff time to supporting this issue. We've been working very closely with Anna Eshoo's office. We actually have a new RFP (Request for Proposal) and an award related to really kind of an expanded, potential scope of work designed to really ensure that there is gathering and interpretation and substantiation of meaningful data that will be really important in being able to make the City's and our community's case as it relates to the NextGen project and that sort of thing. I would just say, as you know, much more of the detail of the process in the Priority setting process, the really big part of the work are the specific project initiatives within those Priorities. The Council's discussion about when push comes to shove what things are most important to be sure that we're working on. We will have that opportunity to do that. Thanks.

Mayor Burt: Thank you, and thank you everyone.

Minutes Approval

2. Approval of Action Minutes for the January 11, 2016 Council Meeting.

Mayor Burt: Our next Item is Approval of Minutes from the January 11, 2016 meeting.

Vice Mayor Scharff: So moved.

Council Member Berman: Second.

Mayor Burt: Motion by Vice Mayor Scharff, second by Council Member Berman.

MOTION: Vice Mayor Scharff moved, seconded by Council Member Berman to approve the Action Minutes for the January 11, 2016 Council Meeting.

Mayor Burt: Please vote on the board. That passes unanimously.

MOTION PASSED: 9-0

Consent Calendar

Mayor Burt: Our next Item is the Consent Calendar.

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Council Member Holman: I'll move approval minus Item Number 14 which Staff has recommended continuing.

Council Member Kniss: Second.

Council Member DuBois: Second.

MOTION: Council Member Holman moved, seconded by Council Member DuBois to approve Agenda Item Numbers 3-13, and 15.

Mayor Burt: The Consent Calendar has been moved for approval by Council Member Holman, seconded by Council Member DuBois, absent Item Number 14 which will be removed. Any discussion?

Vice Mayor Scharff: I think I'm recused from Item Number 10 because I own real property close to one of the garages. I'm going to recuse myself from Item 10.

Molly Stump, City Attorney: Thank you, Mayor Burt. Council Member Kniss is also recused on Item Number 10.

Council Member Kniss: Thank you. Thank you for the reminder.

Mayor Burt: Council Member Kniss and Vice Mayor Scharff are recused from Item Number 10. We're voting on this excluding Item Number 14.

Ms. Stump: If I may, Mr. Mayor?

Mayor Burt: I'm sorry.

Ms. Stump: Just for the record, those recusals are related to real property interests that are close by two of the four garages that are at issue in that lease Item. Thank you.

3. Approval and Authorization for the City Manager to Extend the Term of the Construction Inspection Services Contract With Canus Corporation (C13145442) to July 31, 2016 With no Change to the Total Amount.
4. Review and Acceptance of Annual Status Report on Development Impact Fees for Fiscal Year 2015.
5. Policy and Services Committee Recommendation to Accept the Auditor's Office Quarterly Report as of September 30, 2015.

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6. Finance Committee Recommendation to Accept Macias Gini & O'Connell's Audit of the City of Palo Alto's Financial Statements as of June 30, 2015, and Management Letter.
7. Approval of a Contract With O'Grady Paving Inc. in the Amount of \$1,988,344 for the FY 2016 Alma Street and Middlefield Road Paving Project.
8. Approval of Amendment Number Two to Contract Number C14149978 With Dyett & Bhatia Urban and Regional Planners in the Amount of \$42,000 to Complete/Provide Downtown Cap Study Policy Recommendations and Analyze Scope of Downtown Basement Conversions to Office Space.
9. Approval of Amendment Number Three to the Palo Alto-Stanford Fire Protection Agreement With the Board of Trustees of the Leland Stanford Junior University Extending the Term for one Year for a Total Fee of \$6.5 Million, and Amendment of the FY 2016 Budget to Reduce the General Fund Budget Stabilization Reserve by \$675,000 to Offset a Reduction in FY 2016 Fire Department Revenues (CONTINUED FROM DECEMBER 7 and 14, 2015).
10. Approve and Authorize the City Manager or His Designee to Execute a 25-year Lease Agreement With Annual Lease Payments of \$20,000 Between the City and Komuna Palo Alto, LLC Covering Four City-Owned Parking Structures for: (1) Construction and Operation of Solar Photovoltaic Systems, With the Potential to be a Palo Alto Clean Local Energy Accessible Now (CLEAN) Program Participant; and (2) Installation of City-Owned Electric Vehicle Chargers and Infrastructure.
11. Policy and Services Committee Recommendation Regarding 2016 City Council Priority Setting and Annual Retreat.
12. Ordinance 5376 Entitled, "Ordinance of the Council of the City of Palo Alto Amending Chapter 9.14 (Smoking and Tobacco Regulations) of the Palo Alto Municipal Code to Include E-Cigarettes, Change Signage Language, and Include Additional Enforcement Options (FIRST READING: January 11, 2016 PASSED: 9-0)."
13. Ordinance 5377 Entitled, "Ordinance of the Council of the City of Palo Alto Amending Title 5 (Health and Sanitation) and Title 18 (Zoning) of the Palo Alto Municipal Code to Require all Businesses to Subscribe to Recycling and Compost Services and Comply With Refuse Sorting Requirements (FIRST READING: January 11, 2016 PASSED: 9-0)."

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14. ~~Approval of Agreement With Empowerment Institute on Cool Block Small Pilot Program (Continued to February 1, 2016).~~
15. Review and Approval of a Draft Process Letter From the City of Palo Alto to the California High Speed Rail Authority and Caltrain.

Mayor Burt: That passes unanimously.

MOTION FOR AGENDA ITEM NUMBERS 3-9, 11-13, 15 PASSED: 9-0

MOTION FOR AGENDA ITEM NUMBER 10 PASSED: 7-2 Kniss, Scharff not participating

Study Session

16. Study Session With Stefan Heck Regarding Innovation, Energy, and Transportation Issues.

Mayor Burt: Our next Item is a Study Session. We have as our guest Stefan Heck from Stanford University. Mr. City Manager, do you ...

James Keene, City Manager: Hopefully, Stefan is here. Let's see.

Mayor Burt: We have a rare occasion of being ahead of schedule. We're going to have a celebration over that.

Mr. Keene: Yes. One thing, I might have missed it, Agenda Changes, Additions and Deletions.

Mayor Burt: Sorry that was my fault.

Mr. Keene: We did have the one change related to Item Number 19 on the Agenda. That is the FY (Fiscal Year) 2015 Performance Report, the National Citizen Survey, and the Citizen Centric Report. Given the length of the Study Sessions tonight and also the sort of relevance of leading off with that at the Retreat, we would be removing that Item from today's Agenda. It will actually be agendized as the first kind of discussion portion of the Council Retreat this Saturday, the 30th. Correct?

Mayor Burt: My understanding is that because that Item will inform the discussion on Priorities and the work plan for the year, that's an appropriate occasion to be able to do that.

Mr. Keene: That would be correct. I think it sort of lets us close the books on last year, but it also indicates a lot of the trend information within our community that will, I think, be helpful to the Retreat discussion. Thanks.

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Mayor Burt: If Mr. Heck is not here yet ...

Male: He will be there in about 15 (inaudible).

Mayor Burt: We'll take a five minute break. Thank you.

Council took a break from 5:42 P.M. to 5:52 P.M.

Mayor Burt: We're now proceeding on Item Number 16 which is a Study Session with Consulting Professor Stefan Heck from Stanford University regarding innovation, energy, and transportation issues. Welcome.

Stefan Heck, Stanford University Consulting Professor: Thank you, Mr. Mayor, City Council, fellow Palo Alto residents. Appreciate the opportunity to share with you some of my thoughts and research on transportation and sustainability more broadly. I just want to say upfront this is ongoing research. I don't claim to have the answers for Palo Alto. That's for you guys to figure out. I want to share a little bit about what is going on in sustainability and a bit of what are some of the choices that Palo Alto has. Obviously we have a long history here. Palo Alto grew up around the train. I took a picture from 1894, the original railroad station. It's a theme I'm going to come back to in terms of the choices of sustainability and how we organize our community. That time period is very important, because it was the second industrial revolution, not just the manufacturing revolution that happened years before, but in this time period a lot of the technologies that influenced our quality of life appeared. Up there I featured building controls, steel as a structural material, sewers which actually well before vaccination already reduced our death rate from disease substantially, electric light that we all take for granted, and Palo Alto as a very early adopter. The reason I highlight this is because there was an enormous benefit to the society at that time through the deployment of these, at that time, really advanced technologies. You can see that since Roman times Gross Domestic Product (GDP) per capita only doubled, but in that span from the Industrial Revolution there was a 13-fold increase in GDP per capita over just a couple generations. That's really a productivity benefit that came to all of us. We died much older; we lived twice the age. A lot of the things we take for granted now, public libraries here in Palo Alto, the fact that we can work at night under electric lights, all of that was really only four generations ago. The reason I mention all this is that what we've seen is this massive shift in labor productivity. Of course, Silicon Valley has continued to drive that. We get more productivity per worker from our tech companies than most manufacturing industries, and we've continued to push on this through automation. We haven't seen this level of shift in sustainability and resource productivity. By resources I mean broadly water,

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energy, land, food. You can see from that chart there has been a slight improvement, but it's less than a percent a year. It's nothing dramatic. That's really the opportunity as you begin to think about sustainability for the City and build on the track record we already have in this town, which I'm very proud of as a resident. There's an opportunity here to bend that curve and to really go through that same kind of step change I'm going to show you in just a second. I think Palo Alto has already started doing that in a number of areas, but in one area we're lagging and we're not innovating at the same rate. I'm going to focus most of my comments tonight on that. Here's a little scorecard, if you like. As a professor, I grade things. I don't dare to grade the City of course. If I look at energy, we're in the A+ category. We innovated PaloAltoGreen. We've now made it standard for the whole City. We've gone completely renewable. We're one of the first places to offer actually alternatives for green gas. I know the Sustainability Plan you're going to discuss later on tonight is looking at how to migrate more off gas entirely. That's a huge—that's really cutting edge not only for the country, but for the world. If I look at the area of buildings, we benefit a little bit from California having Title 24 and already being at the cutting edge. We've done things on top of that with rebates and energy efficiency and now Electric Vehicle (EV) charging-ready buildings. Again, that's an area where I'd say we're ahead, well ahead of the curve. We may not be as advanced as some places like Copenhagen, Denmark, but we're definitely leading in the country. The area that I mentioned where we're not as innovative is transportation. I know that's a hot topic here in the City, a real pain point, a concern for many people given the traffic. Really most of the rest of my thoughts I wanted to share tonight were what are some of the innovative things that are possible here as a way of brainstorming and opening up the dialog of can these fit for Palo Alto, what difference can these make. Can we be the same level of leading in the transportation area that we have been in energy and building? I think we can, obviously. Otherwise, you'd have a more depressing talk tonight. One slide on what's happening in renewables. I think Palo Alto has taken full advantage of this. This is the energy mix in the (United States) (U.S.) bumping along, different times when coal, gas or oil was cheaper. What most people don't realize is just how dramatic the advent of solar power was. It went from a ridiculously expensive source to being the cheapest today. We've taken full advantage of that, getting not only de-carbonization and environmental benefits, but actually economic benefits. Many of the companies in our area are doing the same thing with their energy footprint. On the building side, we've moved the needle a lot, but construction really hasn't improved much in productivity. You can see there between 0 and 1/2 percent productivity improvement on a nationwide basis. I don't have any data on Palo Alto construction specifically; although, we have a lot of it. If you look at the lever—there's construction, there's the occupancy in using our buildings

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more efficiently, making more use out of them. Think of this as the Airbnb equivalent except for commercial real estate as well and offices. Of course, energy conservation, and really important the solid waste from buildings. As many of you know, the largest fraction of solid waste is construction and demolition debris. How do we make buildings more reusable, make them last longer, make them reusable in their materials? I want to show you one example in this area of something that I think we haven't pushed as a City that's now possible, that really should be right up our alley because it's enabled by computer-aided design which several companies here in the Valley invented 25 years ago. The example here is a company that's based in Calgary but now operating nationwide called Doing It Right This Time (DIRTT). I'm sorry you can't read the beginning of the letters here, D-I-R-T-T. What they pioneered is using a CAD (Computer Aided Design) system you can specify an office environment or a home environment, and instead of being modular at the entire building level, which we've all seen modular housing that's not too attractive and modular offices; they do it at the component level. If you look at that hospital room or that living room, it looks pretty nice. They do high-end, custom wood paneling for professional offices. Everything is made to measure in the factory. You literally design it on the computer, press print and two weeks later all this stuff shows up. It's all snapped together. What they really did was reinvent the screw, and the screw turned into that extruded piece of aluminum that's snapped together. You can snap it together. When you need to move or change locations or reconfigure, your kids have grown up—they have actually done this in an operating hospital while there are patients in the hospital. There's no hammering, no sawing, no noise. You can reconfigure. That's something for us to think about in the built environment. We could do most of our offices this way. Some tech companies are already doing this, particularly the ones that move a lot, because 85 percent of all your interior outfitting, you can actually reuse when you move from one building to another. That's the way you ultimately really avoid a lot construction and demolition debris. I want to highlight why I think buildings and then in particular transportation are really key to focus on. This is a chart that Lawrence Livermore Labs has been putting together since the '70s, so they've been at this for 40 years. It's a flow diagram of energy throughout the U.S. economy. There's two shocking things about this chart. The first is if you look closely, we actually use 42 percent of the energy and we waste more than half still. Since the energy crisis, we've gotten better in California, but we're still not good. Even more interesting is that the ratio of wasted to useful energy is very different depending on the sector. If you look at our industrial sector, which is the middle path here, about 80 percent of the energy goes to productive use, most of it. That's because companies have a natural incentive to be efficient, to reduce costs. Energy is a big cost for many industries, so they've gotten better. If you look at the generation sector, it's still relatively

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poor. Only a third really goes to productive use. We're a lot better in California because of the higher footprint of renewables. This is mainly driven by fossil-fueled power plants that turn more energy into heat than they do into anything productive. Our numbers locally are much better than that. The third sector which is transportation, you can see, is the least efficient. Because we pump more and more energy into transportation in the form of liquid fuels mostly, the macro-economy has actually gotten worse over 20 years not better, even though industrial and buildings and power sectors actually made progress. This is the area where we need to innovate. I think you've all seen for us here in California and for us in Palo Alto, transportation is the single largest part of our carbon footprint. It's for the same reason, because we have this incredibly inefficient use of energy there, where most of what we put into our transportation system winds up as waste. I wanted to kind of double click on that a little bit and show you just how bad it is. This is my one really depressing slide. How many of you actually own a car? Probably most of you. You bought your car, you think, to drive it. I have news for you. You actually bought your car to park it. You're only in your car four percent of the time, so 96 percent of your time your car is lonely. I know the four percent that you're in your car, almost half of that you're either looking for parking or stuck in congestion. You're getting about 2 1/2 percent real use out of your car where it's taking you from "A" to "B." For many of us, if you don't own a vacation home or a boat or a place, it's your second biggest purchase after your home, so it's a significant investment to have sitting idle. I've already touched on the fuel. If you're driving an internal combustion engine car, only one percent actually goes to move you from "A" to "B." The rest is moving steel and turning into heat and causing tire wear and expenses as well. Pretty inefficient in terms of the energy flow. For anybody who's in the 25 to 45-year old group, age bracket, it's the leading cause of death, more than disease, more than guns, more than many of the other things that we worry about. We haven't really gotten better at this area as much as we have for airplanes, for example, or other areas of safety regulation. On the infrastructure side, the picture's even worse. We get 1/2 percent utilization out of our roads. I know on a rush hour on Friday afternoon, it feels like they're jammed, and it's true. For that two or three hours, they're jam packed here in our area in both directions, normally only in one direction. Actually through-put during those times drops, because they're being inefficient. The traffic jam actually has less cars per lane per hour than when the roads are moving freely. Most of the time most of the roads are sitting idle. There's a utilization problem there. If we all happen to go to school, we all happen to drive at the same time. If we could shift even by half an hour, we can get dramatic improvement in productivity. Not starting our jobs at the same time, not starting our schools at the same time. We're not going to the same place, everybody. I'll come back to that theme in a moment. Obviously, stop me

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any time you have questions please. That's the current picture. If you look at the macro numbers, it's about \$2 per mile all-in today for transportation. A dollar directly out of our pocket in the form of fuel, insurance, car payments, parking, garaging, etc. The other dollar is indirectly out of our pocket as taxpayers to pay for roads and road maintenance and policing and things like that. It's very, very expensive. Keep that number in mind, \$2 per mile all-in, because I'm going to show you how, with the technology that's already being developed here in the Valley, at the end of this session we can get down to less than 10 cents per mile all-in. Come back to our choices. Again, I'm focused on transportation now. If you have to think about how we can innovate here, it really is different by distance. At the shortest radius, we're talking about the Downtown areas, the centers of commerce in the City. There the issues are how do we achieve density. Since we want a certain amount of space to be comfortable, we're really mainly talking about going up or down in height. How do we get walkability? That's the quality of life we all love in Palo Alto. You can actually walk here, and we have great walkability scores, but how can we build on that. Some parts of Palo Alto are not so great to walk, so we can add to that. Lastly, what do we do with cars? Most of our cities are still designed around the car. It's optimized for the car to get around, not for the person to get around. There's some real trade-offs there about how do we charge for parking, how do we design it, who gets to park when, where. That's the innermost ring particularly for the really busy commercial districts. In the mid-range, there's a lot of innovation. I'm going to share some data with you on a pilot we did at Stanford for mid-range commuting. Mid-range, I mean beyond what you can normally walk, 2 miles or more, but less than a distance where you have to get into a car or take a train. With a normal bicycle, that's about 5 miles. With an electric scooter or an electric bike, you can take that out to about 10 miles. That's one option, our bike network. Second option is this new idea of mobility as a service, a shared taxi fleet either driven by people or ultimately driven autonomously. Of course, at the third scale at the regional level, not necessarily directly under our control as a City, how do we integrate and coordinate to have a regional system that really get us from here to San Francisco or here to San Jose in a reasonable way without spending an hour and a half as I just did coming up from the south bay. A key part there is zoning. Our zoning practices today are actually quite destructive to each other. We sort of keep trying to shove the bad stuff off onto the other cities and really playing a game of mutually assured destruction at a kind of micro-level, causing more traffic by saying we don't want this particular land use, somebody else can deal with that. Of course, that generates trips. I'm going to dive deeper in on this. You all have seen some version of this, which is that density helps. I'm not talking building skyscrapers like New York or the City Hall tower here. I'm just talking about a little bit of extra underground or above-ground height.

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These are two cities that have the same population, arguably the same quality of life, although I've heard people debate that Barcelona is probably a little bit nicer than Atlanta, anybody who's lived in both. As you can see here, one has seven tons of Carbon Dioxide (CO2) per capita; the other one has 0.7 tons of CO2 per capita. In terms of energy footprint, the cost difference for people spending on transportation is about 4X times between these two. The answer is very obvious. Barcelona is very walkable, very compact. Atlanta is one of the worst examples of urban sprawl in the U.S. Palo Alto is in between these two in terms of density. What are the levers? I dug into the history. This is one of my favorite cities at the bottom here, Florence. You can see Florence is a little bit higher than our height limit here in Palo Alto. The history is it's 29 meters which was the capped height so that no family in 1200 could get ahead of the other families by building a taller tower. It's an old height limit, but it's led to a very nice city. Any of you who have been to Florence would probably agree quality of life there is not bad. Same climate as here. Could we do something like this? You can see very lovely streets at the ground level, still very friendly, but one or two stories more than we have. For the areas near our train stations, California Avenue (Cal. Ave.), Downtown, this is a viable option for increasing density and walkability and adding a mixture of both office uses and residential uses. Florence has done this completely by making downtown pedestrian only. Here's a description from a tour guide of Florence: How do you get around Florence by car? The answer is you park it and you start walking. Not everybody obviously is up for that, but it's actually quite a nice way to experience the city for anybody who's been there. I want to just highlight some pictures. If you go back to that time I mentioned earlier, we had a walkable City. This is Palo Alto at the turn of the century, the previous turn of the century. People were walking or took this tram line that went down the center of University Avenue. We kind of gradually engineered around the car, fast forwarding here. You can see at this point it's pretty much all cars. I don't see any pedestrians any more. This is the '60s. We've brought the pedestrians, and there's certain days when we've brought a lot of pedestrians back, and everybody's out on the streets. I show this picture which is not Palo Alto just to show how you can do that in a modern environment, Santana Row, and actually make it a nice place. If you think that's hard because we're very busy, we have a lot of people, we have a lot of businesses here, here's a city that has a lot more businesses. This is what it looked like when I first went to New York. Here's New York a couple of decades later. Here's New York today. This is Times Square obviously, now mostly a pedestrian zone. The fascinating data point about New York—this is where the research knowledge comes in—is what do you think happened to pedestrian traffic at Times Square when they did this? It went up, right? Obvious. What do you think happened to the speed of vehicle transit through Times Square when they did this? Down, yes, that's what

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you'd guess. It went up by 20 percent. The reason is very simple; pedestrians and cars weren't fighting each other anymore. You have clear times when the cars have right-of-way. The rest of the time it's all pedestrian, and only certain routes through are now actually available to cars. The cross-town traffic, which is what's really slowing Manhattan, actually sped up. If you do it right, this can be a win for everybody. This isn't pedestrians versus cars. This is just good design. Again, I caveat that I have no idea what the right answer is for Palo Alto, but if you sort of played with it and said, "Let's make it a nice tree-shaded lane, we build some cross-cutting streets, we build a circular flow, we add a bike lane through, can we do something like this?" I'm just using Downtown as an example. Obviously, you could do this Midtown, you could do this California Avenue. Lots of choices here of things that cities have done that work very, very well. We don't have a river through town. A lot of cities have done this around a river. That's a kind of natural place to make a nice walking area, but we could do something like this. Again, I'm talking about the near-end solution, within the short range around Downtown. I mentioned our experiments at Stanford with two-wheelers. This chart is a little bit hard to see because it's very small up there. What this data shows is how long does it take you to commute by different modes. If you look at the lines up there, the fastest line, the bottom line there, is the car in the idealized car commercial environment, zero traffic, driving through beautiful scenery. You can see here it takes you about ten minutes to go three miles, takes you only 15 minutes to go 10 miles in that idealized world. However, if you take the real car, it actually takes you 30 minutes to go that 10 miles because of congestion, traffic lights, all the things that we really know. If you look at the regular bike, a bike's competitive for a couple of miles out. Typically, people take it two or three miles, and people aren't willing to ride a bike more than half an hour roughly. That's what the consumer research shows. That's the top line there. To go 10 miles by bike is a 60-minute trip. If you're in spandex, that works. If you're going to work or you're going shopping, typically that's beyond what you want to do, arriving sweaty in your work clothes. Take these two-wheelers, we tried this out with the commuting population at Stanford that was coming from Menlo Park, Palo Alto, Redwood City, cities that are within a few miles of Stanford. You can see the actual electric two-wheeler commute time is very similar to the real car time. In fact, it beats the car up until seven or eight miles out because you can go directly to the building. You don't have to worry about parking. If it's a scooter, you fold it up and take it into the building. If it's a bike you park right outside. At kind of 10 miles out, the car starts to have a slight edge. If we think about a bike network for—Palo Alto isn't that big; it's only a couple of miles across. We can get across town, we can get from residential areas to the Stanford Research Park, we could get Downtown very easily with this mode. These are now becoming very inexpensive. You

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can get an electric bike for about \$1,500. A scooter is less than 1,000. We actually factored in the fact that we're wimps here in California; we don't like to bike on rainy days. We said if you took the bike on sunny days, and we granted you every heavy shopping day and every rainy day that we've had in the last year, you'd take Uber, 40 days of Uber. You still come out at about half the cost of owning a car. Owning a car is about \$7,000 per year. This solution is about \$3,000 per year and, of course, you wind up getting health benefits. A lot people talk about last-mile problems. I'm going to talk about those now, because that's really what hits you in the intermediate range. I need to go further than I can walk or bike, and suddenly I'm reliant on the car if I have no other option. First is—this is not my analysis but Spur has written a whole report on this for the Bay Area. We created this last-mile problem through 40 years of zoning of moving jobs near the bay and most residential areas near the train tracks, near the old downtown areas. This is something we created, something we can also change obviously not over night, but over a longer period. In particular I want to highlight the fact that it doesn't have to be this way. Other regions have made other choices. Most of our industrial commercial uses now are no longer the 1950s style of toxic semiconductor materials manufacturing. We're talking about people sitting at computers at work, just like they sit in front of computers at home now. There's an opportunity not for every kind of use obviously, but for many to blend and interface those more and blend the boundaries between a residential area and an office park and then a true industrial area. You don't want to put industrial right next to residential, but there's a lot of interface potential here. Also, from a longer-term point of view, as our tech companies grow, we don't want to force them to leave our cities because that's what generates the car trips. Here's a land use choice. This is what I meant when I mentioned earlier when I said we're playing a game of mutually assured destruction. Each town wants to draw the Google, the Facebook, the Intuit but doesn't want them in their downtown, wants to push them out. Then people live in the various towns, and they start commuting by car. The reason is very simple. This is data that shows what is consumer choice like depending on whether your work or your home is near transit options. It won't surprise you that if neither your home nor your workplace is close to transit—half a mile here is the threshold used in this research—very few people actually take transit because most people aren't willing to walk more than half a mile. On the other hand, if both your home and your workplace is near transit, you get the kind of pattern that we see in downtown New York where almost everybody takes transit. We have that here in San Francisco in the downtown areas. You get 45 percent transit mode share. Fascinating, though, is the middle range. If you have a choice between placing your work near transit or your home near transit, it's actually the work that matters more. That's counterintuitive. We've been mostly placing our homes near transit, not our work near transit. If you

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really think about the trip, if I have my work away from transit, I need the car on the work end. Now my car is stuck when I get off work and take it to transit, then it's stranded there. I don't have my car for all the other trip uses that really originate at home, taking kids to baseball, going to the grocery store. Having the car access to transit from home still works because I can do other things from home with my car, but I need that last mile to work actually to be possible. You see the employers all recognize that here in the Bay Area, which is why they've built their own bus systems, because they're closing that last-mile gap from transit to work or directly from home to work in the case of the longer distance shuttles. This is really important in terms of policymaking, how do we site residential and office uses. Another dimension is there's a demographic shift happening. If we just plan based on the past, we're going to get it wrong in this case. This is data at the national level. The second chart's for California. You can see there's a real inflection point here that predates the recession; it's about 2006 that the data started changing. It's two years before the big recession hit us. Yes, there's a recession effect as well of people commuting less, but this is vehicle miles traveled, particularly in car trips over this time period. You can see we've gone from an always increasing, pretty much in line with GDP trajectory to more or less a flat trajectory. In fact, if you look at it per capita, because population is still growing here, we're actually slightly down, not just flat. The reason for that, as I mentioned, is the demographic effect. This is the data broken out by age group. You can see middle age more or less driving the same way. You can see an increase in our elderly population driving. That's because we live longer and we are active much longer. While those percentages look really large, the actual population in those age brackets is much smaller than the population at the younger end. The net effect is a decrease because anybody under 35 is basically dramatically reducing their trips. The reason is you're no longer going to the movies with your friends; you're on this for your social connections, for your entertainment. Much more is moving online for that generation. The mobile phone has taken the place of the car as the sign of independence, as a sign of maturity. You're seeing 20 percent reduction here in the younger demographic section. Much of it here to stay beyond the near-term recession effect. If we plan for an increase in road use and increase in traffic without thinking about this third of our population, as I said, we're going to get our planning wrong. These people are moving back to cities. I have a number of graduate students at Stanford who have completely given up their car. Their parents gave them a car; they turned around and sold it, and they're riding Uber now. I have some students with a \$1,000 Uber bill per month which is surprising. Completely converted. They're using their bike, of course, but they're using Uber for when you would have used a car. How do we make the transit option at the mid-range—again short range walking or biking—attractive? There's a lesson here internationally that we

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just haven't learned locally which is it's not just about area coverage. All our metrics today are the percentage of the population that's near transit. That's an irrelevant metric. What I care about is not about how many theoretically could use transit; I care about how many do use transit which is driven not by how close you are to transit but also by the convenience. This is where some data illustrations are really helpful. If you try to get from here to San Francisco not by Caltrain but by bus, you're crossing three county jurisdictions, and you're typically spending 2 1/2 to 3 hours on the bus. It's an impossible trip. Nobody in their right mind would do that. Most interestingly, half of that time between here and San Francisco is transfer waiting time because the schedules aren't synced up between the different systems. You're literally waiting for the bus, not even on the bus. Our system is fragmented because we plan it at the city and county level. We don't interconnect it, and we don't have enough high speed connections. We're lucky we have Caltrain; that's the one fast connection up and down the Peninsula but actually not so fast. I'll come back to that in a moment. The single biggest issue is frequency. The international standard when you're doing transportation design is actually seven minutes or less between vehicles. There's a magic effect that happens. You've all taken Caltrain, I assume, at some point. What do you have to do when you plan to take Caltrain? You check the schedule. The reason you have to check the schedule is if you get it wrong, you're waiting at the Caltrain station for as much as 40 minutes or an hour. You've got to plan ahead. The magic that happens at seven minutes is you stop checking the schedule. You go, you show up, you get on the platform, you get on the next vehicle that comes, you don't have to think about it. I gave the example of the Beijing subway system has a two minute and two second interval. First of all, anybody who's planning their vehicle intervals in seconds is running a pretty accurate system. Also at two minutes, it's like the New York subway. If any of you have been to New York, you just go down, you show up, you get on and you never think about it. You don't have to go to two minutes, but seven minutes is that magic threshold. We're not close to that in our area here. Actually downtown San Francisco, some areas are. New York City is there. You can see San Francisco has a lot of four and five minute intervals which actually works. Caltrain in the best case at peak time has about a 20-minute interval. That's for the lucky ones of us who live here in Palo Alto; we have a major baby bullet stop. How do we increase that frequency and increase the number of vehicles? From a policy point of view, this is really important because we tend to spend all our money on the infrastructure and then starve the vehicle and the Operations Budget. That's actually what drives the convenience and the frequency of the vehicles. If we had to advocate for one thing for Caltrain to do, it's the number of vehicles that are going. If you go to the Caltrain depot on any given day, at peak rush hour you'll see five or six trains sitting idle at the San Francisco Fourth and

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Townsend depot. They're not using all their trains. It's purely for Operational Budget reasons and a little bit for schedule constraints which I want to talk about. The left is what's happened historically. You can see here the ridership data for different stations pre and post the introduction of the baby bullet. Everybody knows the baby bullet's a great story. We got great service, faster service, and suddenly we had this increase in ridership. It's true for Palo Alto, Castro Street, the stations that have baby bullet service, a massive increase in ridership that's driven an increase in ridership in aggregate, but we lost some stations. California Avenue diminished dramatically in this change because it gets hourly service now. Now you really have to check the schedule and plan. You're actually likely to come to Downtown Palo Alto by car just to take the Caltrain. It doesn't have to be this way. This is a project one of my graduate students did on the right-hand side. If you ran a mixed-schedule—any of you who have been to New York have seen local and express mixed on tracks. We can do the same thing here. Redwood City is a four-track location that could be a junction node. If you ran this kind of model, an express and a local on the same tracks, you could increase capacity by 10-15 percent. Another option is you change our engines. I show you this ancient chart of the Southern Pacific Railroad schedule. This is the current Caltrain line. It's fascinating. If you go back 100 years, these are steam engines remember. Our schedule is the same or a minute slower. By the way, in 1865 we were the cutting edge of transportation. We really were. That was with the latest train engines. They had the fastest service. They were fabulous. We just haven't kept up. As I said, we innovate in every other area. We need to innovate in this area again. On the right is a concept for a train operator that has made an offer to Caltrain to basically on a commercially funded basis—this is private capital funding these trains—can operate an in-fill service that adds to Caltrain. This is not Caltrain trying to raise public money; this is a private operator that says, "I'm going to add trains funded by private capital." You can see here we could reconnect across the bay, across the bridge. We could run service to our tech companies like Facebook and Google, and we could get added service to Palo Alto. The secret here is the engine's different. These are diesel-electric Electric Multiple Units (EMU), so they could be done before full electrification. Electrification gets you the same kind of benefit. Now you can have an electric train chasing the bullet. Because it's electric, it accelerates and brakes faster. It can actually keep up with the bullet but make more stops. Suddenly I increase the number of trains, I increase service levels. We can't quite get to seven minutes this way without going all electric, but we can get down to about 10 minutes which actually starts to be at the point where you say, "Maybe I don't have to check the schedule." Of course as anybody who has ridden Caltrain in the morning commute knows, those baby bullets are at 120 percent capacity, no seats available. We actually need that extra capacity in the peak time. Interestingly, if

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you're a private operator, you start thinking differently. You don't start thinking union contracts, how many trains can I run each hour. You start thinking like Southwest Airlines. How many of you have taken Southwest Airlines? Pretty much everybody. They're actually much less late than United is. They also do something different with their planes. They realized the most expensive part of their budget is the plane asset. They get as many flights as possible out of the same planes that everybody else has sitting idle at the gate, at the terminal or in maintenance. What if you did the same thing with trains? What if you said, "I take my existing fleet of trains, and I ran them all the time. I get as much use out of them as possible. I do my maintenance at night, and I run them all day." Now suddenly, I could take a midday trip. I could meet somebody in San Francisco for lunch and go up there in 35 minutes and come back 35 minutes later and not have to worry about the one-hour schedule gap that exists in the midday schedule. There were some very interesting private bus fleets a year ago that tried to copy the Uber model to offer bus service between the Peninsula and San Francisco. They all got cease and desist orders because they weren't licensed, but they were a nighttime service. They found that there was massive demand for people to go to San Francisco in the evening and come back at 10:00 or 11:00 at night. They rode on buses, but why not ride the train if we had those trains? If any of you have ridden Caltrain at night, it's a two-hour interval. You miss that 8:00 train, and your whole evening is messed up. Again, different incentives if you run the trains all the time. Let me talk about the last two changes in transportation that create opportunities. One is we've gone from this world with paper and gadgets to basically everything's an application (app.) What that means in transportation is we go from this notion of the intermodal world—this is a real picture of a train being carried on a semi on 280—to actually intermodal means this: intermodal is an app. that gives me access to every mode of transportation, and it's user-centric. It starts a plan about where am I coming from, where am I going. It might even automatically know every time I leave the house at 8:00 A.M., I'm going to a particular destination for work. It shows me the best, shortest, cheapest, fastest way to get there. That's already all possible today. There's several app.'s out there today that do this. Let's plug all our systems into it. Let's require all our data to be open so that actually every mode of transportation can participate and be optimized this way. With this kind of access, particularly if we could add the payment system on, just like Uber—if any of you have tried it, Uber is very convenient. I call it, I get on it, I get off it, I never have to worry about payment, I never have to worry about having cash in my hand or having the right Clipper card or having the right exact change. It's fully automated. We can do this for our public transit too. I think the City can push for this both in its local transportation but also for the regional system. Let me close by coming back to cars and the \$2 per

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mile all-in. I mentioned that vehicles today are quite expensive, your second biggest purchase after your house. Obviously not nearly as expensive as your house if you live in Palo Alto. If you add up the numbers between insurance, car payments, parking, your depreciation on your vehicle itself, maintenance and repair, you're talking rough numbers about \$8,000 for your car all-in per year. It's about 15 percent of the total household budget for the average household, probably not for the Palo Alto household, but for the average household in the country. You can see, as I mentioned earlier, we get that two to three percent utilization out of it today. There are a couple of things we can do to change this. The first is change our fuel expense. We're lucky to have little bit lower gas prices now. The big change here really is electric. This is, I would say, an electric skeptic's view of the world. This is Exxon's forecast for battery technology and when electric vehicles come in. This is kind of the far end of the spectrum. Exxon interestingly changed its forecast about a year ago to say by 2040 we'll have electric vehicles. I went to the group that does this forecasting and I said, "What made you change your mind that we'll get electric vehicles suddenly?" They said this is when batteries get to be below \$200 per kilowatt hour (kWh). Why is that a magic number? That's when the upfront cost of the electric car is roughly the same as the gasoline car. Right now, you want to buy a Tesla; it's more expensive than the equivalent gasoline car. Yes, you save per mile in the operations because it's about a third of the cost or a quarter of the cost of electricity versus liquid fuel. Upfront, you're paying for it. They're right about the \$200 per kilowatt hour. That is the right number. That is where the car starts being equivalent in upfront cost. You can go to a lot and buy either electric or gasoline. They're wrong about the timing. These are various forecasts of battery costs mainly driven by Tesla here in our neighborhood, but also companies like Panasonic and Samsung. You can see that number we get to at about the end of this decade, 2020, 2021. We should be planning for this world. I mentioned at the beginning this is one of the areas where Palo Alto is way ahead. We both have a high rate of electric vehicle purchase; we have an unusual number of charging stations; we're thinking ahead for our homes to be ready for this. This means that we dramatically reduce the cost of transport, and we open up some options for all electric vehicles. If you think back to the beginning of my talk of the downtown areas, you can begin to intermingle electric two-wheelers with pedestrian zones and have electric vehicles shared maybe available at the periphery of that to go out from there. Let's build on that idea. We've got some tech companies here that are now building cars. That younger demographic that doesn't want to own a car anymore actually is quite open to buying these vehicles from tech companies. Many of them like them more than buying it from a car company. Let's go one step further and start sharing these cars. We don't have to own them anymore. I want to show you something about your

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pocketbook. Today you can ride public transit, and that's always the cheapest option but, as I mentioned earlier, not always the fastest or most convenient. That's the bottom line here for public transit. The mostly horizontal lines are either purchasing or leasing a new car. Leasing in total cost will cost you a little bit more, but obviously a lower upfront price. Those are the horizontal lines in the middle, starting at about \$8,000-\$12,000 per year. Let's plot Uber, UberPOOL, Lyft Line, these new systems on here. You pay per mile, you pay per trip. You don't have any big payment upfront. It doesn't cost a lot of money to join these systems. You install the app., download it, and you're ready to go. Look at the crossover points. If you're taking Uber X, the more expensive, private form, the crossover point is about 5,000 miles per year, 4,800 miles. If you drive fewer miles than that per year, the only reason you own a car is for that marginal convenience of having it in your driveway and not having to wait five to seven minutes or because you like the brand or because you like having your own stuff in the car. A lot of people have said to me, "What about my kids' soccer gear?" Yes, that's another reason why you have your own car, because Uber hasn't come up with a solution for that yet. If you're willing to share, Lyft Line, UberPOOL or DriveNow or any of the cars-on-demand, that crossover point moves out to 9,000, 10,000, 11,000 miles per year. The bottom, I've plotted the percentage of U.S. drivers that drive different distances. You can see about half the population is below that number. Half the population could actually for economic reasons just shift entirely to sharing. Once we get enough density of the shared systems here, particularly if they're deployed into our residential neighborhoods, any car is shareable which is where we're headed with the connected cars that are electric that you can just open up your car and share it with your neighbor. If you know where it's driven, what's happening to it, the risk of that is much lower? There's companies already in San Francisco that offer that. By the way, they insure it while somebody else is driving it, so you have no risk. We can suddenly see that a lot of our cars are shared, not all. There will still be people who love their particular vintage model or who love their particular type of vehicle for the purpose they need. If you're a contractor, you definitely need a truck, and you're probably going to own that truck. For your second or third car for your young kids that need the occasional trip to some event, this becomes an attractive option. In fact, to give you the data for San Francisco which is a little bit ahead of us here in Palo Alto on this dimension, we're seeing second and third car purchases go down dramatically already. The smart developers have figured out that while real estate prices for housing are going up like crazy, just like they are here, the value of parking spaces is going down. That's because of sharing. There's an arbitrage opportunity here converting our parking into more housing. People need fewer parking spaces. I'm going to come back to, I think, one of the things we can do as a City is to encourage sharing. If you

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look at the most successful sharing systems are in Swiss and German cities. They made one very simple change. Parking is bundled into the car share per mile. If I drive a shared vehicle in Munich, I can pick up the closest one that I find based on my app. I drive it one way, and I can park it in any legal parking space without having to worry about parking fees. The next guy can pick it up from that parking space, drive it somewhere else, and park it in any legal parking space. It doesn't mean giving up the City revenue. The operator for the car system is paying for these cars to be parked on the City and is paying a lump sum essentially. The user is being charged on an all-in per mile basis. We're not talking about sacrificing revenue. We're just talking about making it super convenient to share cars and not have to worry about parking spaces. That's something we could immediately start here. I want to show you how that unfolds in the rest of the system. Remember it's \$1 all-in out of my pocket to drive, and it's \$1 as a taxpayer for the infrastructure. How do we get to this nine cents a mile? Let's deploy all these technologies at once. I'm fast forwarding here a couple of years obviously, because not all of these are in broad penetration yet. Autonomy, Google car, reduces all the human-caused accidents, all the inattention, the errors, the breaking the traffic laws, 90 percent reduction in accidents. My connected car allows me to route around traffic. Anybody who uses Waze gets some of this benefit today. The intermodal apps. allow me to integrate my car with transit and book a parking space or convert from a two-wheeler that I rent to Caltrain. Going electric takes me from that one percent efficiency or about 15 percent efficiency for the whole system to somewhere around 70-80 percent efficiency, because batteries and electric motors are more efficient. Now I save most of my fuel. The single biggest lever is the sharing, four percent utilization today. If you look at Hertz or Enterprise or any good rental car fleet, they're about 60 percent utilization. That's a 15-fold increase, which if you flip that around and say now the car costs 1/15th as much to really drive per mile. Where it gets really exciting is I start putting these together. If I do it all at once, something I call Autonomous, Connected, Electrified and Shared (ACES), autonomous connected electrified and shared, that's really the ace. If I have connected and autonomous, I can suddenly change the space in between the cars. The reason our freeways have so little capacity is because I need eight or nine car lengths for humans to drive safely. There's a company up in Redwood Shores called Peloton that's already doing this for trucks, driving them a couple of feet apart from each other. They're linked electronically; they stay in sync between the trucks. We could do the same with autonomous vehicles. Just to give you why is this shocking in terms of planning, every road gets an eight-fold increase in capacity. Four-lane 101 turns into a 32-lane superhighway in terms of today's capacity. It matters because when this happens, we'll never build another road; we'll just increase capacity on existing roads. Obviously not going to happen this year

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or next year. A lot of companies have promised full autonomy by the end of the decade. It's well within the horizon of thinking about building new roads. Take another example, electrified and shared. The big cost today is the battery. If I'm sharing, swapping in and out of vehicles based on my trip, I rent a big car battery for my trip to Tahoe, a small car battery for my trip across town that comes with the vehicle, now suddenly actually the cost upfront isn't even that high anymore. Of course, if I have autonomous and shared and electric, when I don't need the car, they go and charge themselves somewhere away. They don't actually need to be parked. This is mobility as a service when you really fully deploy it. Pencil out the numbers, and that's where you get to the 9 cents per mile all-in. Suddenly everybody can afford transportation. One caveat on this, and this is my closing thought before I get to a brief recap of how can we act on this as a City. If I deploy just autonomy, there's a really nasty scenario here. If autonomy comes in as a luxury feature on a high-end vehicle, guess what? People will move more into the hills and move further out of town; we'll get more sprawl. Suddenly that painful commute isn't so painful any more for the people who can afford that luxury autonomous car, because they're doing work the whole time, watching a movie, doing their email, whatever it might be. It's only when it's in combination with electrification where I knock out the emissions, and sharing where I actually get that higher utilization, and the connectedness where I can decrease the space or if I want to build autonomous carpool lanes where I encourage sharing and autonomy at the same time, that I really get these benefits where it's much cheaper. Suddenly it becomes a great last-mile solution for those intermediate distances. I might take the train down the Peninsula and then hop into an autonomous car for the last mile or two and get home with great convenience door to door. It's all demand. It's all on my app. Last slide here. It's Monday night, so what can you do Tuesday morning? What are some of the things that are mostly under local control that we can begin to shape? Again, obviously for debate, how exactly we localize this for Palo Alto. First from a planning point of view, really important to plan road and transit together. As we have these app.'s, these systems will interconnect and converge. You're seeing that in the behavior of the under 35 demographic. I mentioned the planning. Don't assume that we keep having increasing Vehicle Miles Traveled (VMT), don't assume we need increasing road capacity. As these technologies come in, we'll get more traffic for the same lanes, and we won't have increasing VMT forever. Yes, as we grow population, that will still increase VMT, but per capita we're flat. Don't assume it keeps going up. Factoring these learning curves of when new technologies become cheap enough, whether it's the electric battery, whether it's the sensor systems. Land use. We need to figure out how to coordinate with our sister cities up and down the Peninsula to actually place housing and jobs near transit to allow a little bit of increase in density.

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Again, I'm not talking skyscrapers. I'm talking about having an office layer on top of a commercial layer or a residential layer on top of a two-story office building. I'm talking about adding a floor or two. It will go a long way to actually reducing a lot of that Downtown traffic and begins to offer that option to have jobs and home near transit. Integrated with the sharing system. The most innovative (inaudible) in San Francisco now are actually arguing for a reduced number of parking spaces. Remember, those are diminishing in value. I can build more residential units, and I offer a shared access system in the basement that gives me access to Zipcar, Uber or other shared electric vehicles. Transit, some of it we can control locally. Certainly Stanford University is very interested in opening up transit and has already made it free for anybody who wants to jump on Marguerite. Integrating that into our system in the City, and then really getting together with our fellow cities up and down the Peninsula to push for that frequency of Caltrain. Let's see what we can do not only with electrification, but before electrification. I've been to one of the previous City Council meetings about the crossings and how do we solve the cross-town traffic problem. Let's also think about how we actually solve the modal transfer so that we can get California Avenue back into a main stop, and we can make our Palo Alto stop work even better than it is today. I'm going to touch a hot potato, parking. Right now, we give free parking for most of the City. Stanford charges for parking, has seen a dramatic shift, 20 percent of modal shift has happened over the last decade and a half from people who drive their car to people who take some form of walking, ridesharing, transit, carpooling, biking, basically because they made it more expensive and you get a subsidy if you actually share or bike or walk in the form of a commute credit, and you pay a charge if you want to park. It can be revenue neutral. There are many ways obviously to structure it. We can do it through an app. Rather than just say we need to build more garages that ultimately will depreciate in value, a lot of other ideas here for what we can do with parking. That's this idea of the fee-bate where you equalize a subsidy for those who are willing to change modes and begin charging. It can be very small; it doesn't have to be a massive charge upfront. Really important, I mentioned this already, opening up the data for all of our transit and really sharing data so that our bike trails begin to connect, and we stop doing the study separately for Palo Alto, Menlo Park and Mountain View and actually say, "Let's see where people actually really bike." They bike to work. They bike to shopping centers. They bike to movie theaters. Let's see where our kids go with the bike to school. Let's integrate that into one network. Right now, if I go to Mountain View, I've got a gap in the bike trail system. If I go to Menlo Park, I've got two bridges, so there it's interconnected, but I've got some areas where I'm in a bike trail desert. I wouldn't send my daughter there who's nine, through those zones. Lastly, being open to experiments. We're lucky to have some of the most leading edge technology companies that

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historically haven't been into transportation or energy technologies. In the last couple of years, they're starting to significantly invest. Millions of dollars being spent on buses right now, as many of you know. We can redirect that to fund some of these new ideas as well. Companies have already been funding bike upgrades. They've already been funding an option to look at new rail options. There's a synergistic opportunity here to work together to actually improve the system. Having each tech company build its own transit system cannot be the most efficient answer for our reason. Thank you very much for the time. Be happy to take questions and look forward to our discussion.

Mayor Burt: Thank you very much, Stefan. This was an informative and provocative presentation. We can carve out just a few minutes for questions if any Colleagues have any. Council Member Filseth.

Council Member Filseth: Thanks very much. You said earlier that in San Francisco basically public transit works like it does in major cities around the world. I mean, nobody has to remember a schedule, so everybody takes it and so forth. It doesn't in San Jose. Why not?

Mr. Heck: A little caveat: some parts of San Francisco. There are low-density parts of San Francisco that have 40-minute intervals as well, and it doesn't work there. San Jose is a very interesting Case Study, because it's interesting. New York is the best transit system in the U.S., also one of the oldest. Huge capital spending, obviously has great density. We're interesting because in the same region we have one of the worst performing transit systems, Valley Transportation Authority (VTA), and we have one of the best performing transit systems in the country, San Francisco Municipal Transportation Authority (SFMTA). A couple of things happen there. If you look at the light rail system, we placed the stops too close together. I told you earlier people are willing to walk about half a mile. That data basically says you should site your transit stops a mile, a mile and a little bit apart. You look at Beijing or most international cities, it's about 1.1 miles, 1.2 miles between stations, the same as New York. The San Jose system places them .6 or .7 miles apart. That means that while access is great, if you're a rider, it's too slow. We also didn't design it along the main corridors where people are already going. It weaves around and goes to different destinations. Of course, the intervals are pretty low. At peak time, it's about a 15-minute interval. Off peak, you're talking about 30, in some cases even 40 minutes. We don't have a grid network. We have two lines basically. It's interesting, it's instructive. I actually looked back at 100 years ago. If you look at the transit system then, we had an electric rail line that started here in Palo Alto, went through the areas where Fry's is, went past the Veterans Affairs (VA) Hospital and went down Foothill Expressway and connected to Cupertino and

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connected to an electric rail line that came down from San Jose and actually in those days had much higher ridership, was cheaper than it is today and all electric already. We've gone backwards in terms of that part of the Bay Area. The other part is we don't have a lot of regions of high density. The Downtown area has a lot of commercial, but not much residential, so we've split those. We really haven't done well siting the companies close to the existing transit capacity. All of those are inhibitors where subscale, long interval—the times are too long, that's why people ride Caltrain but don't ride the light rail system to the same degree. Caltrain actually is pretty direct and pretty efficient. That's a short answer. Sorry?

Male: (inaudible)

Mr. Heck: Only one place, that's right. That's why we need a network. Again, if you look at cities that work, you've got radial connections and you have circular connections. We have that if you look at the northern part of the bay. I'd argue, despite what we say at Stanford, between Stanford and Berkeley, Berkeley residents aren't that different from Palo Alto residents, and yet we've got a massively higher transit ridership across the Bay Bridge in the Bay Area Rapid Transit (BART) region, basically because the frequency and the density is right and it's more of a network there than it is here.

Mayor Burt: Council Member Kniss.

Council Member Kniss: Unless I'm mistaken, the lead on our autonomous cars has been taken by tech companies and not by car companies. Do you want to comment on that?

Mr. Heck: Yeah, that's right. That's right. Car companies are trying to catch up. They're all a little bit scared of what Google is doing and Apple and others. Now, there's Chinese tech companies actually getting into the game, building their own cars. I think it's still early. It's hard to build a really reliable, safe car. It's certainly hard to build an autonomous car brain. I think we're going to see only a handful of companies make that transition. We're lucky to have some of them here. I think we've got some good bets going. One of the things I want to highlight is we can help these companies succeed. We were the place where a lot of the early development was done three years ago. We're right on the cusp of losing that. If you talk to companies now, they're starting to test in Austin. If you saw an article a couple of weeks ago in the *New York Times*, they're starting to test in Florida. We're losing our edge. We should be encouraging that to happen here and opening opportunities for them to actually test and build sharing systems here. I think it is a huge opportunity for us to get that creativity, to

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get that industry, to get those jobs, and to get the benefits of having the future system.

Council Member Kniss: Thanks.

Mayor Burt: Council Member DuBois.

Council Member DuBois: The first question is can we get a copy of those slides.

Mr. Heck: Sure, you're welcome to it.

Council Member DuBois: A lot of things were cut off too.

Mr. Heck: Sorry. It doesn't display well on this screen.

Council Member DuBois: I have a bunch of questions. I'll try to cut them down. Many of the cities you were showing were kind of large, urban cities. I think one chart, the circles were like 500,000 workers. I think you said that Palo Alto's really kind of an (inaudible) that built up around the train station, around Stanford. Have you seen anything or have you given any thought to the idea of like a smart suburb? I mean, could we innovate and get a lot of these sustainability benefits without necessarily going towards a really dense City?

Mr. Heck: First of all, we're in a brown field situation. We can't start over, so we have to begin with the kind of density that we have. I think the direction we're talking about of continuing to double down on the nodes that we already have, like the Downtown area here, and then figuring out how to integrate the surrounding areas within a couple-mile range into that, that is a smart suburb in a way. If I have the option of either getting on an electric scooter or electric bike or walking to a transit node or having my autonomous car or a shared autonomous car take me, that's what we're talking about. The deployment of these early prototype systems here would give us some of that smart suburb. We're not talking about adding density everywhere. We're talking about adding density in the places where we have existing transit, and then we're talking about adding easy access for the rest of the areas, so that we can tie that together.

Council Member DuBois: The other question I wanted to ask, and you kind of got into it a little bit, kind of predicting these shifts and technology can be really difficult and you had the battery example where it happened a lot sooner. I'm concerned about how we should think about investing in things like trains versus, say, flexible caravans of autonomous vehicles on 101. It's

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almost like we're at this point where there could be a real revolution, and do we invest in these older technologies. How would you think about that?

Mr. Heck: That's a great question. Both of these areas are seeing a lot of innovation. In the road area, it's brand new to the world. In the train area, it's really let's adopt some innovations from elsewhere because they're already working in other places. I'll give you one interesting statistic. If you take a normal highway, freeway lane, 101 or 280, peak capacity is about 2,000 vehicles per lane per hour. Any more than that and you get a traffic jam, and through-put actually drops lower.

Male: (inaudible)

Mr. Heck: Without autonomous driving, right. Now I add autonomy. As I said, it's about an eight-fold increase if every car is autonomous. If I mix, then I don't get the full benefit, because the humans still need space. I can get to about 15,000, 16,000 vehicles per hour. Of course, the number of people in those vehicles matters. If I'm running Facebook or Google buses, I'm carrying a lot more people per lane per hour than if I'm running single occupancy vehicles. There's still a big multiplier effect from doing carpools or buses and sharing those vehicles. If I take a train, a high-performing train system, you're talking about 45,000-60,000 per lane per hour. You're already getting that massive increase, and you don't have any risk of traffic accidents and the kinds of bottlenecks that we see in reality today. Yes, there's going to be an increase on the roads from these technologies. It will come relatively slowly because unless we choose to devote a lane entirely to autonomy near term, which is possible but requires a legislative change at the State level, we're only going to see that full benefit kind of 15, 20 years from now. Whereas, we can get that shift in the rail side pretty much immediately. For those high-capacity backbone routes, rail is definitely the most energy efficient and actually still the fastest today. You could get from here to San Francisco—one thing I haven't talked about is the rail speed here is artificially limited by the Federal Railroad Association (FRA) because of the freight traffic, 73 miles per hour. If you look at a lot of other regions in the U.S., particularly on the East Coast, they've raised the limit to 110, 120 miles per hour. We're not talking High Speed Rail; we're just talking about a slightly faster rail than we have today. With electric trains, that becomes an option. Now, you're talking about here to San Francisco in 25 minutes. Unless we go all autonomous and decide to raise the speed limit as well with autonomous cars. If they're electric, it's okay. If they're not electric, there's a big hit on fuel consumption. We won't get to that kind of speed. Short answer is I think we need both. I think we should plan to upgrade our roads, but we shouldn't ignore the rail side because we already

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have it and it's a cheaper, closer-in solution than waiting entirely for autonomous vehicles.

Council Member DuBois: Thanks.

Mayor Burt: Vice Mayor Scharff.

Vice Mayor Scharff: I had some similar questions to Tom and to Liz. First of all, you said we're losing the edge. I read the same thing too, Florida. Should we be lobbying or doing something with our State Legislature about regulation of autonomous vehicles? What should we be doing so we don't lose that edge?

Mr. Heck: The California Department of Motor Vehicles (DMV) is the barrier here frankly. The rules they've issued require things that don't make any sense. Why should an autonomous vehicle have a steering wheel, have a brake pedal, have somebody always in the car ready to take over? Once the systems are safe, we don't need that. We're legislating to yesterday's technology. I would say yes, we should lobby. I also think we can host—if you looked at private areas, Moffett Field, Stanford Linear Accelerator Center (SLAC), they're already beginning to host autonomous deployments on private land. More of our employers could do that, and we can help create that environment. There's also opportunities to get exceptions for pilot projects. Now, the Federal government is actually encouraging that with the \$4 billion in grants that they just announced. There's an opportunity for Palo Alto to both lead the way directly as a City, but certainly also advocate for a change at the State level.

Vice Mayor Scharff: You also showed a slide where you showed public transportation as the cheapest, and then you had Lyft Line. I guess, when you said it was the cheapest, that was to the individual person who rode it, right?

Mr. Heck: Yes.

Vice Mayor Scharff: If you added in the cost of subsidizing—we subsidize all that—does that public transit become less cheap? Where I'm going with this, I'm thinking we're about to put on the Sales Tax Measure to spend \$1.2 billion, \$1.4 billion to extend BART. The question really becomes if you were to use autonomous vehicles or frankly even just Lyft and Uber and that kind of stuff and started subsidizing that—first of all there's the short-term investment of \$1.4 billion and then we spend all this money on buses on VTA. Palo Alto's looking at putting in a new shuttle system. If instead you spent that money on a Lyft/Uber-type model, have you done any work on whether or not which makes more sense?

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Mr. Heck: Yes. Not holistically for this region. There's some interesting economic examples here. One is—it goes back to Council Member Filseth's question. How much the public transit system is subsidized depends very much on how well it runs. If you look at San Jose, we've got 15, 20 percent fare recovery at best, so we're subsidizing 80 percent of every trip. If you look at San Francisco, it's sort of close to the national average of about 50 percent. If you look at Caltrain, interestingly fare box recovery is actually higher. It's in the 60s, so we're subsidizing only a small portion of it. Let me add a really interesting data point that people never think about. Indirectly through that dollar we spend as taxpayers, we're subsidizing the road network as well. Every person isn't individually paying the full cost of that system, not even with the gasoline taxes. If you run those numbers—there's some interesting research on this at the Federal level—it's about a 42-percent fare box recovery rate. The quick macro answer is yeah, if we've got a San Jose system, let's make it more efficient before we put more money into it, or let's make sure the improvements we're going to make really get that return in terms of the density and the routes. If we've got a Caltrain-type system, it's more efficient than subsidizing the road system. That's a macro answer. Let me give you a micro answer too. The answer is this is not monolithic. Remember I showed this sort of bull's eye, that the answer is different by region. I think if we're talking about the Downtown area is already close to the rail, to get those better connected, it's much cheaper to upgrade the existing rail system. For the areas that are too far from a rail system today, the areas out towards the bay or up into the hills, we should not try to build rail systems. We shouldn't try to add light rail. We probably shouldn't even try to build new bus systems, because the bus systems we have are already not heavily loaded. That's where the kind of system you described of—for the people who can't afford it, let's subsidize the Uber trips because that's actually the easiest way to give those people transit access. Let's not subsidize their Uber trip from here to San Francisco. Let's subsidize their Uber trip from here to Caltrain to then go to San Francisco. That's the only analysis I've done so far. The combined system always wins economically over running exclusively one or the other. Train everywhere is expensive. Car everywhere is expensive. It really is the right mode for the right trip.

Vice Mayor Scharff: My last question was you showed a slide with little portions of University Avenue becoming pedestrian zones. That's obviously been really successful in Santa Monica, Boulder, Miami. I'm sure there's a few other examples. Have you done any looking at if that would be successful in Palo Alto or any concerns people have with that?

Mr. Heck: I haven't done any modeling on that. As you just gave examples, it has been very successful in many places. The big concern usually is will it

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cause commercial business to diminish on that street. The data so far everywhere has shown that actually it increases because of the foot traffic. The people driving through University Avenue actually don't necessarily contribute to commerce. Proper work needs to be done really for our area to get the right (inaudible) and see what the effects would be.

Vice Mayor Scharff: Thank you.

Mayor Burt: Council Member Schmid.

Council Member Schmid: Just very briefly. Thank you very much. I would appreciate getting a copy of your slides, and maybe an email if we had some follow-up questions. One broad philosophical question. You are making the case that we're in a period of change where transit has to adapt, to move from single occupancy vehicles to a more mass-based thing. It could be argued, and it has been argued, I think, very effectively, that through the 19th and most of the 20th century, transit drove economic consolidation, economies of scale. Workers became more dependent on big employers. The revolution of Silicon Valley in essence was to give back to talented workers mobility. That's why it took place not in big cities, but in smaller cities. Your program raises the question of are you recreating some of that dependency?

Mr. Heck: As you said, it's a very philosophical question. One I appreciate. We're seeing a re-aggregation into many large tech companies in this space as well. If you look at some of the new technologies like autonomous cars or deep learning, the data assets, the computer assets are actually giving an advantage to the big players. This isn't killing the many, many small innovative startups that we have. I think the real question there is it's no longer just transit, because there are many factors now. The fact that VMT is going down because people are using online ways of communicating—I actually have done this. I've used contractors in Chile and in Egypt to do website design. I think that's an instance of what you're talking about. I don't need to be in a big city, I don't need to be in the hub to really participate in this economy. I do think we have that effect, and it's real. I wouldn't argue just that the transit system needs to evolve. I think the transportation system as a whole is evolving. The big changes I described of 100 years ago were really all forms of transportation, not just transit. Bicycles were invented around that same time. Electric street cars and automobiles came shortly thereafter. This is part of why I said we need to plan on an integrated basis. The employer evolution—the tech companies have a pretty good view of how much growth they'll have here versus in Asia versus elsewhere—give people that option to be close. If you talk to most employers and certainly Stanford makes this case, the residential experience

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of being together, working together, being in the same office still is a powerful effect even though I might telecommute two days a week and not have to go into the office. At the very macro level, cities have a huge advantage, and I mean cities of all sizes not necessarily just mega cities, in terms of the Intellectual Property (IP) creation, the job creation and the GDP growth. About 70 percent of the GDP globally is happening in cities. It's a massively disproportionate effect. I think we're pretty safe to bet overall that cities aren't going away, even mid-size cities. I do think it is important to think about is there just an aggregation of really big players or do we also need to think about the mid-size and innovative, and do we support infrastructure. I know there have been debates here about how do we connect every residential household in this City more into the economy, whether that's fiber or wireless links. I do think that's important, because the unknown quantity is here. How much do we completely do online? If we all start buying everything from Amazon and putting on our virtual reality glasses for travel, things could be very different than we're envisioning now. We're certainly seeing the beginnings of some of that. That was a philosophical answer to a philosophical question.

Mayor Burt: Council Member Berman.

Council Member Berman: Thank you very much. I've loved everything about your presentation and about the conversation that we're having. Some Colleagues know that a couple of years ago I gave a TEDx (a talk given in 18 or less minutes) talk on autonomous vehicles and the impact that I think they'll have on communities like Palo Alto. It started with the concern that we faced 2 1/2 years ago and that we still face today which is the resident frustration with traffic and the lack of parking and that kind of thing. You've given a great presentation on once those are all integrated, I really think it'll decrease the frustration in the community which will increase hopefully the willingness of our residents to do some of the things that you've suggested which is increasing density a little bit more, maybe going up a little bit higher in strategic corridors. I think all of those will play together and hopefully get us to a much more efficient community. It won't happen overnight, but I definitely have a lot of optimism, I think, for 15, 20 years from now. You were talking about the efficiency that we gain with autonomous vehicles and their ability to communicate together. I also just saw that—following up on Council Member Kniss' comments—some of the most entrenched, kind of incumbent automobile manufacturers are getting into this space. General Motors (GM) just announced Maven a couple of days ago, and (inaudible) car which had gone bankrupt a month or so ago. Google doesn't want to get into the car manufacturing space; that's not what they do. I think they're more interested in creating the technology and then licensing it out. I just randomly had a meeting at Google, I think it was the

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afternoon that DMV finally came out with their autonomous vehicle regulations or their proposed regulations a year after they said they were going to in the first place. They were—I shouldn't say too much. They weren't pleased. Hopefully there's still opportunity for us to maybe lobby our State Legislators on the opportunity to keep California at the forefront of embracing this technology. You talked a lot about the increased efficiency and 90 percent of traffic is caused by human error and that kind of thing, but it's also just the savings that we'll get in terms of fewer accidents means fewer injuries. The cost of insurance will go down, and all that. I appreciate that you're saying that we still need to integrate Caltrain and the potential for autonomous electric vehicles. I do think grade separation is still a major issue, unless you could see a model where the combination of autonomous vehicles would increase capacity that much across those at-grade crossings. I guess one question I'd ask you is to what extent do we need, if you've looked at it—how much adoption do we need of autonomous vehicles? I've talked to folks in the community who saw my TEDx talk, and they said, "You'll have to pry my old Ford from my cold fingers," or something like that. What percentage of adoption do we need to actually get these gains, do you think? Does 50/50 still cut it, that kind of thing?

Mr. Heck: I think it depends a lot on the deployment model. As I mentioned, there's a broad spectrum here of how autonomy comes in. If it comes in as a luxury feature on high-end cars, we need quite a lot of them to really make any significant difference. The near term actually will lead to increase in vehicle miles traveled, more sprawl, and there'll be a net negative. If they're not electric, that will also mean more pollution, more carbon. If we deployed them in this shared, in-fill, last-mile kind of solution to do the smart suburb, they can make a difference at low penetration. 15 percent of those vehicles deployed here throughout the City—let's say every neighborhood hosts one or two and I can call it up on my phone in two minutes, then I don't need to own a car. It would make a big difference with 10-15 percent. The other part I mentioned earlier is it depends on how much we create the right incentives. We've done a lot with electric vehicles here, because we gave them carpooling access, we gave them good parking spaces. Those are relatively cheap incentives. It didn't cost us that much. We already have the carpool lane; we just gave the EVs access. If we do the same with autonomous vehicles, we can get a bigger shift there faster than if we sort of sprinkle them throughout and treat them like normal vehicles.

Council Member Berman: This is great. Thank you very much.

Mr. Heck: My pleasure.

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Mayor Burt: Council Member Holman.

Council Member Holman: I thank you, and welcome. A question that might get one or the other or both of us in trouble here potentially at least. You said that VTA was one of the worst-performing transit systems in the area. Have you taken much of an interest or look at the Sales Tax proposal and what the expenditure breakdowns are? I think one of the other colleagues mentioned that 20, 25 percent on BART. We haven't got much success from that. Have you given much consideration of that? I would also say how much they're considering spending on roadways.

Mr. Heck: I haven't done any detailed economic modeling. I have an opinion which I'm happy to share, but it's not based on any kind of systematic analysis of the efficiency.

Council Member Holman: Happy to hear your opinion by the way.

Mr. Heck: I'm happy to share that even if it gets both of us in trouble. If you look at the actual commute patterns, they don't run from Oakland to San Jose as much as they run into the Valley and into this area. If you're looking at a trip from the east bay into the employment centers, we'd be much better off crossing the Dumbarton Bridge than going all the way south to San Jose and coming back up. That's one issue. If you look at most other cities, as I mentioned, they have kind of a hub and spoke, and then they have circles. You want some tight circles so that it's reasonably fast. You could go from Berkeley down the east side of the bay and then across, that would be a very, very efficient link. Also, if you were going to spend money on upgrading the system today, as I advocated for earlier, we should really be thinking about increasing the performance of the system we have rather than trying to build a new one. The areas that that BART extension goes through, we're making a huge bet that those will economically develop into big population and job centers. They're not actually to the same degree that we have existing job centers up and down the Peninsula. That's a high level comment on we shouldn't spend most of it on just BART or on just road infrastructure. We should really think about designing the system as a whole. In particular, we should make sure we solve the last-mile problems as part of it. We have a bad tendency—this is not just California but you see this across the U.S. We stop a little bit short of the final destination. Has anybody tried to ride Caltrain to get to the airport? It's a change to BART and then a change to AirTrain. We didn't bring the train directly into it. My favorite example is—if any of you have ever flown into Zurich, you land, you've got arrivals, departures and trains stacked vertically in the same building. It takes about a minute to go from airplane to train. That's the right way to interconnect modes. Hopefully one day we'll get there in San

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Francisco. Although, BART and Caltrain seem to be a couple of miles short of our new transit center there as well. Could we in the long run get San Jose to be that kind of intermodal center? Maybe. Similar to High Speed Rail, we shouldn't start out in the middle of nowhere—to open another really contentious topic—we should actually in-fill in the urban areas first, because it would offer immediate value and benefits. I would say the same here. Let's make Caltrain a lot better, and then let's think about interconnecting it, and do it based on the actual route and population rather than based on a particular Agenda for one kind of mode.

Council Member Holman: Appreciate your comments and your perspective, very much. One other question. We hear a lot about how people are using this or their laptops or whatever to order cars and shirts. I don't hear much about the societal aspect of how people need to see, hear, touch, feel, smell the things that they're buying, in other words the basic brick and mortar. That's also a cultural and a social interaction sort of thing. I don't hear anybody bring that into the discussion. Would you care to comment on that?

Mr. Heck: Again, that's a more philosophical question. I love going to Books Inc. because it's a physical book store, even though I do buy books on Amazon. I think that having that interactive space is really important. That's, in fact, one of the main benefits people have found of converting some high traffic locations into pedestrian zones, because you get even more of that interpersonal interaction. If you look at Santa Monica or any of the other examples that were cited earlier, that's part of what's happened there. They've become social spaces, not just public spaces. I think that's a very powerful dynamic. That actually leads to a better quality of life. I do think that we're not going to reverse the trend of people using their phone for more stuff. I mean, medical services, professional services, transportation access is migrating that way. I do think we need to think about what are the actual, physical spaces where teens can hang out, people can get to know each other, we can have public social activities as well. We need a balance of those two. I'm certainly not an advocate to move our entire lives into virtual reality and join the matrix. We wouldn't live in Palo Alto if we wanted that. You could live in downtown Tokyo or some place.

Council Member Holman: I appreciate that, because much of the time it does sound like in presentations that it is all going to be this, and that we're not considering the other component of this that we just talked about. Thank you.

Mr. Heck: I would say, in fact, the root is we need to think about the quality of the experience. The reason the phone has made a difference, it is much

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more convenient, much faster and actually a great experience to ride Uber versus taking a traditional taxi where you had to wait half an hour and you weren't sure whether the guy would show up. To your point, physical spaces, downtown spaces, public spaces, parks, all create those kinds of experiences as well. I love the fact that we have some of those resources in our community.

Mayor Burt: Council Member Wolbach.

Council Member Wolbach: First, Mr. Heck, I want to thank you for the presentation. Much appreciated. There are four areas where I'd be curious to get your input. If you want, I can go through them one at a time or just list them all.

Mr. Heck: Sure.

Council Member Wolbach: The first one is—maybe just to say thank you for the data that you provided on the trends towards flat-lining and declining vehicle miles traveled, car ownership, parking demand over the last few years and continuing into the future. As you're probably aware a lot of people don't really believe that that's happening, don't really believe that demand for owning a car is decreasing and that people given options many, not all, would choose not to own a car. The data that you provided is very useful. It also supplements something that our burgeoning Transportation Management Association (TMA), our TMA, found a lot of the workers in Downtown currently say, "I drive, but if you gave me a better option, I'd sure take it." Also, data collected in our recent survey in preparation for updating our City shuttles—we're looking at potentially small or large changes to that system particularly after some outreach by our Human Relations Commission to the senior community in Palo Alto where a tremendous number of seniors who prefer not to or cannot drive anymore feel even trapped in their homes because of the lack of transportation options. There's certainly many of them not driving. Not to say that everybody over the age of 65 can't drive. As Palo Alto continues to gray, the number of people in Palo Alto who would prefer or cannot drive will certainly increase. The data that you provided is a useful supplement to that as we continue to develop our understanding that indeed cars are not the answer for everybody. That's more just my own comment. Really, three areas of question. The first is on coordination. The second is on—I'm curious to hear your thoughts about the priorities that Palo Alto sent to VTA in preparation for the ballot measure and for consideration of big projects and the future of VTA. The third is about the idea of housing, specifically the Stanford Research Park. On the first, on coordination, we've got VTA, Palo Alto Unified School District, our TMA that is getting rolling, the shuttles that I

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mentioned, Stanford and some big employers in town. In the past I've advocated that we revamp our City shuttle system to create one unified system within Palo Alto, where you bring together the Stanford Marguerite, Palo Alto shuttles, taking kids to schools and employers and just create one, single unified system. I'm also open to other ways that we can combine systems and create a mobility as a service future whether it's through different systems that intersect efficiently or by creating a single unified system. I'd be curious if you have any thoughts about that, because we're going to be continuing that discussion this year. The priorities that Palo Alto sent to VTA at the end of last summer, in addition to a number of projects that we proposed, we highlighted four priorities as a Council. One was Caltrain grade separations and other Caltrain improvements. Two, bicycle and pedestrian service improvements. Third, first and last-mile service. Fourth, for VTA to start to play a better role to support TMAs and other transportation demand management efforts throughout the County, thus providing support for systems that they might not run themselves but might provide that cross network where you have service up on El Camino Real and up and down Caltrain and through light rail, but where you have these other connections that maybe could be providing first and last mile, even if they're run privately or by local cities. I'm curious if you have any thoughts on those four priorities, and if we should add or subtract or add new ones to that list as we continue our discussions with VTA in preparation for a potential ballot measure. As I mentioned before in my last question, I'm curious to hear if you have any thoughts on since you did mention the idea of changing how office parks work. As our Stanford Research Park has become significantly though certainly not entirely office, what kind of opportunities you might see for or if you've given thought to the future of interspersing some housing at smart locations in the Stanford Research Park.

Mr. Heck: Great set of questions. In terms of your first question, coordination, I'm a complete advocate for we should coordinate and treat this as a system. I argued for that earlier. In the world of app.'s, different modes are converging and available through one app. Certainly the more we can—I mentioned the county boundaries that are one of the main barriers for actually having an effective network. We need to think about this as a network. We need to structure it as a network. We need to coordinate the schedule. We need to make it easy for people to transfer from one to another and certainly to make sure that all of the information is available. If you said integrating Marguerite, Stanford shuttles, employer shuttles, linking that to Caltrain, I would wholeheartedly endorse that. Again, you want to make it very easy from a user experience point of view to say how do I get access, how do I get where I'm going. Most people actually don't care who's the operator of that link. It just needs to get me

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from "A" to "B," whatever mix of vehicles and modes that is. In terms of the priorities sent to VTA, I think I actually attended that particular meeting. Part of it was also making sure some of the money came back to the northern end of the County, which I wholeheartedly agree with because we have a lot of the population and a lot of the jobs here. Caltrain improvements certainly, as you heard me say earlier, is high on that list. I don't think we should monolithically focus on undergrounding as the solution. I think that needs to be looked at as an option, but it really is about making Caltrain work better for all of the communities that are strung along it. Safe grade crossings is part of that, but so is making sure that the last mile problems get solved. That ties directly to the other two priorities. The bike infrastructure, as I advocated earlier, we need to connect it across cities. We need to stop planning bike networks city by city. That's doesn't make any sense. We also need to stop planning it based on where bikes currently ride which is the data we're using, and actually look at the underlying demand for where bikers want to go which includes the shopping centers, the employment centers and so forth. Again, going back to the first idea, thinking of that as a network that cuts across jurisdictions, that's the right way to go, because I need to go from here to Google or here to Stanford and that needs to work as a network. I don't really care that it's Palo Alto versus Menlo Park versus Stanford. That ties directly to the last mile. I think the last mile is a really important priority. A lot of the lack of transit ridership and a lot of the congestion we're getting is because of last-mile problems. One of you mentioned the Downtown surveys. People would take other options if they had a way to connect to the last mile. Nobody wants to be stuck in a traffic jam on Highway 101. People actually prefer other options. You look at the tech employees; they're doing it as a productivity measure, not necessarily because of some philosophic conviction about sustainability. They're doing it because they save time. Let's make it convenient end-to-end. In terms of VTA beginning to think about collaborating and integrating, I think that's a really important role. I think ultimately it needs to go beyond VTA. We're at the edge of a County boundary. We can't afford for VTA to do one thing and San Mateo transit do something else. We need to coordinate that across, and Metropolitan Transportation Commission (MTC) has an important role to play but also do cities directly. I think that's critical. Coming back to your housing question, I made a case based on the data explicitly for co-locating jobs and housing near transit and near each other. The Stanford Research Park, while it was beautiful when it was designed in the '60s, is designed 100 percent automotive based on yesterday's best practice. How do we evolve it from that to add the transportation, the bike networks? As we've gone, as I mentioned earlier, from dangerous, toxic chemicals and true industrial uses to office buildings, can we blend those more, can we work at the edges? I think some of the projects that are happening now along the rail line there

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near the Stanford Research Park are a great example of redevelopment, Groupon and now the Fry's site. Those are huge opportunities, and also in the park. We still have the kind of classic big parking lots in front of isolated office buildings footprint there. That should evolve, and should evolve into the transportation networks too, both the University's but also the City's network. As somebody mentioned earlier, land use changes are slow. They're going to take 20 years, but I think we can very much head in the right direction. That's another place where small changes in height, small changes in density can over time actually make a big difference. Again, carefully; we're not talking about putting toxic waste near residences. There are places where you want to keep those boundaries.

Mayor Burt: I just had a few final thoughts. One is having listened to a lot of what you had to say, I think that part of what we need to move toward is both a new calculus and a new nomenclature for some of what we're talking about. We talk about a last mile. That's really a walking mile. As we have various new modes of electric bikes, electric scooters, our folding bikes, it's not a mile. If we were talking a mile walking, then it's maybe 20 minutes. It's a last 20-minutes of whatever mode we use. You were alluding to that when you were saying the distance if we use electric bikes is routinely different from if we have pedal power. I also just wanted to bring up, when we talk about locating whether it be jobs or housing near transit, a study that we received a number of years ago but registered a lot to me was that at least at that time the trip avoidance as a result of having housing near services, say, living Downtown and walking to services if it is Downtown that has the services, outweigh the trip reduction 2:1 over the use of transit even though transit was certainly higher by those who lived or worked Downtown. When we rezoned our California Avenue area, we invented a new term of Pedestrian and Transit Oriented Development (PTOD). We had a battle back and forth on the naming. Staff said Transportation and Pedestrian Oriented Development (TPOD). No, put the pedestrian first. Also from a marketing standpoint, we saw pushback in the community who intuitively actually knew that same thing, which is you may use more transit, but you want to double the density. That doesn't net out as fewer trips to and from that Downtown area. When you add in the pedestrian, it did. That resonates more with people because that's something they feel better about. I was taken by your points about the prospect of really seeing a reduction in our cost of mile travel. That's fascinating. If we combine that with what we're starting to see as a leveling of the cost of electricity—some experts are now predicting a future decline in the cost of electricity—that's really a fascinating model where we may be seeing that the more sustainable future is lower cost in those regards. We get so much pushback under assumptions that doing things that are more sustainable will necessarily be at higher cost. Here in Palo Alto, we now have 100 percent carbon neutral electricity at more than

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20 percent lower costs than the investor-owned utilities like Pacific Gas and Electric (PG&E). We certainly have as strong of an economy as we want, so there's not much of an argument against those directions. You also mentioned about integrating the transit systems. Our neighboring partner here, Stanford, has the best private-public bus system locally. They've now extended it outside the campus, but it's not really integrated in any way. We have the Marguerite system and we have the VTA and we have the Palo Alto shuttle and we have Caltrain. I think we've got to come to a point where we are having at least one system here if not one system in management. We tend to talk about things as alternative transportation, but a lot of this is not so new. A hundred years ago in Palo Alto, we had an electric trolley system running from Waverley Street up University Avenue onto campus. Lo and behold, we had a shared electric transit system between Stanford and Palo Alto. Maybe we have that kind of collaboration on the horizon. One other thing is on the calculus of the benefits. You talked about looking at that commute time that people look at. It's door-to-door time that's a great deal. My wife is the one who finally got us to switch 2 1/2 years ago. She just said, "I'm not driving Downtown anymore. I go around looking for a parking space, and I could have just ridden my bike and parked in front of wherever I was going." Now, neither of us drive much at all in town. It's like 10 percent of the time. People go, "That's commendable you rode your bike." I said, "I might have driven, but I didn't have time." That's a shifting mindset. Of course, that was compounded by our worsening traffic. Really we need to add in not only the door-to-door consideration, but the other factor that tipped it for me was trying to fit in the time to go exercise. I literally had a bike at work, and I'd go from California Avenue at midday or in the evening, go do my exercise riding. Now, the transportation riding and the exercise riding are one and the same. Perhaps for many people—it certainly was for me—it's door to door and then subtracting the gym time or the recreational exercise that I otherwise would be doing. When you look at that, you go, "Wait a minute. I was making wrong choices for my own ease, benefit and time efficiency. I just wasn't calculating things correctly." How we create those models and get that just enlightened self-interest out there more, I think, is part of our challenge. Anyway, you've really offered us a very thought-provoking presentation. I think we and the audience greatly appreciate your working together. I mentioned to you in our call earlier that we've had facilitated through Friends of Caltrain kind of an Independent Study Group that has been going off and on for a number of years, thinking differently about how Caltrain and other transit-related areas can be run more efficiently. You added some new thoughts to that, that I'd love for us to bring you into that conversation and various others. I hope that we can continue to have you as a valued member of our community of experts who really make this community rich and make the Palo Alto process something not pejorative but enriching.

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Mr. Heck: Thank you. I will continue to be part of this community and delighted to continue this dialog and help in any way I can.

Mayor Burt: Thanks.

Mr. Heck: Appreciate the time.

Mayor Burt: Appreciate you coming.

Mr. Keene: Mr. Mayor, if I could just add. Stefan's been obviously not a—I mean, the work he's doing at Stanford but just a great volunteer citizen. He's supported us at the Staff level and through the Lane Center for the American West, working with City Managers up and down the Peninsula and has always been at the ready in any way to help us think about the future and how to get there. I just want to personally thank you for always being willing to volunteer. Thanks.

Mr. Heck: My pleasure. Thank you.

17. Study Session Regarding Ongoing Preparation of a Sustainability/Climate Action Plan (S/CAP) to Update and Replace the City's 2007 Climate Protection Plan.

Mayor Burt: We invited Stefan here really to help us kick off our next item, which is a follow-on from the community summit that we had on our Sustainability and Climate Action Plans, really our next generations of those plans, that was held yesterday. We had in the neighborhood of 300 people attending. We had to cut off sign-ups on the Thursday because of just limitations on the venue. It was a really great event. I think pretty much all the Council was there. We certainly gained a lot. It was an agendaized Council meeting so that we could all attend and participate and really to be informed by the discussions that went on there and to get our blood flowing on this topic and hear a lot of incredibly great and insightful thoughts from the community and speakers. Having said that, I want to turn over the meeting to Gil Friend, our Chief Sustainability Officer, to kick off our next item which is a Study Session regarding ongoing preparation of a Sustainability and Climate Action Plan, to update and replace the City's 2007 Climate Action Plan and, I will add, our 2003 Sustainability Plan. Gil, go right ahead.

Gil Friend, Chief Sustainability Officer: Mayor Burt, thank you. Good evening. Good evening, Council Members. Thank you for taking the time for this Study Session. Before I begin, I want to introduce Betty Seto, to my right. Betty is the Director of the Sustainability Division at DNV GL, an international consultancy, who has been our senior consultant and partner in

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the work that we've done on the Sustainability and Climate Action Plan to date. I also want to thank Professor Heck for sharing his time with us and for providing some of the context that, I think, you now see is in the work that we've done on the Sustainability and Climate Action Plan (SCAP) and a glimpse of the pattern and the logic of the future that we're moving into, the future that we face. You'll see a number of themes that echo here. I also want to thank you again for all of you joining us yesterday on a Sunday afternoon with more than 300 of our community members. Mayor Burt, I want to point out that we actually didn't turn anybody away. We had 100 unregistered, walk-ins who we accommodated in a very rich discussion throughout the afternoon. For those of you who weren't there, we had a presentation from Colonel Puck Mykleby, United States (U.S.) Marine Corps Retired, talking about national grand strategy, sort of the economic and geopolitical considerations of climate facing the nation and how those connect with local concerns and our local opportunities. We introduced the folks present to an overview of the developing SCAP, and then spent a couple of hours in small-group discussions looking in detail at the issues that are before us. Just some pictures illustrating some of what happened. Very engaged throughout the afternoon. We are in the process of digesting all the notes from 40 different tables of conversations. We don't have those ready for you yet. You can see some of the themes that people were talking about. Many of them echoed by what Professor Heck was talking about this evening. Three summary graphics that you have here, what people saw as critical criteria of success. How Palo Alto can continue to lead the way building on what I thought was decades, but in fact is more than a century of leadership on these areas, and some serious conversation about the obstacles and constraints and challenges that we face in bringing this future to bear. For me, one of the key lessons to draw from Stefan Heck's presentation is the challenge for us of planning our future based not on the past trends that we're familiar with, but on the emerging trends that we're facing. It poses a very serious challenge for us that I don't underestimate. We need to make some big decisions in the face of some uncertainty. We don't want to over-invest in the wrong things or under-invest in the right things. It's not easy to know what those are. I think one of the challenges that I encourage us to think about throughout that process is how we find flexible platforms, so we can take steps in what we think is the right direction, test them, learn from them and revise them, but not make big bets in a potentially wrong direction. As we've talked about before, we have had some sterling accomplishments around sustainability in general and climate in particular. We've reduced our emissions about 35 percent since 1990, kind of a stunning accomplishment in 24 years. As Jim Keene has pointed out, most of that reduction has happened in the last nine years. As we look forward to 2030, the target date of our Comprehensive Plan Update, I think one of the questions to think about is how much can we do in the

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next 14 years. Could we match what we've done in the last nine or match that rate of change and bring us to a fairly dramatic improvement in our emissions? California has set a course of reducing emissions 80 percent by 2050, an intermediate target of 40 percent by 2030. We're almost at that 2030 target already. We can continue the trend that we have been on which—sorry, we've got some numbers cut off there—could take us to probably about 50 percent by 2030. We can follow a business as usual course. This is the current estimate in the Comprehensive Plan that takes us to about 40 percent by 2030, not a whole lot of change in those next 14 years. We could target the 80 percent goal that the State of California has set but target it 20 years early, moving from the 35 percent we are now to 80. As you know from our prior discussions in the course of work that Betty and our team have done, we've looked at three different scenarios of different rates of reduction. What we'd like to discuss with you is this one in particular, 80 percent reduction by 2030. We've done as, Mayor, you've pointed out carbon neutral electricity over the past few years. We have the opportunity of stepping next to a carbon neutral utility as we look at the electrification strategies and moving out of natural gas. At some future point, perhaps we can be a carbon neutral City. There are none yet on the planet. There are cities that are talking about that. Palo Alto is probably poised more effectively than anybody else to do that. I want to suggest that even though we're talking about sustainability and climate, that's not really what this conversation is about. We tend to think about sustainability and climate as constraining impacts that we need to reduce emissions that we need to reduce. I think you've heard from Professor Heck that this is really a conversation about opportunity, about innovation, changes that are coming in the economy that we can either ride or enhance and use to our advantage or ignore opportunities to redesign the systems that we live in, reinvent the ways that we do things, and develop solutions that are better, better performance, safer for our people, more economical as well as more sustainable. The question came up about the tradeoffs between better environmental performance and better economic performance. It's a false notion. Done well, this is solid investment strategy that produces clear benefits and financial returns and multiple dimensions of return. I hope Stefan's cogent and clear and detailed presentation has given you a sense of that and the value of sustainability, not just as a philosophical goal but as a lens through which we can look and identify opportunities that we might not see otherwise, that might not be evident in purely financial analysis or demographic analysis. The ecological dimension and the system dimension that Stefan talked about, I think, opens up some insight and new opportunities for us. What I'd like to do at this point is ask you, since you were all there yesterday, most of you for most of the day. You heard the presentation that I gave that summarized where we are with the plan at this point. Would you like me to go through a very brief summary of what I

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presented? Would you like me to do a full summary? Would you like to just dive in with the questions that you have based on the Staff Report that you've read and the conversations of yesterday? What would be most productive for you?

Mayor Burt: Colleagues, I wanted to get a sense from you on how you would like to spend this time. Would we like to see some of the presentation that was given yesterday or do we want to dive into our own discussion and feedback? Council Member Wolbach.

Council Member Wolbach: Speaking only for myself, I don't feel a need to go through the presentation we already saw yesterday. You did a great job with it then despite the mike troubles. I'd be happy to jump right into having us maybe recap our reactions and ask any follow-up questions. That's just my two cents on how we proceed.

Mayor Burt: Let's put that on the table, and have people speak if they have either a dissent or a variation on that that they'd like to toss out. Council Member Kniss.

Council Member Kniss: No dissent and no variation.

Mayor Burt: Council Member Holman.

Council Member Holman: I have a question. The event was not broadcast, and we were all there. I can see some of the people here were there yesterday. It was not televised, so if we just jump into questions, those people who are watching from home or listening from home won't have the benefit of that discussion who weren't also there yesterday. It was in competition with some significant football games. I guess my question is if you were to do a brief overview, how long would that take you?

Mr. Friend: Probably about 10 minutes.

Council Member Holman: I would suggest we do a brief overview at least.

Mayor Burt: Vice Mayor Scharff.

Vice Mayor Scharff: I was going to say something similar to Council Member Holman. I actually was going to hope for more like a five minute presentation that hits the highlights. Also, ask the questions of Council that you would like us to hit with feedback. I mean, you have the whole SCAP Staff Report here. It raises a lot of questions. I think it would be helpful to say what kind of feedback you're looking for, what kind of direction, how Council Members feel about things.

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Mayor Burt: Unless we have a strong objection, let's go ahead and do it along those lines. Take a maximum of 10 minutes, not necessarily to go through every slide, but to give the highlights. In particular on the slides or discussing the areas that we as a Council really need to begin the process of our discussion with maybe a—Gil, why don't you add very briefly what the current thinking is on the sequence of events that we may have in the months going forward until we get to the point of having adopted our next Sustainability and Climate Action Plan.

Mr. Friend: Let me start with a summary of the conversation yesterday. I think I can do that in about five minutes. There's more detail if you'd like to dive into any of the specific elements of that. Second, speak to Vice Mayor Scharff's question of what we're looking for from you. Third, talk about what the plan that we envision going forward is. Does that make sense? This waterfall chart summarizes where we think the greenhouse gas emission reductions could come from to bring us to an 80 percent reduction in emissions by 2030. Now let me caveat this in a couple of ways. This is based on a model that is based on assumptions wherever possible based on real world data, but the data is not available for everything that we're looking at. For example, the mobility as a service work that we've talked about before and that Professor Heck referenced, there's not a lot of academic data on that. Where we didn't have data, we were very conservative. I think we've actually understated the potential impact of what you've heard about tonight. You can see that electrification of the vehicle fleet is a very significant contributor. We're looking both at vehicles owned by Palo Altans and the vehicles that people are driving and to commute with. This is an area where we have a very limited amount of influence and control. A lot of this is going to be driven by the trends in the larger economy, the economics of electric vehicles. We expect to see from companies as different Tesla and General Motors competitive electric vehicles within a couple of years. That market's going to shift rapidly. We do have some influence in terms of the charging infrastructure that we provide in the City that makes it convenient for people to drive here and confidently know that they can drive home in what are currently range-limited electric vehicles. Encouraging all electric new buildings, that's part of the electrification strategy. When I say encourage, let's be clear. There's a range of opportunities available. We could encourage through education and exhortation and marketing. We could encourage through incentives and other kind of support resources. We could encourage through policy and mandates. Those are some of the options that you will need to consider as you think about how you want to pursue this. We believe from the electrification analysis work that we've done so far and some of the trends that we're seeing emerging that there are strong cost-effective opportunities for moving our building stock in that direction. In this case by new buildings

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but also renovation opportunities across the range of electrification options. With regard to transit, we could potentially provide universal transit passes to our residents or ask our employers to provide them to their employees. It's a way of starting to shift the subsidy from subsidized free parking for single occupancy vehicles to something else. I think there's a general logic here of if we're going to invest public dollars, let's invest them in things that we want to see more of, not the things we want to see less of. We've been on record since the Comprehensive Plan (Comp. Plan) of 1998 that we want to reduce our dependence on the automobile, and yet we provide incentives for more driving in contrast to many of our neighboring cities. The revenues that we could realize from fee for parking could be one of the resources that we use to invest in the alternatives that we seek to develop. Electrifying residential water heating cost-effective today, Palo Alto utilities is beginning a pilot program to explore the most effective and economical ways of working with residents to change out their systems. We're in conversation with colleagues in Boulder and Denver who are looking at a bundled service offering that combines home energy audits, retrofit of the building, replacement and upgrading of appliances, solar on the roof, electric vehicle in the driveway with on-bill financing for no upfront cost and a total cost equivalent or less than what they are paying for the current house and car. There's some creativity that's possible there. If we combine that with things like the predictive analytics that Boulder is looking at, using building and permitting data to identify where are the properties where there is likely to be, say, a system failure of gas water heater. We know their typical life is 10-15 years. We can identify to some degree of accuracy where they're likely to go out, and then we can target our utility marketing very actively at those folks saying, "Instead of waiting for your water heater to blow out and you have to replace it in a hurry on a weekend, we have a program that will take care of that for you," with targeting, vetted contractors, financing in place, pre-permitting, and so forth. We can conceivably get a very high rate of replacement as the stock basically turns over in the course of 10-15 years. I've mentioned pricing parking. We have a number of other electrification strategies that have different degrees of impact and different economics. There's another chart that you've seen in the Staff Report that looks not just at the greenhouse gas reduction contribution from different strategies, but the cost, cost per ton of what's called the mitigation cost. We can combine the things that have the biggest bang as well as the ones that have the best bang for the buck. Growing ridesharing services, as I said, I think is severely underestimated here. Expanding bicycle infrastructure is probably underestimated as well. The zero impact housing touches on the question that Council Member Wolbach asked about where we might fill in housing and bring housing closer to jobs. Obviously it's a sensitive topic in the community. There's a lot to talk about there. What we've done here is model what kind of results you might get with different increases in

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improvements in job/housing ratio. This particular set of assumptions winds up with an 80 percent reduction, about 20 percent left over of remaining emissions. Those could be offset if we chose to do that. Again, a controversial subject but certainly something that's on the table. The model that we've built behind this enables us to dial assumptions up and down. We're happy to go through that with any of you that are interested. If you think, for example, there would be less impact from Electric Vehicles (EV), we could dial that down. If you think there'll be more growth in housing, we could dial that up and find, both in terms of the model and in terms of your sense of what's politically and economically realistic, a mix of strategies, a portfolio if you will, that can get us to the goals that we want to get to. Specifically, we focused yesterday at the Summit on three primary areas: transportation, electrification and water. Transportation and electrification because they are the lion's share of our greenhouse gas emissions, about 85 percent between the two of them. Water because it's just front of mind for all of us with what we call the current drought and what we wonder might be a longer-term shift in the hydrological regimes in California. You can see some of the strategies on the screen here related to each of those. We've got about 10 or 12 other areas that we've looked at in the plan ranging from buildings to municipal operations, adaptation and resilience, the future of Palo Alto Utilities and a number of others. Our focus yesterday was on these three with the expectation that we'd come back and dive into some of those other topics in future conversations. You might identify in your reading of the Staff Report that there are really kind of three core moves in most of the things that we've talked about reducing certain things, like reducing Vehicles Miles Traveled (VMT), reducing excess energy use, shifting what we do, shifting from natural gas to electricity, shifting from internal combustion vehicles to electric-powered vehicles, and transforming with some more of the kind of systems approach that Professor Heck talked about. Mobility as a service would be an example there of a systems transformation that would generate a large shift. There's a lot of pieces here. We can talk about all of them in some detail. I think there's some basic strategies to keep in mind as we think about how do we plan and make big decisions in the face of uncertain times and emerging technologies. I would suggest that these would be worthy of our thinking about setting strong, clear directional goals. Where do we want to go? That's one of the questions to you, Vice Mayor Scharff, for tonight. Articulate clear principles and criteria. Shared understanding of how we will evaluate and judge and select the options going forward so that those are explicit and understood in the community. Flexible platforms, as I mentioned before, that take us in the right direction and give us leeway to adjust course as we go. Great example there, you were talking about the County Transit Tax opportunity. I think you heard Professor Heck talk about the value of not investing in expensive, fixed infrastructure transportation systems that are hard to adapt as patterns

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change. Rather than lay down highway and rail, can we do something where the system lives in the vehicles and the network rather than in the infrastructure that's fixed? We do a good job already and, I think, have an opportunity to do a much better job of rapid, agile prototyping, doing short learning cycles. Jim Keene talked yesterday about tactical urbanism, an opportunity to do quick experiments. Instead of planning for a year and pouring concrete, we could plan for some months and paint stripes on a street on a weekend and see what happens. Watch and then learn and then take the paint up, and do it differently next time. I think if we can find ways to do learning cycles that are measured in months instead of years, there's a great opportunity there for us, mirroring what the companies in this region do and how they operate and learn fast and pivot. Finally, we need timely and transparent performance tracking so that we as Staff, you as Council and the community as a whole can see how we're doing and not just depend on Annual Summary Reports, but have real-time data. We'll be deploying the sustainability dashboard that we have built with your support over the next month or two as the beginning of that. I think, in summary the questions are shall we become a carbon neutral City or even a net positive City. To do that, we need to drive radical resource efficiency. That's the resource productivity that Stefan Heck talked about. Really key—I think many of you have echoed this—is if we want to shift transportation behavior, we actually need to make it more convenient for people not to drive. This is not going to be achieved through punitive actions, nor should it be. This is carrot rather than stick. If we can make it more convenient for people to not drive, they're going to do it. If we don't, there's no amount of incentives that will persuade them to. We can accelerate our building stock upgrades. Peter Pirnejad is here tonight, and the Development Services Department have done a sterling job in developing Green Building Ordinances for Palo Alto that are ahead of the already nation-leading California building standards. I think there are ways that we can accelerate that cycle and upgrade our building stock and put money in the pockets of our residents. We've talked about shifting from natural gas to electrical systems where that's feasible. We have great opportunities to embed sustainability into the operations and management of the City, ranging from how we do capital investment, how we measure performance, how we drive the upgrades in our buildings. We've already taken some small steps in that, for example, with our prioritization of electrical vehicle purchases in the City fleet, which we think will save about \$5,000 per vehicle over the lifetime of the vehicle, even though they still cost more today, first cost. Big opportunities which I'd like to focus on in a future Study Session with you to talk about adaptation and resilience. How do we deal with what are now inevitable challenges of climate change that we will face? Sea level rise of perhaps a couple of feet by mid-century, perhaps as much as five feet by the end of the century according to one set of estimates. We don't know how big that

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will be. How do we understand and protect and adapt and, in some cases, perhaps retreat as we face those rising conditions of rising water, but also the health considerations of rising temperatures, and the other challenges that climate change will mean for us. Finally as I said before, we need to reduce the subsidies to the things that we don't want. We should look at pricing carbon. Actually we could add it to our financial management in the City. Microsoft, 400 other companies and a couple of dozen cities are already looking at that as part of their financial management tool. There are ways that we can use these techniques to channel both local and internal investment. As you well know, renewables are a rapidly growing financial category in the world. Clean tech as well. There's a lot of money interested in the kinds of innovations that we're talking about. If we're creative, we have multiple ways to pay for, to invest in the future that we want. To your questions of what we would ask of you, let's set a goal. I'm suggesting 80 percent by 2030. You may choose a different one, but let's pick a direction and pick a goal and challenge our Staff and our community to innovate to meet that. Let's adopt a Climate Plan as a framing strategy. I think one of the choices for you here is do you want to have a fully articulated strategy with a clear Multiyear Implementation Plan of what all the measures are, which is one way to go. As our friends at Fort Collins, Colorado, have done who have also set an 80 by '30 goal, they've adopted a goal and a set of principles by which they'll make decisions. They're planning to then develop the specific strategies. It's two different approaches of different levels of detail, and that's going to depend very much on your comfort of how you want to strategize and implement. I think if we can set a goal, establish Guiding Principles, direct the Staff to come back with specific, engineered and priced-out strategies, and then move forward and revisit this every five years as conditions change and as we learn, that may be a way to go. What I would ask of you here is to think about the goals that we want to set and the criteria by which we will decide the steps that we'll take. Some of them will be economic, but they're not only economic. Some of them are going to be moral decisions. Some of them are going to be gut decisions. Some will be a combination of those. I'd like to understand your inclinations and your comfort levels with that. With regard, Mayor Burt, to the process going forward, what we would envision is perhaps a series of Study Sessions with you. Tonight being more of an overview of the overall approach, and future Study Sessions that could be deep dives into specific issues. Perhaps an evening spent focused on the transportation alternatives that were so well keyed up today. Perhaps another on electrification, and another on adaptation. At some point in that process, come back not in a Study Session but with an Action Item to make some fundamental choices about goals, criteria and the key initial moves that we'll choose to take over the next two to five years, the part of the trajectory that we can see relatively clearly.

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Then take that as the first steps, and then general direction about what the next five to 15 years might look like.

Mayor Burt: Before we have an opportunity for questions from Council and then hearing from the public, this all spoke about our Climate Action Plan. This is our Sustainability and Climate Action Plan. I want to make sure that we're not treating the one as if it's synonymous with the other.

Mr. Friend: Thank you for making that clear.

Mayor Burt: Sustainability really is the superset. Climate action in today's world is a very dominant set of what sustainability is about, but we haven't really even talked about what defines sustainability, nor what are the major dimensions of sustainability, and then how they relate to climate action. Just to kind of get people thinking about this, if we think about water and it's dimension and sustainability, it not only is critical in and of itself, but it intersects with all these dimensions. We have water as an essential resource for our survival directly; as the driving force for our food supply; as nearly 50 percent of our clean electricity, carbon-free electricity supply; and with climate change as a threat from flooding and sea level rise. It's a climate impact as well. If we didn't have climate change as probably the greatest challenge of our era, we would still have water as a critical sustainability issue. Similar arguments can be made around transportation. Transportation is the largest single, certainly remaining component of our carbon emissions, but it's a sustainability issue independent of its carbon impacts, not to mention its air pollution. It's a quality of life and an ability to sustain quality of life issue. Before we go down a path of ...

Mr. Friend: If I could, I would just add to that there's also the natural environment, our open space, our ecosystems, our soils, our biological resources, and yes, other things we could add to this list. Thank you for calling that out.

Mayor Burt: I brought up those two because this presentation really didn't talk about sustainability other than the portion of it and the major portion that is around climate impacts. Gil, why don't we take a moment and make sure that we calibrate the discussion around what this is titled, which is our Sustainability and Climate Action Plan, and a reminder that we have a foundation of a Sustainability Plan that was, I think, officially adopted in '03 that went through a two year process leading up to that. I want to make sure that we look at both of these, in their own dimensions and how they intersect with one another.

James Keene, City Manager: Mr. Mayor, may I just add to both of your comments? I think those are good points. I think it's going to be very

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difficult for us to really make the jump to light speed and kind of be able to grasp the Sustainability and Climate Action Plan right now or even next week. I do think we need to put the components of it out there. This is as much a process that we're going to use to actually identify the process for coming to understand what components we want to have in the Sustainability and Climate Action Plan. I just want to express a couple of my thoughts about our City in comparison to others. It's just my perspective. On the climate action side, we spent more focuses you've acknowledged on this. I do think we ought to think about adopting a target even if it's a straw man target for the nearer term, to at least focus the implications of different choices that we make, even though we could change that down the road. Even when we look at climate and then when we look at these other questions, I mean the question is what do we want to achieve, why do we want to achieve it, how are we going to achieve it, and when are we going to achieve it. All of those things, I mean, they have technical issues. They have cost, feasibility issues, and they have political and behavioral change challenges. I think the good thing about the Climate Plan is it is pretty easy to quantify what, at least, progress can look like. My own view is 80 by '30. When you start to look at this waterfall chart, it starts to break out pretty clearly where the key leverage points are. Now, the question is still when's that going to happen or what do we need to do in order to achieve that. It's going to be a challenge. The sustainability piece is in many ways much bigger and more complex, and we haven't begun to flesh that out. I mean, we can identify electrification of vehicles. We can suddenly see put all of that together, it looks to me like that's almost half of what we need to do to get from where we are right now to 80 percent. There are some things that we can do that may affect the speed of when those things happen. Most of that's going to be outside of our control. Those are going to be market forces that are going to happen, whatever. On the other hand, we also have limited capacity in the time of the community and the Council and the Staff to focus on what we're going to work on to achieve different changes. We can't simultaneously work on every issue, so we have to have some way to assess how we're going to spend our time. It's clear, like in the transportation, as we were talking about here earlier, in many ways the bigger question is how do we reduce vehicle miles traveled, how do we reduce congestion, and how do we improve quality of life. That's more challenging than how we reduce the carbon emissions of our vehicles. I just think that our City is for the most part not the kind of place where we would default to adopt an aspirational goal without really starting to talk about what it might take to actually get there. We do want to have a basic idea what it's going to take. Somehow I think we've got to get to that part of the conversation earlier than later, even though that probably needs to be modified over the course of this year as we move towards what you ultimately want to adopt and where the components are.

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Mayor Burt: Just if my colleagues will allow me for a moment. I think that as I tried to use in those couple of examples in water and transportation, that as we dive deeper into this, we see that there is a great deal of interconnectedness between measures that make our community more sustainable and those that will drive us toward our climate action goals. We just had this very provocative and interesting presentation by Professor Heck. If we look at the things that he talked about in transportation, he was focusing principally around transportation in ways that would create a more sustainable community. The vast majority of those measures, maybe all of them, would have significant impacts on reducing our carbon emissions at the same time and contending with the consequences of climate change. What we've talked also—here's the third dimension that we need to be talking about here is not only climate action in terms of our responsibility for reducing our carbon emissions, but our responsibility to our community to adapt. Those elements, for instance, intersect greatly with the water issues and others. Finally, just to frame this for our own consideration, the fourth dimension that I think we should be thinking about is why we should make such a commitment toward being leaders and being a model in each of these areas. One is a social responsibility. I think the more compelling one is that we as a City have been leaders, and as leaders we're models. It's not for purposes of self-congratulation that we point this out. It's to recognize that our impacts have leverage far beyond what we do within our boundaries as a City. That's the most significant impact that we have had as a City and continue to have, whether it's all the way down to our Safe Routes to School program, which has had one of the strongest programs in the Country. That has leverage; that is saving kids and making better communities elsewhere as well as here. I just want to encourage us to kind of think about those four buckets of our climate action, sustainability, climate adaptation, and how those other three things we leverage them and have impacts far exceeding what occurs within our own community.

Mr. Friend: If I may, I would add a fifth to that which is to do all those in a way that has clear and concrete impacts on the quality of life of this community and the people how live here.

Mr. Keene: Let me just say one last thing. (Crosstalk).

Mayor Burt: I'm sorry. I'll just say that's embedded in really the sustainability concepts.

Mr. Keene: This is called a Sustainability and Climate Action Plan. It's not an aspirational plan, even though there's a target and there's a—I mean, it's an Action Plan. I think if we think about what are the actions that we can take and how do we start to sequence and bundle those actions with some

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way to identify the return on investment we think we could get and begin to start acting on them, if it's within a five year timeframe, we can set a five year horizon within a 15-year plan if we want. It doesn't matter; we're going to have to make annual decisions in every way on what we're going to work on. We're going to have to assess our progress on the way. I think it would be a mistake to think we could choreograph the entire chart and sequence between now and 2030 about what we're going to do. I think we need to think about what we do want to achieve, and then start really identifying the actions and find a way to start to bundle them and commit to acting on them, and then monitor our progress all the way. I think it'll make it easier, or else we'll debate the plan for the next three or five years.

Mayor Burt: Absolutely agree. You don't score many touchdowns from your 10-yard line. Get across midfield, get into the red zone, and figure out how you get across the goal line from there. If it's all right, I'll go ahead and go to the public. I have five speaker cards. If anyone else wishes to speak, please come forward and fill out a card. Our first speaker is Jeralyn Moran, to be followed by Sven Thesen. Welcome.

Jeralyn Moran: Hi, good evening. I'd just like to say quickly Sven Thesen has had to leave to go pick up his children, so he won't be here. I do thank you, Mayor Burt and all of you Council Members that were at the Summit yesterday. It was, to me, a really successful and an encouraging event for me as a community member. I'm here tonight to talk to you about our commitment to climate change. I applaud you for looking at this comprehensively, meaning transportation, housing and our energy use altogether, because they are so intertwined (sic). I think you would agree. I feel like it's very important for you to remember that we have to take thoughtful but speedy action starting now, not just waiting and looking way far ahead in time. I just want to remind you of the urgency of this crisis. I just want to ask you to consider two areas I feel that are important for you to look at further. Adjusting our City zoning laws. I think we've all talked about these. I'm just basically repeating some things. To build smaller and denser housing in concert, like I said, with strong public transportation. I guess I'm here to repeat that. Also prioritizing funding for greenhouse gas emissions, to reduce them, that should be our top priority. My concern is that on the table especially for this tax coming up, there's still in the plan money for widening highways and roads. I feel that all the decisions to emphasize greenhouse gas emission reduction and, of course, maintenance of the roads that we have now, to maintain their integrity for all the modes of transportation that we're trying to move toward. I appreciate you as a Council and what you're doing. I look forward to an exciting year ahead. Thank you.

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Mayor Burt: Thank you. Our next speaker is Sven Thesen, to be followed by David Page. Sven had to go. David Page to be followed by David Coale.

David Page: Hi, everyone. Thanks for listening to me tonight. I've been a Palo Alto resident for over 20 years, and I've never come to one of your meetings before. You've got some long meetings. It seemed like, just first impression.

Mayor Burt: You lucked out on a short one.

Mr. Keene: We didn't actually stop last (inaudible).

Mr. Page: Anyhow, part of why I'm here is I noticed something in the *Weekly* about the sustainability meeting yesterday. That really caught my attention. I went to it, and I've got to say I was really impressed with the plans. Kind of like the presentation you heard here tonight, thoughtful, comprehensive. Part of the reason that I haven't come to any of your meetings before now is I worked in City government for 25 years before I retired. I'm a little skeptical about things getting done. I've seen lots of good words and good plans, action taken to grab the low hanging fruit. I've also seen lots of delays and obstacles. Anyhow, I'm here to advocate that we set a stronger goal about climate change, a faster, more powerful goal. We could, let's say, be the first Carbon Neutral City in the world. How about that as a goal? How about we do that in five years? Not in '29, '39, 80 by '90 or 20 by '30. How about just get it done right away? That's easy for me to say. I'm not a City Council Member. I know you guys got to do the dirty work, figure out all the details and who's going to do what and when. Anyhow, just my two cents is I'm advocating you keep doing the good work you've been doing and as much as we can get done. I appreciate that. Thank you.

Mayor Burt: Thank you. David Coale to be followed by Walt Hays.

David Coale: Mayor and City Council and Staff, I want to thank you very much for the Summit we had yesterday and for the very good speaker we had just prior to this here. Professor Heck hit a lot of major points, and I want to touch on a few of those. When you look at the places where we've failed, the first one was free parking. None of the Council's comments hit that when we were talking to Professor Heck. A 20 percent mode share shift with just changing parking; that's huge. That's way more than that was ever listed in the Climate Action Plan. This is not to be lightly dismissed. This is an action tomorrow that can really move things ahead faster. The next thing was the bike and pedestrian (ped.) We have a great bike and ped. plan, and it's coming along, but we're not going to get our platinum rating in the timeframe that we thought. We probably need to put more

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Staff time and effort into really making that happen. As the Mayor pointed out, the multiple benefits of riding your bike are just phenomenal. It's quality of life; it's better time; it's exercise, health; it's getting there sooner. Again, let's not overlook the easy things to do. There was a lot said about the autonomous vehicle. That's a distraction. The first thing that's going to happen, I think, when that happens, is vehicle miles go up. The person that misses the Google bus in San Francisco by 10 minutes is now going to grab an autonomous vehicle, and more vehicle mile traveled will be on the road. That's going to be the first kind of thing that happens. Also, as was mentioned by Professor Heck, the expensive cars are going to have it first, and that's going to increase vehicle miles traveled. It's not until you have a combination of all those things, autonomous vehicle, EV and sharing, that you're going to realize those goals that we all want with the Climate Action Plan and with sustainability. Work on all those is very important. The last thing I would say in terms of sustainability is China is now looking at the gross ecosystem products along with the gross domestic product. They're looking at those side by side. This is China. We should be doing that here. That was developed at Stanford. We should borrow that and look at that and include that in with our Sustainability and Climate Action Plan. Thanks again for all your great work. Let's move ahead quickly.

Mayor Burt: Thank you. Walt Hayes to be followed by Adina Levin. I'm guessing that's Adina. Is that right?

Walt Hays: Good evening. I'd like to add my own congratulations for a very successful event yesterday. I think it was a really good way to get the community involved in what was going on. I'm speaking tonight on behalf of Carbon Free Palo Alto founded by my friend, Bruce Hodge. It has a mailing list of about 200 people. There are a couple of things. We're going to be dialoging as you go through this process, so I don't need to say everything tonight. A couple of things. One is I would urge you to adopt the ambitious goal of 80 percent by 2030. It's easy to say we'll do what the State requires, but we'd like Palo Alto, as several people have said, to continue to be a model. Even if we don't make it, as the slogan in Zero Waste is Zero Waste or damn close. I think we should say 80 percent by 2030 or damn close. Secondly, we feel strongly that in order to achieve those goals, we should not do offsets. That's where you're paying money for somebody else in some other state to put solar in or something like that. That could cost as much \$50 million. If we had that kind of money, we should invest it in distributed energy right here in Palo Alto. There are a couple of things that you can do easy, that are big items on that list where you can see the long green lines and the short green lines. One is even though it takes individuals to buy or lease EVs—you can tell how I feel about that by reading the *Weekly*—the City can do a lot to promote it. I remember Greg Scharff

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was the host for a drive across town that featured displays and practice and allowing people to drive the different electric vehicles. The City can do that without spending a lot of money and encourage people to make those decisions. The other thing quickly is fuel switching is another big item. It's not going to be easy, because it's really hard for people to do that under current circumstances. One of the things that I am glad that Gil mentioned that Boulder has a program where on-bill financing can take care of that. Bruce Hodge has proposed something like that, where actually it would be a low-interest loan. People could end up paying the loan off instead of paying their utility bill and actually have a reduction in what they pay. I don't know whether that can be done or not, but he seemed to think it could be. It's the kind of thing that I'd like to see you look into as soon as possible. Otherwise, like Adam Stern who is the Executive Director of Acterra, when we were talking yesterday at one of the tables, he said, "My water heater went out, and I couldn't get anyone who could put in a heat pump, so I just went in and put in a regular gas heater." I also want to say I think that the pilot plan that the Utilities had put forward is a really good start. Thank you.

Mayor Burt: Thank you. Adina Levin to be followed by Rita Vrhel. Welcome.

Adina Levin: Good evening, Council Members. Adina Levin, Friends of Caltrain. Thank you very much for an informative and inspiring Climate Summit, I think it was yesterday. A couple of thoughts with Professor Heck and the Climate Summit and the Climate Action Plan. First of all, glad to hear parking and the price of parking being talked about as really a secret sauce. One of the ideas is to have prices of carbon baked in. Parking pricing is actually one of the economic levers that's really powerful, particularly in cities where the existing development is a large fraction of anything new. Having parking revenues drive transportation alternatives is a really powerful tool. I'm looking forward to that coming up tactically in the coming months as something that the City might be able to do in the short term. Secondly, in terms of the idea of having combo transit passes, Friends of Caltrain is working with the Transportation Management Association (TMA) and a group of Stanford students on assessing opportunities for transit pass discount pilot programs for low-income workers who have challenges with the cost of alternatives. It's really crazy that one of the things that we need to do is figure out how many Caltrain passes, Dumbarton passes, Valley Transportation Authority (VTA) passes and SamTrans passes to do. With the City and with the TMA and this as an emerging trend in the region, hopefully we can use that leverage to push on the region and the Clipper contract, which is going out, to be able to say we want this stuff all put together. Lastly, while the trends in electric vehicles are really encouraging, there's a long line here that's about in-commuting.

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Will low-income workers commuting from Antioch really have an electric vehicle 10 years from now, and making that connection to the lever in here that has to do with housing and low-impact housing. That's certainly an issue where there's a lot of questions in the community. If you look at what Mountain View is doing considering housing near Google, and Menlo Park is doing considering housing near Facebook, that seems like an issue and a topic for one of the drill-downs to explore what the community may wish to do with that lever with housing as a piece of the overall transportation puzzle and solution set. Thank you.

Mayor Burt: Thank you. Our next speaker is Rita Vrhel, to be followed by Stuart Bernstein.

Rita Vrhel: I also attended the sustainability conference yesterday, and I thought it was excellent. I did notice, however, when the tables were speaking, or the representatives of the tables, that water didn't come up very often. It seemed like energy and transportation were over-represented and water was not. I wasn't going to speak tonight but, Mayor Burt, I found your comments on water to be very stirring, so I had to come forward. Dewatering in a time with extended drought is not sustainable. Our water is our water. It's a community resource. We need to treat it and protect it with great care. Next week on 2/1 at 7:45, the City Council will be looking at Staff recommendations on changes to the dewatering process. Staff has done an excellent job of addressing this issue for the first time, I believe, and making recommendations. However, many of the three-tier recommendations that the City Council asked the Staff to incorporate into their recommendations when they were brought back to the City Council were not included. I would ask that the City Council at least measure the water that is pumped or dewatered from each residential site; that you charge for this water so that it is no longer free, because it is not used; that you test the water to see if it is "potable" or "almost potable" and could be used for other purposes; that rather than having a water truck one day a week, and we don't know whether this is one trip once a week or 27 trips once a week, that you encourage and demand recycling and reuse of as much water as possible; and that you demand best practice of construction so that you limit the amount of extracted groundwater by limiting the time of extraction. I feel very strongly about this and have done my personal best to limit my water use. I would like most other people in the City of Palo Alto to also do the same. Again, dewatering is not sustainable. We will probably this year see a large increase in the number of dewatering permits requested, because of different real estate agents and companies' focus on Old Palo Alto as a site where dewatering can occur, and also the community center as a site where dewatering is occurring to excess. Thank you very much.

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Mayor Burt: Thank you. Stuart Bernstein to be followed by Mike Thompson.

Stuart Bernstein: Good evening. I'm Stuart Bernstein. I'm a member of Gil's Sustainability Advisory Council. He's done very fine work. I've run our firm's clean technology and renewables group for a number of years. Two comments I'd like to make. The first is that the 80 percent reduction by 2030, I don't think should be viewed as an ambitious target at all. I think it's actually quite achievable, and we should consider 100 percent reduction by 2030. Why do I say that? Most new technologies don't follow linear curves. People have been drawing data points and extrapolating from those data points, and that's what they believe the future will look like in 2020 and 2030. Mostly technologies follow a "J" curve. We've witnessed with the adoption of utility-scale solar, distributed solar, utility-scale wind, adoption rates which far exceed what anyone predicted. For example, the Department of Energy (DOE) thought that there would be just one gigawatt (GW) of solar in 2012. That number was exceeded by more than a factor of ten. Every day today, more electric vehicles are sold than what the DOE thought would be sold in the year 2035. Whatever we believe today, we will far exceed that in the future, and we should embed that into our thinking as we adopt the goals that are out to 2030. The second comment I'd like to make is that there's so many cost reductions in these technologies that if we perceive this to be an incremental burden to the City, we would be mistaken. Cost curves are being driven down. These technologies will be not only competitive with fossil fuels, but far more economically attractive than fossil fuels without subsidy in the very near future. Furthermore, all of these because they're economically feasible are financeable. While even in the short term that the first costs are higher, the total costs will over the long term be meaningfully lower. Anything that's economically attractive and has a total cost that's lower than today's alternatives is financeable. For these reasons, I think we should consider adopting even more ambitious targets than 80 percent reduction by 2030. Thank you.

Mayor Burt: Thank you. Mike Thompson to be followed by our final speaker, David Moss.

Michael Thompson: I also was at the Summit yesterday. Pretty inspirational and action oriented; that's very encouraging. I actually heard somebody who attended yesterday saying it was lip service to EVs in particular was a quote. I think it was a lot more than lip service, so I have to comment on all that. I think that Palo Alto's leading California, the U.S., the world and should certainly target exceeding the norm. I offer my assistance in whatever way that can be in terms of mobility of service, energy and electric vehicle deployment incentives and charging. I am inbound traffic to Palo Alto. I have worked in Palo Alto before. I certainly come to visit and shop

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and do various things. That kind of leads me into something I heard from a coworker today which is—a number of ideas are kind of going to sprout through here. One is to have EV charging at emergency rooms and hospitals. You have your EV for your planned trips, and you know your work; you know where your chargers are. You don't plan a trip to the emergency room. In terms of your security blanket, that's a good spot to look at. Medical offices of course, but hospitals and emergency rooms are a good start there. Carbon pricing, do it. When you're looking at taking things off of gas, look at retail outlets. If a guy goes to replace his water heater, the water heater service gives him the gas water heater or the standard electric. Maybe at the Home Depot, the Lowe's, the other retailers, we need things like here's the gas stuff, but if you're in Palo Alto, let's do the electric. Let's make sure that the electric lawn mowers, the electric water heaters are out in front, not the gas out in front of the window as people walk by. It's real hard not to get excited when I'm in Palo Alto. This is really great stuff. I happened to have brought my own little lithium pack here for my own little micro-grid power supply. This is just a wave of the future. Thank you.

Mayor Burt: Thank you. Our final speaker is David Moss. Welcome.

David Moss: I'm absolutely amazed at this wonderful list here. I've never seen a list like this, and I'm a homeowner like everybody here. I would love to see this list and six things I could do as a homeowner for each of these, especially the electrifying the space heating, electrifying the water heating. Those kind of things, I'd like to see that tomorrow. I know you have that information and, I think, if you want to get to your goal as fast as possible, educating the residents and doing it repeatedly, I think, will get you tremendous momentum right out of the gate. If you could do that, that would be wonderful. I can also mention drought-tolerant landscaping. I'm seeing people starting to grow their lawns again. I think that that's actually crazy. If there's anything we can do to educate the residential homeowners to do drought-tolerant landscaping as well, that would be fantastic. Thank you.

Mayor Burt: Thank you. That concludes our public comments. Thank you all very much. I think everybody who spoke tonight was at our Summit yesterday. Thanks to you and everybody else for participating in that. I think a really great event. Let's return to the Council. One of the things that we should maybe just check in on is a time check. We have one more significant Item tonight; one more Item, and it is significant, and that's a Study Session on our Parks, Trails, Natural Open Space and Recreation Master Plan. We have budgeted around an hour and a half. It might take less than that, and it depends in part on how we want to divvy up our time.

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It's quarter to nine now. Let's try to have 45 minutes perhaps on discussion here and see how that goes. Everybody kind of keep that in mind, and we'll see how we progress. First, Council Member Holman.

Council Member Holman: Thank you. Thank you for the work that went into yesterday's presentation and also the presentation this evening. I have some comments, and some of them will lead to questions. I think I'll probably just put them all there. If you could make note of them and then respond maybe in bulk, that might be the most efficient way. I laud the attempt, I laud the effort, I laud a lot of things that are in this plan. I also think that there are some significant gaps in it, that we're not looking at our Carbon Plan in a holistic manner. I'll get to some of those here just in a moment. Traffic. We can't, on the one hand, say we want to reduce traffic and reduce the impact of vehicles when we're at the same time approving projects that skate just below the significant impact at intersections, for instance. We should be looking at no net new trips. To get to no net new trips, we also have to have a reliable, quantifiable, easily understood threshold and basis for how we count trips. Some of the things that we're looking at here, I have some concern about unintended consequences. For us to have more housing which could potentially get more people near jobs but, of course, there's no assurance of that. Because somebody lives in Palo Alto doesn't mean they're going to work in Palo Alto or vice versa. I know we've talked about having more housing in some of our urban areas or maybe overall. We need to look, though, at again the consequence of changing our zoning if we do this. I'm actually pretty much in favor of doing this, but also we need to consider it in a holistic fashion. If we changed our mixed-use requirements, for instance, to where we allowed more housing, less office, and ground-floor retail, let's say, we need to also look at what those impacts might be, especially if we change parking requirements. Parking requirements over time—I've been told for many years that the parking standards oftentimes determine what the size of the building is going to be. We need to look at it again, so we know what we're going to do and what we're going to end up with. When it comes to Uber, Lyft, those sorts of things, what do we have in terms of data, trends versus assumptions versus long-term likelihood? Just to use one example. If someone's using Uber to get from San Francisco to Mountain View, let's say, is that going to be four car trips as opposed to two car trips? In other words, down and back, or is it going to be down and back to get somebody else, and then down and back again? In other words, what are the trends, what's the pick-up and drop-off? We don't have any data; I've never seen anything that really is substantial and significant. Again, looking at the holistic aspect of carbon footprint. We have seen nothing that I'm familiar with as a part of this plan. The positive impact of our canopy. In other words, what kind of investment should we be making in our canopy? What

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kind of carbon neutrality or even positive carbon impact does our canopy have? That should be part of the mix; I'm not seeing that. Bicycle infrastructure. As I look at it up here on the screen right now, the bicycle infrastructure looks like it's a very small investment, and yet we've seen a pretty significant reduction in vehicle trips especially when it comes to school sites and some employment centers. This looks to be a small investment; if that could be explained. Dewatering, I also have the concerns that have been expressed by some of the speakers this week and prior weeks. I have some significant concerns about that. I know we'll take that up again. One of the things on here is this achieving zero waste. This is an area where, Gil, you and I and others have had a conversation about this before. Again, it's looking at this in a holistic manner. Leadership in Energy and Environmental Design (LEED) actually falls way short, and I think our analysis of this is also way short of what the cycle is. If you tear down an existing building 10 years old or 100 years old, there's embodied energy in that. If it's salvaged, that's one thing. If it's recycled, there's energy that goes in recycling, there's energy that goes into transport both directions, both as material to be recycled and as a new product maybe that's made from recycled materials. There's also the impact of new materials that come to the site either to rehab a building or to build a new building. Obviously there are more materials that come to a site to build a new building. I don't see that quantified anywhere. With the Construction and Demolition (C&D), I'm going to keep harping on this, so you may as well get used to this. We're now going on 13 years of a C&D Ordinance. Walt Hays is going to get sick of me saying this too. We're going on now 13 years of a C&D Ordinance, and we don't have any analysis of that. I don't even know if we even count how much is going to recycling versus salvage.

Mr. Keene: Council Member Holman, might I interrupt you? We had Puck do a shout-out for you on that in his talk a little bit yesterday. I don't know if you picked that up.

Council Member Holman: I did. Just a little one. I'm trying to get it out there and promote it. Yes, I appreciate that. Again, I'm talking about a holistic approach. We can't just say we're building new buildings that are zero energy use when we're transporting our impact someplace else. That's not okay. I have questions also about the accessibility of some of these programs across the economic strata of populations in our community, and for that matter in other communities. Something we used to talk about and we don't anymore when it comes to new buildings or rehabbing existing buildings. We used to talk about making them adaptive and flexible. I haven't heard anything about that in a long time. Stefan mentioned it tonight. He even mentioned like hospitals. I just don't see that we're doing anything in that regard these days and haven't for some time. I haven't

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heard it mentioned for a good while. I'm almost through here. I guess the last couple of comments that I would make here. This is a Study Session, so I don't know how you're going to go away from this with any kind of direction. That's my concern I always have about Study Sessions. It's like if Staff goes away with do you pick this from this person, this from that person, if it seems like other people agree with that. I think it's very dicey for Staff. I think it puts Staff in a very awkward position. I think for there to be action taken, it should be an Action Item. You're asking us to take a very big gulp here. While I'm certainly in favor of reducing our carbon footprint as a community, I think there's more information that needs to come forward, and we need to take bites that we can understand and digest. It seems to be a bit of a rush forward. It's a commendable goal, but I have some concerns about unintended consequences. Certainly I want us to look at whatever we do in a holistic manner as examples that I've given. We need to know what left hand and right hand are doing at the same time. That's a lot to put out there. If you have any comments, I'd appreciate that.

Mayor Burt: Gil, can I weigh in on just a couple of things to help frame for the Council before Council Member Schmid goes in? First, we call it a waterfall graph, but it goes upward. It's more of a mountain climbing one. In any event, these are not expenditures; these are reductions. It still may follow that they expand bicycle infrastructure. That's not the expenditure on that. That's the impact. I would agree with you that we can have a greater impact on that, and maybe that one is underestimated. I just want everybody to understand what the graph is about. In the concept, for instance, we do have a significant impact from, for instance, Zero Waste. The construction is a subset of that. I just wanted people to understand what's in that. The other thing that I'd like you to speak to briefly, Gil, is one we said we were going to hit and didn't. That is our tentative process going forward. Council Member Holman was concerned about this being a Study Session rather than an action session. Let's briefly talk about tentative thoughts. This may go into Council input on process that we want going forward. Why don't you share briefly on that as well?

Mr. Friend: Would you like to address that right now or talk more about the substantive comments and then come back to that as a closure?

Mayor Burt: Let's start with the process, because that kind of informs everyone.

Mr. Friend: The assumption that we've been operating with is that we would do a series of Study Sessions with you on specific topics to give you the opportunity to go as deep as you want into the technical and strategic and economic details of the things that we're putting forward. At some point in

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the future—this is going to be really dependent on your comfort level—as things take shape, come back with an Action Item. We had initially thought we might do that late in the spring around Earth Day. Our sense based on the discussions of the last few weeks is that may be a little bit over-optimistic. It may be that we do this in the early fall, but it really depends on your comfort level with what kind of decisions you want to make with what sort of information. Frankly, one of the things that I hope to learn from this—Council Member Holman to your point about the value of Study Sessions, it would be very helpful for Staff to understand what you need to know. What information you need in order to be comfortable making the kinds of decisions that are before you, so then we can meet that need and support you in making those decisions. I hope that's a helpful response to your question.

Mayor Burt: Let me just toss out for our Colleagues—this may be something that you want to consider. As we've done in some circumstances, we can have a Study Session followed by an Action Item which would not obligate us to take action, but it enables us to do so. If we felt after a Study Session or it looked like we might want to give certain direction, it would have to be done under an Action Item. We could agendize it in that way. That's something to consider.

Council Member Holman: Gil, you asked for questions we needed answered. I put a lot of stuff out there. If you want to attempt some of that?

Mr. Friend: You raised ten points, Council Member, so let me briefly address them. On traffic, I think your point about no new net trips is a powerful idea to look at it. It's a measure that has been adopted by some of our neighboring communities. It is related to Option Four in the Draft Environmental Impact Report of the Comp. Plan, looking at no net impact as a possible guiding strategy. I think what Planning Director Gitelman put forward there was the option of looking at development that adds no new energy demand, no new carbon impact, no new water demand, and no new net trips. It's a powerful idea. It sets strong, clear goals, and it provides a lot of leeway for innovation by builders and developers rather than being prescriptive. I think there's opportunity to look at there. Before I go on, let me just say I think you repeated a number of times the need for holistic or integrated strategies. I think you're exactly right there. One of the challenges of this work is that all the pieces connect to all the other pieces. It's hard to talk about everything at once, so we have to talk about things one at a time, but we need to recognize those interconnections. We had a meeting this afternoon, for example, about the Parks Master Plan. One of the questions raised there was how do we think about parking for the parks in the world that Stefan Heck was describing. In that world, if there are in

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fact fewer vehicles needed and there's fewer parking areas and possibly fewer roads needed, which means you have more permeable land, more water capture-ability, vehicle strategy affects groundwater management. Who would have thought? But there it is. Many of those things interconnect. On the unintended consequences, this is of course the challenge in all this work. The best we can do, I think, is to think as holistically as possible, try to understand the interrelationships, and proceed step by step, watching the signs, seeing the warning signs and being able to adjust course as we go. On the data trends for the transportation network companies, the Ubers and Lyfts of the world, there's not a lot yet. The scale even in this region is only probably about one or two percent of trips being used there, but it's growing very rapidly. I harken to the "J" curve effect that Stuart Bernstein spoke about before. We're seeing these things accelerate rapidly. I think one of our big opportunities there is to bring our longstanding commitment to open data into the conversation with these vendors and perhaps say, "If you want to operate in this region, you need to play with an open book so that people can share information and get the benefit of the network effects." Our Transportation Management Association is already negotiating with Lyft about some innovative first and last-mile solutions for Palo Alto. There's an opportunity to generate some of our own data there. Transportation group in Planning and an interdepartmental group working with Assistant City Manager Shikada have been looking at a variety of ways to start to apply and test these ideas here, for City employees, for the large employees in the TMA, and other ways we can start to generate that data and hopefully in a way that encourages open data sharing across vendors. The positive impact of the canopy critically important. We haven't addressed that in a lot of detail, because that's very much addressed in the Urban Forestry Management Plan and in the Parks Master Plan that's now in late stages of development. Yes, all of that needs to be tied in. Bicycle infrastructure, I appreciate, Mayor Burt, your clarification that this chart is showing impacts, not costs. In your Staff Report on Page 18, you see Figure 8, what's called a McKenzie Chart which is showing the estimated mitigation costs of different strategies. The ones to the left below the line are actually revenue positive out the door. The ones to the right above the line are more expensive as the lines rise. You can see that the bicycle infrastructure is not the least expensive strategy. It's also not the biggest impact strategy as constructed here. There may be ways to do that more effectively. It ties, Council Member Holman, to your concerns about unexpected impacts and the interconnection of elements. As we've discussed this internally among Staff, there's been some concern about how would the public respond to expanding bicycle infrastructure which on the face of it would be at the expense of automobile infrastructure. Take car lanes, move them from cars to bikes. This is something where we need perspective from you and from the community. Is this a shift that

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people will accept? Will they accept it grudgingly? Will they accept it enthusiastically? We've seen in other cities it's happened expeditiously and well. We need to see what that would look like here. I'll skip dewatering; we have other items coming before you about that. I'd like to defer a response to that. On Zero Waste, we've done extremely well so far. We're probably second or third City in the country on waste reduction. You're absolutely right construction and demolition is an open item that we haven't been successful on or as successful as we would like to be. I think your point about embodied energy is extremely well taken. We don't just want to scrap the old and build the new and lose the value of those materials. I think it's an area where we need more work and where there is multiple benefits from pursuing that economic, quality of life, carbon impacts and the rest. On economic accessibility, I think this is always the challenge with innovation. The innovations tend to be adopted by wealthier people first. As they hit market scale and the prices come down, they become more accessible to more people. That's sort of the baseline we start with. We might think about as an intentional policy commitment by the City to expand that accessibility early on. One of the things that the TMA is looking at is first and last-mile solutions specifically tailored to service workers in Downtown who are not wealthy, who in many cases work multiple jobs, can't avail themselves of the transit alternatives that are available. We're looking at how do we impact not just the early adopters of fancy, new stuff, but folks who have real needs and limited means and to tie them into what you're referring to as a holistic solution.

Mayor Burt: I think I need to interject that we're not going to make our timeline if we go into this depth on each topic. It exhibits that we have a lot of important, related topics here. I think both we as a Council may be putting out certain things that we won't necessarily get any kind of detailed answer on. I think you're only going to have opportunity to give a pretty high-level answer on most of these unless they're crucial policy decisions that we need to have guidance. I didn't mean to say—if there are a couple more of Council Member Holman's questions or comments that you can have a very brief response on, that'd be fine.

Mr. Friend: Thank you. Just one more. The question of adaptive use of buildings, a very specific challenge there. Should we build more parking garages when there is demand for them now, but there may be drastically reduced demand in the kind of future that Stefan Heck was talking about? One way of addressing that uncertainty might be to design for adaptive reuse. Build structures that have a particular function now, could be converted to a different function later. Alternatively, you might plan to build them and tear them down and replace them. These are questions that we'll

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need to look at. I think the question of adaptive strategies and flexible strategies is really key.

Council Member Holman: Last thing and then I won't look for answer right now. The life cycle of a new building versus an old building. The C&D is one aspect, but then there's the life cycle of other energy. Thank you.

Mayor Burt: Council Member Schmid.

Council Member Schmid: I'll try and keep this simple and straightforward. You asked for clear direction, something that would enable action. Let me just make a comment on process, and then a technical one on data. The process one. I feel the last week or so I've been in the middle of *A Tale of Two Cities*. Not London and Paris during the French Revolution, but Palo Alto doing a Comp. Plan and Palo Alto doing an SCAP. In the SCAP and even in Mr. Heck's discussion tonight, it was very clear that a lot of success, especially in the transportation area, comes from higher density. If you look on your Report, Pages 19 and 20, you talk about walkable neighborhoods, bike networks, shuttle expansion, transit passes, mixed use, mobility as a service, ridesharing, carpools. All those things work effectively in more dense communities. Professor Heck had a nice diagram of that. Unfortunately, Palo Alto's flaw is its density is very low even in the urban area. If you compare it to the other four cities in Silicon Valley, it's 30 percent lower. If you look at communities like Oakland, Berkeley, Los Angeles, it's less than half. Chicago, Philadelphia, San Francisco, it's a third or a quarter. New York, it's a seventh. Ideas on where transit can work effectively, where you have a walkable communities are harder where you have low density. I was very struck in one of your proposals at the end of your Report. You state that one request you're making is to target a jobs/housing balance of 1.44. That's on your next to last page. That deals with density. How do we get a better balance between jobs and people in a community, create mixed use, walkable neighborhoods and so on? Now, the other side of the two cities was the Comp. Plan. A week ago, we had four scenarios coming to us of let's examine these in detail. They had jobs, employed resident ratios of three, three, three, and 4.7, almost twice of what you're pushing for, that makes sense. Why weren't you a participate in that evening? Where was the sustainability voice that it would be good to have one scenario with one of these options, one of these alternatives? I look and see, ask the process question, how does our thinking on sustainability fit into these other things? The Draft Environmental Impact Report (DEIR) scenarios. Tomorrow night the Citizen Advisory Committee (CAC) is talking about transportation. Isn't there some input that you should have on that? We are starting the process now of our Urban Water Management Plan. By June, 2016 we have to have an approved plan that

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involves a lot of these sustainability issues. We have a groundwater meeting next week. Will there be a perspective on sustainability? How do we as Council Members who have to make long-term water decisions, Comp. Plan decisions, land use decisions fit in an aggressive sustainability perspective? I agree with my Colleague who said what we have scheduled are Study Sessions until the fall. Of course, by the fall we will have gone through our Comp. Plan discussions, gone through our Urban Water Management. Isn't there a perspective that we should be deriving and utilizing effectively? We're not trying to arrive at a solution; we're trying to have a public discussion and public debate. Having a perspective. Yesterday was filled with good and important ideas. How do we integrate those ideas into this process that the Council's going to be going through over the next three to six months? I have one technical issue I would add. I note that a lot of the data updates come from Fehr & Peers. They have a nice greenhouse gas model that is used. Their model, though, has a flaw. It's like our traffic model is derived from Institute of Transportation Engineers (ITE) data sources. It is based on households, so we have lots of data on transportation use of households. You say this is our City but, as we found in our Comp. Plan, we have three jobs for every employed residence. We can't have a sustainability solution that says those people leave our borders in the evening, let someone else take care of their problems. How do we deal with that 3:1 ratio when Fehr & Peers says all you have to look at is your households? It seems to me we've got to deal with both sides of the issue. A technical issue is Fehr & Peers greenhouse gas model, the appropriate one we should be using. Those are my ...

Mr. Friend: Thank you, Council Member Schmid. Let me respond to the technical question first and only in part. I think we need to bring in the folks from Planning to give you a more substantial answer. We had already worked with Fehr & Peers on this analysis before I joined the City two years ago. That's the model that we have had and have updated. We could revisit vendors and build a new model or bring someone else's in. The Comp. Plan process has in fact done their modeling with a different firm, and we have some different results. One of the things we need to do is reconcile those differences. As you well know, transportation modeling is a very challenging thing to do. Our utility data is measured. Our transportation data is modeled and inferred based on assumptions in models. It's not as precise. That said, the Fehr & Peers model, as I understand, is the standard approach, gives the Palo Alto footprint a share of the inbound commuting and a share of the outbound commuting, half of each of those as well as 100 percent of the travel that happens in town. We're not ignoring impact elsewhere. There is some disagreement about how much of that load is from inbound versus outbound, but we know we have a situation of net 90,000 or so people who show up here every day coming to work. It's

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clearly a significant impact. To your process question. The integration across these plans is extremely critical. I have been involved in as many of these discussions as I can. I've briefed the CAC on our transportation strategies. I have encouraged Planning to look at a range of jobs/housing ratios. That's not what they have chosen to do so far. I think you all raised at the last Council meeting—was it this week or last week—looking for an alternative in the Environmental Impact Report (EIR) that gives a wider spread which I think is very sensible because we will only learn if we have tests that are varied and see what they do. To your point about, I would not call it a proposal but an analysis that's here. I'm sorry to say the 1.44 is a typo here. We looked at ranges of jobs/housing ratio from 3.1, I think 2.5 and 1.44. These numbers here are from the 3.1 analysis. We can also show you. As you can imagine, the tighter the ratio, the more the impact is. There was some concern among Staff that proposing something like this would be too scary. Given the concern that people have about growth in Palo Alto, let's start with a smaller step. If you're interested, we can crank this model in a number of different directions, see what those impacts are, and see if people are willing to take those on.

Council Member Schmid: Scarier than sustainability?

Mayor Burt: Council Member Kniss.

Council Member Kniss: I'll see if I can shorten this. I guess I would simply have to start with even though we have a whole Page spent on the cost and so forth, I'm thinking of what the real cost is. What is the real cost to our residents? If we talk about really going to electric vehicles, which I think is a great idea, there's an inherent cost. The first thing we encourage is all electric new buildings. That is something I think we could attain. Universal transit passes, yes. Electrify residential water heating, that's something I'd certainly support. When we start to get into how many electric vehicles are we really going to use, what number do you guess right now, Gil, we've got in Palo Alto? How many electric vehicles roughly do you think?

Mr. Friend: I don't recall the numbers, but I think it's about 3 1/2 percent of our vehicles, which is the highest penetration rate in the country that I'm aware of. It about doubled the Bay Area's which is the highest region in the country. We've got a lot, and we'll see more just given the inclination of our population.

Council Member Kniss: At 3 1/2 percent, we've got a long way to go.

Mr. Friend: We've got a long way to go.

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Council Member Kniss: If we make that a true goal that everyone is in an electric vehicle by a certain length of time, which certainly has some merit to it, then I would also say by the time we get there, which might be five to 10 years, there may be something absolutely new in the transportation world. I've heard Vice Mayor Scharff any number of times say he intends to be jumping in an automatic vehicle by 2025 and taken wherever he's going to go or maybe he's jumping in an Uber. Some of these areas where we're concentrating, which are certainly very tempting, but I think there's going to be change. One of the things I'd like to see woven into this is that opportunity for change as well. You may feel it's really woven into this, but I think earlier when Professor Heck spoke to us, he was kind of doing the brave new world but not attempting again to build any cost into it. Let's think of tomorrow morning. We say, "Everyone, we now need you to electrify your residential water heating." I have a feeling that we'd probably get some pushback on that. My comment would be—you're free to comment back on it—somewhere in here is some other kind of cost. Maybe it's a political cost. Maybe it's an actual cost. Somewhere in this is something that I think we're missing in the piece of having our residents actually switch to this and figuring out what the real cost is that's under all this. Having said all that, I don't in any way not support it. I'm still driving my Prius. I haven't yet gone to that EV. I'm thinking carefully about that before I go that next step. I don't want to be like someone was yesterday, searching all over to find a charging station before he could leave town. Some of this is my saying let's look at some of the reality of it as well as what we'd really like to have.

Mr. Friend: I think you're raising a number of perspectives on the kind of interconnection of these issues, which is exactly what we need to consider. Let me respond to a couple of things. In the case of heat pump water heaters, electrification of water heating, we are bound by law in all of our electrification analysis that we're undertaking now for you to look at cost effectiveness. Heat pump water heaters we have determined are cost effective today, so that's the first element that we're pursuing. Electrification of space heating is not yet cost effective given current technologies and prices. That's being studied but not staged for immediate activity. In the case of EVs, when my friends ask me what kind of EV should they buy, I tell them don't buy one. Don't buy a car if you don't absolutely need one. Use this as your car. If you need a car, then there's an EV. As we know, last year they were much more expensive. Next year, they're not going to be. Chevy is coming out with a \$35,000, 200-mile range vehicle. You'll continue to see those improvements in price and performance. You may remember there was a slide in the deck yesterday showing this radical drop in pricing for photovoltaics, batteries, electric vehicles, and so forth. That's part of the puzzle. The charging infrastructure is a real issue that we

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need to face. We're bringing an Item to Policy and Services next month and to Council in an interval after that, looking at what should we do about EV infrastructure. Should we, for example, be collecting fees for charging? Should we build that out more? In a world of 80-mile range electric vehicles, the charging infrastructure is critically important, because people can't commute in and commute home without nervousness about being able to get home. In a world of 200-mile range vehicles, that may be less important. That becomes a challenge for us of thinking about how much infrastructure do we want to either put in ourselves or encourage third-party vendors to put in. You're hitting a bunch of questions that we need to get to as we look at the specific implementation strategies here.

Council Member Kniss: Let me just sum it. I think this is an ambitious and laudable plan. I think it's something we certainly should work toward. At the same time, I think that we need to realistically say that there are some aspects of this that are going to be pretty hard to attain. Also, there are going to be some dramatic changes along the way, especially when Greg calls for his automatic car. I'm certainly hoping I can get one at the same time. That's it for me. Thanks.

Mr. Friend: Thank you.

Mayor Burt: If I might just add a moment here where we had one of our speakers, Stuart Bernstein who mentioned that he's on our Sustainability Advisory Council. He talked that the favorable changes in technology and costs are occurring much more rapidly than government bodies had been projecting and other expert had been projecting even recently. As we often get in Palo Alto—this is part of what we call our Palo Alto process—it is having some exceptional experts just residing and participating in our community. Mr. Bernstein didn't mention that he's head of Goldman Sachs Venture Capital and Clean Tech Groups. When he speaks, he speaks with not only knowledge and authority, but behind what are multibillion dollar investments that backup what he's saying. What we've seen already in terms of technology progression is liable to be accelerating. We certainly didn't think just a few years ago that we could book solar projects, our next ones, at four cents a kilowatt hour. It's phenomenal the transformation that's occurring. I think it goes back to this concept earlier of if we were to attempt right now to try to figure out the exact path by which we would get to, say, an 80 percent by 2030 goal, that would be a different story from what we may determine five years from now. On the other hand, when our Councils in the past set a 20 percent renewable electricity goal, that seemed extremely ambitious. When we went to 33 percent under the same budget, that seemed extremely ambitious. The technology cost reduction curve occurred to the point where we went to carbon neutrality, booking projects

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now either online or booked for over 50 percent of the same budget. I often say looking in the rearview mirror is not necessarily the best way to predict the future. I think that's maybe what we—it's hard to fully anticipate some of these changes. What we've already witnessed, I mean, Council Member Kniss, I have borrowed your line about driving our gas guzzling Priuses. It just shows how our thinking has changed in the last five or 10 years in terms of what was really progressive and possible and has started to be outdated. Just wanted to interject that. Vice Mayor Scharff.

Vice Mayor Scharff: Thank you. First of all, Gil, I'd like to say I think you did a really good job in putting this chart together. I think it's concrete. It has a lot of good things for us to think about, and I really appreciate that. First of all, I think I'd start with the big picture. I think I could support 80 percent reduction by 2030. The reason I could support that is primarily you've shown a possible path here which gives me the confidence that we could get there. Now, with that said, I think the thing that concerns me the most is the way we look at electrification. I support the concept. I like the idea, but I would like to see us model out on our gas utility what this means. Most of our gas costs are fixed. Basically what you do is you have volumetric pricing on a fixed asset. That means that as we sell less gas, we will have fewer and fewer people dealing with the fixed asset cost. I forget. I think when we went to non-laddering, we basically are now at roughly the same price as Pacific Gas and Electric (PG&E) is. As we sell less gas, I am assuming we'll rapidly escalate our costs. That's why I want you to do some modeling. I want to see if we reduce gas sales by 20 percent in Palo Alto, what does that look like. If we do it wrong, what's actually going to happen is we'll end up at 150 percent of PG&E at which point our citizens are going to say, "Why am I paying 150 percent of PG&E?" At that point, the question becomes do we just dump our gas utility. Then PG&E comes in and runs a gas utility here, and we lose all of that, unless there's some legal thing that says we can deny our citizens access to gas and no one can run a gas utility. I think as we look through this, I think we have to think about unintended consequences and model them and understand what we're going to be doing. I like the idea of encouraging (crosstalk) ...

Mr. Friend: Could I just respond to that one very briefly?

Vice Mayor Scharff: Sure.

Mr. Friend: We're in process on a series of electrification analyses looking at the cost of different technology options and the transition issues for the utility. The points you're raising are exactly apt. The challenge is that we don't just have the option of pushing electrification or staying the course, because the market is also moving. Electrification will become more

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competitive and more attractive. We may lose gas customers anyway. I think the question for us is how do we do this in a proactive and directed and strategic way for us, not just trying to respond to what the market throws at us. Back to you for your next point.

Vice Mayor Scharff: I think that's a good point. Encourage all-electric new buildings. I think that's a great idea, but I also think we need to have good substitutions. I was glad to see that you said that water heating is there, but space heating is not.

Mr. Friend: Let me clarify. Space heating is not for retrofit.

Vice Mayor Scharff: For new, it is?

Mr. Friend: For all-electric new, it may be. Peter, do you have anything to say to that at this point or do we not know yet? We'll come back to you with a lot of detail on electrification. Thank you.

Vice Mayor Scharff: The point I really wanted to make is as a Guiding Principle, I want to have good substitutions. That's where I was really getting to that. For me, I can tell you where I don't think we have good substitutions, but maybe that's where green gas comes in, would be for gas cooking frankly and for fireplaces. I would hate to see us, for instance, outlaw gas in all new buildings and, therefore, no new restaurants in Palo Alto could have gas cooking. That means you'd be stuck with the inability to retrofit and create new restaurants. You would stagnify (sic) and die as a restaurant area or over time. You might not, but I think you would. I just want us to think about those things. I'm sure there's substitutions. I did want you to answer the question of what is green gas and why is that green.

Mr. Friend: As we're using green gas in Palo Alto Green Gas, it's gas that is being offset. We're purchasing offsets to green up the gas by purchasing offsets that invest in projects elsewhere. The other alternative is biogas or renewable natural gas. Utilities has looked at that in the past few years, did not think it was viable. We've seen some new vendors and new offers on the market that are worth reexamining.

Vice Mayor Scharff: Why is biogas green?

Mr. Friend: Because it's not from fossil fuels. It's from organic waste. Methane from a landfill would be an example of biogas.

Vice Mayor Scharff: No, I understand. I'm just not sure why.

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Mr. Friend: Because fossil gas, you're taking carbon that's been sequestered over hundreds of millions of years, and you're releasing it in a matter of decades. Biogas, you're taking annual cycle of carbon formation from photosynthesis and releasing it back out. It's balancing the flows, balance the rates. There are issues about that. It's something we need to investigate, whether it's feasible for us.

Vice Mayor Scharff: I do think that electrification—I do hear anecdotally that it's really hard right now for a lot of people to find charging stations in place. I don't think we're building enough. I think we should get right on that, frankly. I think that's a real issue. I wanted to make a brief comment on parking, charging for parking, and parking prices. One of the things that really bugs me is like when Congress passes a law and exempts themselves. I would say that if we're going to do this, we need to start with—what is it? Our first largest employer in Downtown or second largest employer in Downtown, isn't that the City of Palo Alto? With 1,400 people or 1,200 people, whatever it is. If we're going to do this, I think we're the ones that have to start with us. I think it's wrong to basically say everyone else has to do it, and we don't do it. I wanted us to think a little bit about that.

Mr. Keene: We're looking at what that would take to be able to do that effectively and how we work that out. We hear you, and I agree with you. It's sort of hard to impose things that we don't follow ourselves.

Vice Mayor Scharff: I'm not saying it's not challenging. I'm just thinking that we basically have to lead the way and show that it can be done, if we're going to do it.

Mr. Friend: City Manager gave me a very clear directive last year, said we go first on this stuff. If it's a good idea for other people, it should be a good idea for us. If it's not a good idea for us, we shouldn't ask anybody else to do it. Totally with you on that.

Vice Mayor Scharff: That's really where I wanted to come out on this. I wanted to basically give you the overall thing. I thought it was a good job. I think we can get this done, but I do think we have to think about what all the consequences are (crosstalk).

Mr. Friend: Absolutely. Thank you so much.

Mayor Burt: Council Member Filseth.

Council Member Filseth: I think I can be really brief here. I think I'm just going to sort of amplify a little bit on what Council Member Kniss ...

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Mr. Friend: Sorry. Council Member, could you speak up a bit please?

Council Member Filseth: Yeah. I think I'm just going to briefly amplify a little bit on what Council Member Kniss and also the City Manager talked about a little bit earlier. One of the things you're asking, are we ready to commit to 80 percent reduction, which I guess is 160,000 tons per year, by 2030. I don't feel like I have enough information to make that call yet. I do think that this chart is exactly the right starting point to get to that point. I think it's important that we see the next level of granularity. The impacts of how much greenhouse gases are we talking about and what are the assumptions behind it. Are you assuming, as Ms. Kniss said, all the electric vehicles or half the electric vehicles and so forth. What are the costs? You're going to have to worry about sort of what are the assumptions about adoption rates, early adopters versus pragmatic mainstream and all that kind of stuff as well as Commissioner Scharff's comments about potential substitutions. Finally, the comment on the impact on the community resonated with me a little bit. I think we need to bear in mind that only—what? About 25 percent of Palo Altans actually were subscribers to PaloAltoGreen when it existed. I was one of them. I think we've got to bear that in mind as we think about sort of how we're going to get this through the community. That said, I think this chart is the right place to start. I look forward to seeing more.

Mr. Friend: Thank you, sir.

Mayor Burt: Thank you. Council Member Berman.

Council Member Berman: Thank you very much. As a lot of my colleagues have said, thank you, guys, very much for the Report that you've given us today, the presentation tonight, and especially for the hard work that you and your Staff put in yesterday. I was really just blown away when I walked in the room a couple of minutes late and saw a packed house of almost 300 residents. That's a testament to the work that you guys did and the excitement that people have in our community about this type of an effort, and people from other communities. I talked with a lot of folks who were from surrounding communities. A lot's been talked about tonight. In the spirit of what you kind of asked for, I'm going to keep my comments a little more macro. I think it's important that we set an aspirational yet attainable goal with the understanding that we're not going to have 100 percent of the information we need when we set that goal. We're taking a little bit of a leap of faith. As Council Member Burt went through with our Carbon Neutral Electricity Portfolio and our Renewable Portfolio Standard (RPS), I don't think the Council knew how it was going to do it at that time. It sets a goal and says, understanding that technology is going to change and the market is

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going change and people's habits are going to change, how can we achieve that goal by the deadline. You've got hope a little bit that Silicon Valley will do what Silicon Valley does which is create the tools necessary to achieve that. I'm confident that it will. I'm also confident we don't have much of a choice. If Palo Alto doesn't really take a very ambitious step and kind of set a market out there, then other communities won't either, similar to the role that America's playing on the global stage. I definitely think that a lot of the questions that my Colleagues have asked are good questions and that we should get as much information as we possibly can. We shouldn't let any lack of information stop us from really moving forward very ambitiously which clearly, I think, our community wants. It's true that only 20 or 25 percent of our residents were participating in Palo Alto—I always get it confused whether it was (Clean Local Energy Accessible Now (CLEAN)). I think it was Clean. PaloAltoGreen, is that what we called that one?

Mr. Friend: Yeah, PaloAltoGreen.

Council Member Berman: That was what? Like 2X better than any other community in the country. I think we have a pretty unique opportunity to really be ambitious. I was talking about this with somebody yesterday. Some stuff's not going to work. That's a hard thing in the public sector. There's not a lot of acceptance with public sector initiatives for failure, when ironically there's a ton of acceptance in the private sector. This is one of the areas where we as a Council have to tell you as a Staff and you guys as a community that we're okay with some failure. We want regular monitoring and benchmarks and oversight to make sure that when things are veering off course we eliminate programs that aren't working and we don't waste a lot of money. The fact is with some of this, we're going to be experimenting, and some things are going to work fabulously, and something might not. I guess I'm saying that I, for one, am okay with that and understanding that that might happen. I think our community is okay with that also, one the whole. Obviously not everybody in the community will be okay with that. One other thing. We talk about all electric buildings and the fact that this recent development in the Stanford Research Park kind of surprised all of us when they said they're not going to have a natural gas hookup, which threw us all off guard. It's 1050 Page Mill Road. It looks like you weren't aware of that one. Reach out to them maybe as they're going through the process, and let's start compiling best practices. I mean, it's similar to what—there are efforts in other areas with sea level rise, for instance, at the State level. The State's compiling a database of things that people are doing. Let's reach out to developers that are building those projects and say, "What was your experience like? Where were some pain points? What worked well?" so that future developers have that at the ready, so that it's a little less scary for them to try those types of things.

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We can be kind of a compiler of data. Another question that somebody brought up to me, actually a former Colleague, yesterday was what can we start doing now that doesn't need the completion of the SCAP to get started on. That's something that I'd ask you guys. As we go through this process, if there are really pretty no-brainer initiatives, get those to us sooner so that we don't even waste a year or nine months for the end of that. Assuming it's not set in stone and that we're going to be having more conversations about this, I'm very interested in a 80 by '30 goal. I'm interested in a more ambitious goal than that. I do think that is attainable. I don't know if you're looking for all of us to put out a vote tonight or just kind of say what we're interested in. I mentioned this six months ago or so and I'll say it again, find the most ambitious goal, and then try to do it 10 percent faster. We should be ambitious, but we should be realistic. I'm for as ambitious as possible.

Mr. Friend: The most ambitious that we're aware of now in addition to Fort Collins' 80 by '30 is Melbourne, Adelaide and the University of California System are saying carbon neutral by 2025. That's probably your benchmark of the most ambitious.

Council Member Berman: Ambitious and attainable? I guess time will tell.

Mr. Friend: They think so. We'll see what it works out to. Maybe you have two choices to consider. One is 80 percent reduction by 2030. The other is carbon neutral as soon as possible.

Mr. Keene: May I just interject again? I mean, again, we're not going to adopt a plan with a 2030 horizon and that's the end of the conversation. We can easily modify the plan next year, two years, five years from now in either direction potentially depending upon how effective we're going.

Mr. Friend: In fact as we said before, our recommendation would be to plan a five year cycle of updates, perhaps more frequent than that if you choose. Things will change.

Mayor Burt: Council Member Wolbach.

Council Member Wolbach: When we talk about sustainability, something I haven't heard a lot of discussion about tonight or yesterday—by the way, great job yesterday to all the Staff involved, the community members who came and participate. Just a wonderful, very educational, informative and useful day in moving this conversation forward. Something I've not heard a lot talked about is the concept of the three "E's" of sustainability being environment, economy, and equity. The importance of recognizing how essential each of these components is and how they are not in conflict, but

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in fact are coordinated. We heard Stuart Bernstein speak earlier about how essentially—my read of what we hear from him and from others and also the keynote speaker yesterday. We have a fiscal responsibility, when thinking about the long-term fiscal health of the City government, we have a fiscal responsibility to sustainability. It will be cheaper in the long run if we're doing it right. If we are doing it in a way which costs us more money than not being sustainable, then we're doing sustainability wrong. As far as criteria to use, that's essential. Thinking about how do we do this in a way that supports the long-term fiscal health of the City, that's essential. When we're talking about equity as part of sustainability, this ties back into the housing discussion. Let's be clear. I think this is important. There's a growing body of research about this. Restrictive housing policies and cumbersome approval processes around housing causes racial and economic segregation. That is not a recipe for equitable, sustainable community. That's not what Palo Alto residents want. Palo Alto residents do not dream about a racially and economically further segregated City beyond what we already have. They remember when we had a little bit more diversity, and they want a return to that. We heard that from our Citizens Advisory Committee for the Comp. Plan last week in spades. We heard it today from a member of the community who said we need denser housing. Last week I asked, when we were talking about the Comp. Plan, why we didn't have at least for exploration and analysis a 30 percent increase in population. Council Member Schmid asked why we didn't see in the Comprehensive Plan an exploration of how we could get to a much better, improved jobs to housing balance. That's how we achieve true sustainability. To be discouraged by fear of political lash back or by a Council critique, to be driven even in the analysis phase by fear is something I hope we won't do as a Council, as a community, as Staff in every department. The quote from Flood Damage Reduction (FDR) that we all know, the only thing we have to fear is fear itself. I know fear is a very popular thing these days, but I hope that we can set an example not only in sustainability but in rejecting fear as our Guiding Principle. As far as setting our goals, another presidential quote. We choose to do these things not because they are easy, but because they are hard. For John Fitzgerald (F.) Kennedy (JFK). I think we should absolutely be setting a goal, even if it's somewhat aspirational, of a net zero City by 2025 with 80 percent by 2030 as a minimum. We set the bar here. What's the saying? Aim for the moon. If you miss, you land amongst the stars. We can set a minimum goal. We can set a high goal. If we don't get the top one, at least we get a minimum. Some things I'd like to see further exploration of as this process continues. A trip cap on single occupancy vehicle trips whether by large employers or the City as a whole or both. Maybe tying in fee-bates or some kind of single occupancy vehicle pricing above a certain threshold. Perhaps this is a way we can work with our TMA to get Single Occupancy Vehicle (SOV) trips down below a certain

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percent throughout our Downtown area. That's something that I think is worth exploring. A carbon pricing or Carbon Tax done at a municipal level is something that, I think, we need to explore. I'm not ready to say that I want to do that yet, but I'm interested in exploring how that could happen. What our options are around that and how we could that in a way which supports the sustainability of our economy and doesn't hinder it. As was mentioned a little bit today and a little bit yesterday and will be essential moving forward—I'm glad to hear we'll have a separate Study Session on it—is our resilience in preparing for the inevitable impacts of sea level rise, the fire risk especially to our Foothills from climate change, the drought, the dryness, the increased temperatures which can have a very significant impact on increasing risk of fire. I think that's overlooked often. Given how much of our infrastructure, our homes, our roads are so proximate to sea level and so close to the bay and our creeks, of course the flood risk and what that means for our future. I look forward to the discussion about resilience. I'm definitely interested in hearing more about net zero housing. Council Member Holman pointed to a couple of things that really do essentially tie together, the idea of no new net trips and also this trick question of housing and parking. I think what we've been hearing from a number of our presenters recently and a number of our studies recently is that that really is the future. The future is homes with much lower parking requirements, parking demands, and parking impact. Thinking about how we can enforce that, incentivize that, and make sure that our community isn't negatively impacted is, of course, important. I want to see how we can really push that in an aggressive way. We should not be afraid of denser housing in strategic locations with low parking and vehicle trip impact. That is going to be essential to our sustainable future for our economy, our environment and also for social equity.

Mayor Burt: Council Member DuBois.

Council Member DuBois: I have some questions and then comments. I'm just going to rattle through them since we're getting kind of late. We had two relevant Information Reports in our Packets that kind of tie into this issue. One was the Report on the Carbon Neutral Electricity Program, and the other was the Plan Bay Area forecast update. My first two questions. On the carbon neutral electricity, I think 55 percent of it this year is going to be renewable, 51 percent, 49 percent is offsets. I think it's really important as we consider electrification—I think one of the speakers brought this up—that we talk about offsets. It wasn't really discussed at the Summit in any detail. How can we minimize offsets, and how can we ensure that we're using high quality offsets, that we're being honest kind of about our carbon use? The second question is what are the underlying assumptions on population growth and business growth that is encompassed in the SCAP.

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There wasn't really a discussion about that. Again, it would be good to know that we're using the same assumptions for the Comp. Plan and that things tie together. Also, what would be the benefit in terms of sustainability if we grew more slowly? Another question on the idea of parking. There is this concept that we're 2,000 spots behind just today's usage. I think it would be good to have a good understanding of office worker usage versus retail and kind of how the density of office use impacts greenhouse gas. It may be that that's even a bigger lever than charging for parking. We're going to have detailed discussions, I think, about the parking garage and the paying for parking. How high would fees have to be to actually have an impact on greenhouse gas? The fourth question I had was—actually it wasn't really a question. It was more of a comment. You had those charts on Pages 17 and 18 that showed the greenhouse reductions and then the estimated cost or benefit. It'd be great to kind of have that combined in a single kind of Return on Investment (ROI) chart with similar units. It was kind of hard to combine just looking at them, because they're measured differently. There's four questions, carbon neutral offsets, assumptions on growth, how do we price differentiate on parking, and then data on the ROI. I'll just go my comments if I could.

Mayor Burt: Did you want those questions answered tonight or are those questions you want out there for future consideration?

Council Member DuBois: Those are the four for tonight. I'm sorry?

Mr. Keene: (Inaudible).

Council Member DuBois: (Crosstalk) my comments.

Mr. Keene: I think there's some of them that are really embedded in even more detailed data.

Mr. Friend: On the offsets I would direct you to Utilities who are managing that program of purchased the Renewable Energy Certificates (REC), the renewable energy credits, that we use there with some rigor on quality. The fact that the offsets are 49 percent this year—I think they were 25 or 30 percent last year—is a reflection of the drought and the diminished hydroelectric supply which is a long-term future concern for our Carbon Neutral Electricity Program. The new idea that we're introducing there is the possibility—this is an innovation, no one's done it before—of local offsets, buying offsets that would be invested in greenhouse gas reductions here. There are legal and policy issues to be explored there. The experts that I've talked with think that is an option worth pursuing. Both ensuring quality but also direct impact locally from those. The population assumptions, I'll turn to Betty to tell us what those are, because I don't have them in my head.

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Betty Seto, DNV GL: They are based on the Comp. Plan business as usual assumptions for population.

Council Member DuBois: We're still talking about what assumptions to use for the Comp. Plan.

Mr. Friend: Which takes us to that question.

Mr. Keene: We didn't model for different assumptions and that sort of thing.

Mr. Friend: You talked about parking being 2,000 spots behind. I think that as the demand pattern shift both through pricing of parking and the rise of these other alternatives, we may see that shift. These are some of the things we need to figure out. In fact, we're asking you to decide whether or not to add more parking capacity now in the face of a future where there may be less demand. We can't time the markets. You're going to have to make a judgment call on that. I think we need more analysis and understanding there. Similarly for the question of the new garage. To your point about the ROI chart that combines those two, we're working on that. We've recognized that need, and we're trying to find the most effective way to get that to you.

Council Member DuBois: Again, comments. In terms of a target number, I don't like that to be the focus upfront. I'm an engineer, so I want to see a goal based on data and facts. I understand the concept of a stretch goal. I think that's goal, but I really want to understand the basis for it, not that we have to see how we get there 100 percent. I think understanding that ROI is a big part of it. I think with just a little bit more information, we could get to a goal. I don't necessarily want to adopt a goal and then revise it again. This is a goal for 2030. I don't want to adopt a goal, and then next year say we were off that soon. I think we would stick with it. In terms of what information I'd like to see. Macro trends, I think we're getting a lot of that which is great. I think some specific evaluation criteria would be good. Things like how leverage-able are investments; is it standalone for sustainability or does it have other benefits that are in line with City Priorities; the degree of impact. I think some rating like if a measure impacts Palo Alto locally or has a bigger impact regionally. Indication on finance. It'd be good to have some discussion if there are areas where we think grants are available. That might raise the priority. Private sector funding. Quality of life impact. You indicate some of these could actually increase, so I think that would be a great measure to kind of score these different programs. Also, some measure of kind of inertia, like how much does it cost to change. I think it would be interesting to have scoring criteria aligned with a lot of these programs. In terms of electrification, I had the

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same concern that Council Member Scharff did. I'd love to see some ideas on how we adapt a utility other than to say it's a big challenge. We need to look at sustainability as an integrated solution. I think that means across the City as well. How do we manage our utility? Also just understanding if we move to electrification, what does that do to resilience, peak loads, risk factor? I mean, there was another Report we got that said it was \$50-\$90 million to add an interconnect for the power grid. Hopefully we don't have to pay all that. That would potentially be with Stanford. Those are big costs just to ensure that people keep their lights on and their cars get charged. My overall high-level thinking is that we should pretty immediately divide these goals into two buckets: government goals that I think we'd mostly say yes to. Those are things the City has total control over. Moving our fleet to EV, defaulting to green on purchasing, minimizing gas use for City facilities. I don't think you're going to run into much objection on those things. Those are things we can probably start now. The community goals, I too would like to explore more the idea of a Carbon Tax and the idea of using market forces to encourage the behavior we want. I think this gets to some of the risk about technology and product available. It really leaves it up to the market to decide. If we're penalizing carbon usage, people can make the choice of if they want to electrify their heat or their cooking or not. Other quick comments on the Report. Again with traffic, I think we need to be able to segregate retail from commercial. Ideally, if Town and Country and Stanford Mall and Downtown shifted to paid retail parking at the same time, I don't want us to like penalize our Downtown retail again. Water reuse, a new wastewater treatment plant is on the books for some point and really looking at potable water reuse. I know you intend this, but seeing some kind of communication plan to go out and talk to a broader part of the community, maybe hitting other groups in their normal meeting times and start to evangelize this plan. Support the comments on salvage, the importance of existing buildings. I wanted to make a call out. I think it was your Lever Number Eight for information technology. Again, I think the importance of a fiber network, the ability to work from home and not commute at all is huge. As a basis for our smart grid or smart utilities, and even the idea of a Citywide smart home approach could be pretty exciting. Transportation, I think you and I touched on this briefly talking offline. I see some separation in the idea of private vehicle usage versus combustion engine use. There's this idea of people switching to EVs, which is great. Having a discussion about how we affect that shift, and then a separate discussion about shared vehicles versus private vehicles and congestion, which seems to be a separate issue really. I think it would be interesting to see some ideas on programs that would fund building upgrades, both residential and commercial. Again, we focus a lot on new construction roles. There seemed to be a lot of bang for the buck in figuring out how to take care of our existing buildings. We haven't talked about solar at all, but solar

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incentives and should we continue those. I'm also interested in pace programs which weren't mentioned in the Report. My understanding is there's this pace 2.0. Again, is that a funding mechanism we should consider? Thanks.

Mr. Friend: Thank you very much. Thanks for the suggestions of some of the evaluation criteria to use. We'll work with that and built on that. Thank you.

Mayor Burt: I'll just add a few quick comments. One is we haven't spoken much about an initiative that, I think, is part of the consideration which is a version of the school cities challenge which is a behavioral approach that was mentioned yesterday. When we look at our whole efficiency, that's going to be a big dimension. Others have spoken about that importance. The one thing I would disagree with that was stated earlier by Staff is the difficulty of retrofit on electrification. There's a level at which it's very simple. We did it in our house already. We went to Home Depot, bought three electric heaters. In the rooms that we predominantly use, we heat one room in the home. That is far and away the simplest, easiest way to achieve electrification. Our gas bill has dropped by 50 percent as a result, and we don't suffer a bit. Some of these things are a lot easier than we make them out to be sometimes. On the broader level, I think that looking at building a renewable natural gas portfolio, which was something that was proposed at the State level in just the last year or two, of over a decade building it to 10 percent of the total portfolio. At this time, we have pushback. We said the market's not there. Ten years ago, the market wasn't there for solar that it is today. In fact, some of my Colleagues may remember, it was five or six years ago when we were—about five years ago, our Utilities Department had brought forward proposals to complete our 33 percent renewable electricity portfolio with landfill natural gas only including some landfills that were basically taking materials they shouldn't. We pushed back; Staff basically said, "Here's the curve of steep escalation of the cost of renewables. If we don't bite this, it's going to get more and more expensive." At that time, it was more than 12 cents a kilowatt hour for the cheapest and really dirtiest renewable. I made the argument at the time that if they were right—their data points projected it—then everybody in Silicon Valley who bet billions of dollars including Mr. Bernstein on behalf of his company was wrong, and our Utilities Department was right. Within a year, we started seeing these drastic falls, and that regulation and creating new demand drives scaling and reduced costs. I think that we will see a lot of that. For that sort of reason, I think that a five year update is too infrequent. I think that's something. It doesn't mean we have to rewrite the plan every couple of years, but I think we're going to want to do periodic, frequent updates. This is going to be a dynamic market, and there

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will be tweaks. They're not going to be complete rewrites. Just quickly to just give another example. Someone was mentioning about the need for additional EV charging. One of the technologies that I was aware of is coming out of Europe, out of German, which is to utilize the existing wiring system of light poles as the lowest cost, new EV charging. I think it's going to have a significant impact on making EV charging on the streets widely available at low cost in the coming years. Some of these things add into other dimensions like our Healthy Cities. One of the things on gas cooking, we haven't had any discussion about the health impacts of gas cooking. There are studies over the last couple of years that this is a really under-appreciated negative health impact of gas cooking right in parallel with real advancements in being able to have highly sensitive, quick electric controls that didn't exist before. I don't want to be Pollyanna-ish about the impacts of future technology advancements, but I do think that they're real. I think we've seen whether it be in the cost of solar and renewables in the last five years or the cost and availability of electric vehicles. I mean, just in five years they are completely reversed from what many of the experts of conventional wisdom had projected. I think we'll see a lot more of that. That's one of the reasons why I think we need to do the update frequently, to be adaptive to that. Gil, you've heard a lot from the Council. I hope that this allows you to kind of absorb that range of input and come back with what may be in our next meeting ability to make certain action decisions, and then decide which ones we think we want to make in (inaudible) after that. That's going to be one of the things that we'll have to sort through. I want to thank everyone who's been involved in this whole initiative. We have a lot of work yet to do, but it's come a long ways. Mr. City Manager, did you have a comment?

Mr. Keene: Yeah. Thank you, Mr. Mayor. Thanks for the comments, and everybody's comments. We got probably about 275 comments tonight. That's a lot to look at. There was a reference earlier on about a lot of different Study Sessions scheduled. Actually really none of them are scheduled. We'll be working on trying to identify the topics, process, and a kind of master schedule. I think work a little bit with the Mayor and Vice Mayor as we're plotting out the Agendas in coming months and try to put an outline together that lets you know both the frequency and when we would be dealing with those. Of course, some of those things may need to be Action Items. Secondly, this is a Study Session, so you didn't take a particular Motion. Without engendering a whole lot of conversation, if I were to say the take-away related to the goal question, I guess I would say that the Council in general thinks that a goal for the plan is important, that 80 by '30 certainly has a lot of support. There was some interest and comments in sort of going further than that, but we haven't set that goal yet. Clearly, I don't think in any way we heard let's just sort of stay the course or anything

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like that. Lastly, this is just an issue I would just say it relates to the Comp. Plan and how a lot of things ultimately integrate. Some of this will come out of the DEIR work. We've got a lot of complex analyses and planning documents and then decision making we have to make. So much of it is driven by our hunger for data. We spend a lot of time collecting and analyzing data and drawing conclusions. We're still always subject to the assumptions of the data sets that we chose to use and the methodologies. I think when the Council talks at the Retreat some and maybe about some upcoming topics, we should identify a process that in some ways identifies the methodologies and data sets that are roughly acceptable or whatever, so we're not constantly debating whether or not we've been doing the work, particularly if we spend months and months doing something. There is not anything that we couldn't sort of say could have been done a different way. I think that'll be important to make sure we can set this out. We do something simpler, though, but similar on the Staff side where we've got a kind of demographic information group that at least meets once a year and says these are the official numbers we're going to use, rather than us publishing ten different population numbers for the City or whatever and try to identify the methodology. Just put that out there. Other than that, thank you, guys, very much.

Mayor Burt: Thank you all. That concludes this Item.

18. Study Session on the Parks, Trails, Natural Open Space, and Recreation Master Plan.

Mayor Burt: We move on to our last Item which is a Study Session on the Parks, Trails, Natural Open space and Recreation Master Plan.

Rob de Geus, Community Services Director: Good evening, Council Members, Mayor Burt, Vice Mayor Scharff. Rob de Geus, Director of Community Services. Just before we begin the slide show, I did want to introduce a new Staff member in Community Services. Her name is Kristen O'Kane; she's the new Assistant Director of Community Services. She's over there. She began in December. Really happy to have her onboard. She has a breadth of experience and background in environmental stewardship and open space conservation. She's serves as a Parks and Recreation Commissioner in San Jose. She comes to us from the Santa Clara Valley Water District where she worked as a Senior Manager. She's going to help us get this Parks Plan to the finish line this year. I wanted to make sure that introduced here. We also have MIG, our consultants, here. Lauren Schmid, principal at MIG, and Ellie Fiore, one of the Project Managers. We also have Parks Staff here. Public Works Staff have been great partners in this plan. I want to give a special shout-out to Peter Jensen, Landscape Architect. He's

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terrific and has helped us keep moving along on this project. Also the Parks and Recreation Commission, who have been outstanding. We meet every month on the plan. We have the Chair of the Parks and Recreation (Rec.) Commission, Chair Keith Reckdahl, here who will speak a little bit later and provide some additional perspective. We have a lot to cover. Our presentation is probably about 15 minutes. We'll try and get through it pretty quickly. Just to help frame the presentation, we were last here on August 31st. Staff provided Council an update at that time. We return this evening with a more comprehensive and inclusive Report on the in-depth community outreach and analysis Staff and the consultants have completed to date. All the documents referenced in the Staff Report are available on the website. As we go through the presentation here, we're going to focus on Attachment A, which is the MIG Report which provides a summary of the involvement we've been in with the community and with the Parks and Recreation Commission. That'll talk about the principles that we talked about last time plus the areas of focus and the technical analysis that the consultants have done. With that, I'll pass it on to Lauren Schmid.

Lauren Schmid, MIG Project Manager: Good evening. Thank you for sticking around and being willing to hear from us again so late this evening. We really appreciate it. At your request, Staff and MIG worked to give you a much more detailed and in-depth update. You all received that in your Packet. We organized that based on what you see up here on the screen. One of the very first things that we did based on a lot of the questions that you asked was to try to be very specific in how we define terms. We did that right upfront so that we understand when we're talking about parks, trails and natural open spaces that we're talking about the land, and we're talking about the traditional parks, the trails, the connectors within them as well as your preserves and even the natural areas and habitat that you see in developed parks, the recreation facilities on that land, and then the programs that occur there. The other thing that we did is we went into depth on the tremendous amount of technical information and analysis that's happened over the last year and a half. Again, listed up here on the screen, mapping, various planning analyses, look at each and every site, thinking about all the work that was happening on sustainability, and now there's even more. It's actually been very exciting to hear tonight from that macro scale, really delving down to the park system today. A lot of the discussion tonight has been pretty inspiring about some of the issues that have come up. I think you'll start to see the connections too. Recreation programs and then also the geographic analysis. We included in the update examples. There's many more from where we looked at the entire system and how Palo Alto fits into the surrounding communities. Each individual site where we had our landscape architects walk and look and see what was there and looked at the history. All of that is documented and is setting us up to

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develop a plan for each and every site that'll be included in the final plan document. We did this also for each of the preserves and for each of the recreation facilities. We looked in-depth at recreation programs. This was a two-step process. The first was really baselining what is the inventory, what is Community Services doing, what are other departments doing, and what are the other providers because there are lots of them out there and lots of partnerships, what are they all doing. The second part of that was starting to really crunch the data. A lot of data is generated from that, and so we really took a look at how much registration was happening, were programs meeting their goals, and have a detailed look at each of the program areas. This is one example up here on the screen; it's middle schools athletics. What the data shows is that many of those classes are wait-listed. We looked at each of the program areas in this way to get a sense of what's going on today and what might that tell us about needs in the future. The geographic analysis, this is really gets into the walkability and bike-ability of park system. We'll talk more about what we heard from the public, but we certainly heard from you all at the beginning of the process that that is something we should be looking at. When we also looked at how people get around now, a tremendous amount of them are accessing parks by walking and biking. We developed a walk shed analysis looking at quarter-mile and half-mile distances which are about a five and 10-minute walk. Just looked at all of the parks across the City and looked at the system in different ways and developed a series of maps. This is one example. What they tell us is—the white areas are areas where people are outside of our goal for providing service, and that's probably an area where we'll want to focus attention if we're trying to have an even level of service across the City.

Ellie Fiore, MIG Project Manager: Turning to community and stakeholder engagement, we really developed a program that would start at the beginning of the process and take us all the way through plan adoption. It's really fundamental to this process. We developed what we call a multi-layered program. What we mean by that is that it's both online and in person, and that we create opportunities for residents and community members to engage in ways that may take five or 10 minutes or may require or ask them to attend a monthly meeting or a quarterly meeting or stay engaged throughout the whole process. We had a concerted effort at the front-end of the process. We did what we call intercept events, where we literally just go out into the parks or to the farmers market and set up our boards and hand people stickers and ask them to tell us what's important about the park system. This is some pretty high-level input, pretty visionary. We also did an online map-based survey, which was very data-specific. We'll look at examples in a second. We had almost 500 responses. This gives us a lot of information about how people are currently using the system, the parks, and how they're getting to parks. At the end of

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2014, we had a really successful online community survey which was very comprehensive in scope and started to map forward some of the direction that will ultimately be in the Master Plan. Had almost 1,200 respondents to that. Ongoing and happening periodically, we have the consultation with the Parks and Rec. Commission which has been really robust. We'll hear more about that in a second. We have a stakeholder advisory group from various interest groups, community-based organizations, Stanford, School District, the dog owners association, that sort of thing that we meet with periodically. We also had small group or individual meetings with representatives from those groups where we'd get a little more in-depth. We've had a series of community workshops at the end of 2014, and we're planning our next one for February. Regularly we use the City's communications infrastructure to send out e-blasts, social media posts, that sort of thing. We've gotten a lot of return on our investment from that by using the systems that people already have in place. We also have currently online what we're calling a prioritization challenge which we'll talk about more in a second. That's our current online engagement exercise. These are some screenshots from the map-based survey that I mentioned. As you see in the upper right, these are all specific comments that people pinned to specific locations in and around the parks. This data gets linked to our Geographic Information System (GIS) database so we can map how people are using parks and how they're traveling there. Again, you can see a shot of the intercept event in Rinconada Park, and then some of our workshop, and some of the outputs from that. At the workshops, we did what we call a visual preference survey where we showed a series of images and asked people to tell us if they thought that would work in Palo Alto, if they loved it, if they hated it. This image here is of nature play and environmental education, so really kids getting their hands dirty. It went over pretty well. This is a snapshot from the community survey that I mentioned where we had over 1,100 responses. What we found are a number of common themes and directions that emerged and were very consistent over the different types of input. When we got into the data analysis, we found that those also dovetailed nicely, so that's really what's driving the plan now.

Ms. Schmid: Where the technical analysis and the community engagement came together are really in this piece we're calling the data summary and opportunity analysis. This was an analysis process, but it was also a process of working with the Staff and the Parks and Recreation Commission (PARC) to look at what does all this data mean and what does it mean about our options for the future. This binder here, that you see, is one of the tools where we work with the PARC and we developed a matrix to look at all of these different slices of the system and all these different pieces of data and tie them together into one place. In evaluating opportunities, we identified these nine different ways that we were going to look at all of this data.

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Some of that is objective, the current service level. Other ones had some subjectivity based on certain criteria. For each of these, specific criteria about the assumptions that went into our findings were laid out and documented in that matrix, which then ties back to each of these individual analyses and results. It's hefty, but it's ended up being a really good tool, because any idea we can track back or work with the PARC to discuss in detail. Where that's led us today is beginning to formulate some direction for the Master Plan. The first thing that we were able to distill out of that opportunity analysis are what we're calling the principles, which you saw back at the end of August and which we have added the principle of nature to based on the discussion at that session. What these really do is encapsulate the vision for the future of the park and recreation system, what Palo Alto really wants their system to exemplify. It already does a lot of these things, but the idea is to amplify them and have everything be working towards these principles. When you look then at the park system, there's some areas of focus where we want to give some attention to get even closer to that vision. These areas of focus, one of them is about distributing parks and recreation experiences across the City. That gets at equity, walkability, place making and identity, a lot of these things you've hearing a lot about tonight. Another one is improving and enhancing community center and recreation spaces across the community. Those are the formal recreation spaces which are really well used. Enhancing comfort and making parks more welcoming is another one. This is really about making all the assets that are here in the community even better with some of the simple creature comforts like shading, seating, that allow people to linger and use the space, restrooms. Sports fields, a pretty important component of the recreation system and getting more out of those because they are resource intensive. Increasing variety, we heard a lot about that. People really love what they have, but it's about getting more about the existing land base and being able to layer more things into it. Increasing health and wellness, a huge amount of the commentary really aligns with the direction that you all have been focusing attention on about health. The community really sees the park system as a way that can advance that. Off-leash dogs. Integrating nature in parks is a major area of focus and was a high priority for community members through all the outreach activities. It's not just about integrating native plants or pollinator species into developed parks; it's about connecting everything up, connecting outside of the City and also creating ways for people to experience nature. We heard lots and lots of feedback about that. Because of the type of park system you have, you have a lot of opportunity to create great opportunities for people to be outdoors and to be in nature. Finally, improving the accessibility. This is not just about accessibility for people with disabilities, though there's some important feedback from the community about the direction that they would like to go which was above and beyond Americans with Disabilities Act (ADA).

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This is about the accessibility for walking, biking, fiscal accessibility, program costs. Being mindful that many people are very fortunate in the community, but things like gym memberships are so expensive that the City may have a role in making sure there's access. The next two are about both doing more of the programming that's working really well, that people love and appreciate, but also continuing to keep looking at trends and new types of programming. Lastly but not least is expanding the system. People talked about their desire to be able to expand the system. We see some opportunities for potentially doing so or looking at different models, and we talked about that with all of you. Models like California Avenue, parklets, things like that as well as parkland extension. Finally, managing the system. That's maybe more internally focused, but it's pretty important for Staff and for you as Council that we'll see some action there. Where that leaves us today, Ellie had mentioned the community prioritization challenge and the upcoming workshop. That's structured around these areas of focus. I think some of you have probably done the prioritization challenge. As of Friday, we had 574 responses and almost as many partial responses, but we don't know how complete those are. People have responded to it really well, but we are asking them to vote with dollars, looking at different areas of focus and also different park elements. We haven't yet started to analyze that because we haven't closed it yet. The response has been really good, and we're very interested to see what the community prioritizes there. How that's all starting to wrap up is we had the community input; it led to the data and opportunities matrix. Out of that, we articulated the Master Plan principles, the areas of focus. Now, we're in the process of developing a master list of potential project and program ideas. Those have been vetted, but they are continuing to be vetted with the PARC, and then they'll be prioritized using the prioritization criteria, and then we'll finally get to a refined list which will then become part of the plan.

Mr. de Geus: That essentially concludes the Staff presentation. I'll just add that it's an interesting time. We're always in some type of planning process, it seems like. Right now, there's a number of planning efforts that are converging and supporting one another. The Comprehensive Plan, it has been very helpful to be going through the Community Services Element with Hillary and Jeremy and the Staff. I've worked with their subcommittee, the Citizen Advisory Committee (CAC), and see the overlap of that planning process and the parks planning process which has been terrific. The Sustainability and Climate Action Plan, of course, also has a lot of crossover and working with Gil. We also have the Public Art Master Plan that's also happening right now. We've been talking with Elise and Rhy Halpern about how to innovate arts into our parks and recreation facilities and programs a little more. That's been really great. Our next step at this point is, as Lauren said, to move to develop a list of programs and projects and policies

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for the Council's consideration. We'd come back to you in the months ahead. I would at this time like to ask if Chair Reckdahl from the Parks and Rec. Commission would come up and say a few words about the experience that the Commission's had working with Staff.

Mayor Burt: Welcome.

Keith Reckdahl, Parks and Recreation Commission Chairman: Thank you. Before I start, I should really thank the Staff. We've had a lot of meetings with Staff. They've been very generous with their time, and we appreciate that. The meetings have been very thoughtful and very productive. We appreciate the collaboration. It's been a lot of work, but we think we're pushing the ball forward. One thing that really concerns the Commission right now is that we make this Report very usable. We have so much data right now, it's very easy to get swamped with data. This isn't just some theoretical document; this is something that we're going to be using to design parks. We have to keep that in mind, that this is not just a core dump of data. This is something that we'll be using. The Master Plan is a high-level document, we want to keep it at that high level. Sometimes, you can't keep it at the high level. For example, dog parks. If they just say we need more dog parks, we knew that. That hides all those details like the locations and the size of the land shortage that make dog parks just a very tricky situation. That's why sometimes you need to have the details in there to support the conclusions, but we want to keep only the details that are needed. We don't want to go out and just overwhelm the user with any type of data just for the data's sake. We really are spending a lot of time addressing and studying the right level. We don't want to get bogged down in data. It's kind of like the goldilocks level, not too much, not too little, just right. In conclusion, the Staff and the Commission, this is a big opportunity; it doesn't happen very often. We want to make the most of this, and we want to end it with something that we can use. It doesn't just sit on the shelf unused. We want to make sure that this is a usable document, that it draws conclusions from all the data that we have, and that this can make our parks a better situation. Thanks.

Mayor Burt: Thank you.

Mr. de Geus: For us, we're interested in hearing Council's overall feedback on the process. We gave you a much more comprehensive Staff Report this time around. We want to get feedback on that, and then also hear your level of confidence for us moving forward to start developing those recommended policies, programs and projects to bring back to you next time. That's what I would leave with you.

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Mayor Burt: We have one speaker card. Why don't we hear from Mr. Geoff Paulsen. Welcome.

Geoff Paulsen: Good evening, Mayor Burt, members of the Council. Thanks for the opportunity. I'm Geoff Paulsen; I'm on the Board of the Canopy Tree Planting Organization and also a member of the Lee family of the Foothills Park. Just a couple of specific suggestions I have. One is I suggest that you work with Staff to develop a policy for memorial trees and groves. Walter Passmore had some good ideas. I think the Staff is capable of developing a good policy there. Another one is regarding Arastradero Road. The upper part used to be shaded by beautiful eucalyptus trees, you may remember, but in the fire they were all burned and then cut down. I would suggest that we replant Arastradero Road on both sides with oak trees to provide a shaded bike route up into the hills. Along with that, close Arastradero Road on weekends. There's a part, about a half-mile stretch, that has no driveways or anything. If you closed that to car traffic, it would create an absolutely magnificent and absolutely safe weekend recreational opportunity. Regarding Foothills Parks, this is really my true love. We used to own Foothills Park; I was a ranger there. I would suggest that we test a nonresident pass for weekday use with cars. This could be a fee-based policy that could generate some revenue and also generate some goodwill for the City. I would also suggest that we open Foothills Park to all bicycles on all inlet routes all times, any day. That would promote bicycling and goodwill from the community. Third, this is a little bit of something that people don't know that much about. The City does own an emergency easement from the valley in Foothills Park out to Los Trancos Road in Portola Valley. If the City were to pursue a recreational easement for a bike/pedestrian (ped.) trail along that route, then it could be a wonderful way for folks to ride up into Foothills Park without climbing the hill. Congratulations on great plan opportunity with the Staff and MIG. I just congratulate you on your efforts. Thank you.

Female: (inaudible).

Mayor Burt: Why don't you come up and speak, and then fill it out with the City Clerk as soon as you're done.

Tracy McCloud, Avenidas: I'm really sorry. Thank you. My name is Tracy McCloud; I represent Avenidas. I'm here to speak on behalf of our seniors. I'm tired, so I'm just going to read what I wrote. Palo Alto seniors are a very active group. Based on surveys that we've done and what we see every day at Avenidas, we know that activities in the health and wellness category are among the most important to them. They regularly participate in exercise classes and other activities to help them maintain their strength,

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flexibility and overall well-being. There are a number of people who take classes at Lucie Stern. The Avenidas walkers meet regularly at different parks and trails in Palo Alto for hikes and walks. They've told me that they feel lucky to have nearby open spaces and parks for us to enjoy. One senior even said she appreciates being able to "peacefully relate to the natural world and find mental and emotional rest." Seniors also regularly participate in lifelong learning activities such as art classes at both Avenidas and the Palo Alto Art Center as well as music classes at Lucie Stern. These types of activities satisfy the need for both creative expression and for engaging the brain in novel ways. While we cannot deny both the physical and cognitive benefits of the programs, the most important benefit may be the social one. Seniors choose to take classes and join hiking groups over solo activities because of the social aspect. Studies have shown that seniors who regularly socialize with others are less likely to become depressed, and stress and isolation are correlated with overall poor health. Working out in a gym just doesn't have the same benefit as taking an exercise class. The importance of open spaces and senior-specific recreational programs for the growing aging population cannot be overstated. In fact, more often than not what we hear from the seniors is there is not enough. As you know, Avenidas is bursting at the seams and has embarked on a plan to remodel and expand our current building. It will still not be enough. Seniors who live in the southern part of the City have very limited options in terms of accessible programs. They are very much in need of local class offerings as well as a place to meet and socialize. While some are able to get to Lucie Stern or Avenidas, for many this is challenging at best. Of course, transportation is a major concern, but health issues also prevent seniors from getting across town. Seniors are very vocal about their needs, what kinds of programs they like, and where those programs need to be. We appreciate the opportunity to be a part of this planning process, to speak on their behalf, and have already attended a number of the meetings. We look forward to continuing to be a part of this process as the plan is developed. Thank you.

Mayor Burt: Thank you. Let's return to the Council for—this is a Study Session—questions and comments. Council Member DuBois, were you first?

Council Member DuBois: This is a great Report. Thank you for a good summary and all the hard work. I really like the MIG process. I actually sent an email to Hillary about the way the prioritization survey piece worked. I think we could use that in our Comprehensive (Comp.) Plan. I did take the priority survey. My priorities came down to acquisition of additional space, distributing services across the City, and enhancing our community centers. I don't know if it's called out specifically or will be in the plan, but I think there's a big planning role for Cubberley, if we create a new community center. I'd love to see kind of a wish list of needs for that new building. On

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the middle school athletics in the presentation there, you showed it as overcapacity. I just wanted to take a second to understand that a little bit more of how that program works. This is mostly for Rob. We provide those as services, and they're the school teams. Is there an inherent conflict between the idea that everyone plays? We have limited capacity; we charge for access; we use school facilities, gyms and things. Do we need to work with the schools on how we'd run those? Are they offered in line with kind of State law about scholarships and things for extracurricular activities? How is that all handled?

Mr. de Geus: There's a long history with the middle athletic program. A long time ago, before I started with the City, the School District did run middle school athletics internally. I'm sure they did it with parents. At some point, this is what I understand, they could no longer afford to keep the program going. The City stepped in and partnered with the School District to continue the afterschool athletic program. Over the last decades I have been here, the School District has backed away from that partnership. Not in a negative way, but just backed away from it and had the City take over more and more responsibility for running the program. To the point of today, the City really runs the programs. We hire all the coaches, train all the coaches, and manage the program as part of a league. The School District provides the space, the gym space, the fields, and so forth.

Council Member DuBois: Is that something we should be working with the schools on more? Is there an opportunity for scholarships for kids who want to play?

Mr. de Geus: There isn't scholarships, but the City has a fee reduction program. It's part of City programs; all of our programs have that ability where families with low income can get a 50 percent reduction up to \$300, I believe, is the program. I think we can strengthen the partnership with the schools on this program for sure. I'd like to see more teaching Staff and physical (phys.) education (ed.) Staff in particular be part of the program and be coaching in the program and actually have that as part of the partnership.

Council Member DuBois: Don't a lot of teachers coach?

Mr. de Geus: Not a lot, but some and some schools more than others. I'd like to see it sort of written into the sort of partnership that that is something that's encouraged. We'd like to engage the School District in deepening that partnership.

Council Member DuBois: Maybe it's just where we are in the process. It felt like some of this was kind of open-ended in terms of being in fiscal reality. I

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guess maybe that's part of the prioritization process, what can we actually afford. Are you guys going to be coming back? Are we really looking at like a tradeoff between building new bathrooms versus acquiring new parks space? Is that the kind of thing that you're going to come back with?

Ms. Schmid: Yes. All of these project and program ideas, we're assigning a magnitude of cost to those. We've developed ranges both on the capital side and the operational side, so that you can kind of see the bang for the buck. There might be some things that in the short term you can easily pick those off. You may wish to commit to something that's long term and more costly because it gets you bigger benefit in the long run. That's where we're getting to at this point and where we'll be coming back to you to find out your opinions on how you make those tradeoffs. You do have a limited set of parkland, a limited set of resources. Every time somebody came to the PARC or before Council and said we want one of these in our park system, pretty quickly you'd run out of space and money and people would be elbowing each other aside. Those tradeoffs are very important.

Council Member DuBois: I don't know if this is in your scope. Are there opportunities for corporate sponsorship of gyms, buildings? We have the Arrillaga swimming pool in Menlo Park. Could we get Google basketball courts or Pallantir quidditch fields? You get the idea. I think based on the sustainability discussion we just had, it's worth calling out some of the sustainability benefits of the ecosystem. There's carbon sequestration in trees; cooling. Gil had ecosystems in there and talked about some of those benefits. One of the things that also came out was community gardens. I think one of the Acterra winners this year is a company that's doing rooftop gardens on business buildings where they actually use the produce in the cafeteria. I like the principles you guys have. I thought it was clear. I like the priorities. I'm looking forward to seeing the draft Master Plan. Thank you, guys.

Mayor Burt: Thank you. Just to remind everybody to try to be as succinct as possible, because we're running late. Council Member Wolbach.

Council Member Wolbach: Thank you very much for the Report. A couple of comments and questions. Picking up on something that Council Member DuBois brought up. I think this is a conversation that we'll obviously have to have with the School District, but I'd be interested in at least exploring how we could phase out our primacy in the middle schools athletics program. It seems that we might be moving to a place where that's no longer the appropriate role for the City. That's something we can explore with the School District. Mr. Lee brought up Foothills Park which, as I mentioned earlier, is the first place I always take people when they're visiting from out

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of town or friends who reside in the region or that are visiting from far away. I've heard a couple of different stories. What is the history of why Foothills Park is exclusively for Palo Alto residents unlike our other open space and parks? Is there any clarity that we could have about that? Before I make my comments about ...

Mayor Burt: You want the short history, right?

Council Member Wolbach: Yes, one sentence.

Mayor Burt: Rob, do you have the short—okay. My understanding is that when the property was offered, Palo Alto went to neighboring cities, and they declined to collaboratively purchase it. As a result of Palo Alto alone purchasing it, ever since it's been restricted to Palo Alto.

Council Member Wolbach: That is what I'd heard. Thank you for confirming that. I think it's time that we also talk about transitions into the future. I think it's time that we explored shifting away from the exclusivity. If Palo Alto residents are the ones and since Palo Alto residents are paying for it, I wouldn't mind even seeing additional resources dedicated to Foothills Park. I'd be happy to consideration of what kind of a fee we'd want to charge for cars for nonresidents. I'm just throwing out random numbers. Maybe \$5 or \$10 during the week, and maybe \$10 or \$20 if they come on the weekend or on holidays. That way we can provide a disincentive for nonresident vehicles and also provide an additional revenue stream. I think that's worth exploring. I also very much appreciate the comments from Mr. Lee about opening to bikes or pedestrians, hikers, joggers, all the time, and the idea of an emergency and recreational access. Tying into our conversation at the start of the meeting tonight with Midpeninsula Regional Open Space District, how we improve connectivity from Arastradero Preserve into Fields Park and to Los Trancos is something else I think we should explore. On the question of access, because so many residents increasingly, as we've discussed earlier tonight, don't drive because they're seniors, they're young or they just choose not to or cannot for disability reasons, is there any exploration of maybe working with our Planning Department as they go through shuttle revamps, how we can get access to especially Baylands, Arastradero and Foothills Park, maybe with a shuttle that runs on the weekends or something like that. Has there been any discussion about that?

Mr. de Geus: There has been some discussion about that. We're working on what we call safe access to parks or easy access to parks. We're looking at shuttles as well as walking and biking to parks, all those things.

Council Member Wolbach: I think that's something worth exploration. Council Member DuBois mentioned about acquisition and having additional

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park space. Even while we debate how much our population is going to grow in the future, it is going to grow. We want to make sure that we don't diminish the ratio of park space per resident. I think that's absolutely important. I encourage working with Planning and the rest of Staff to explore how we can leverage the demand for development to extract resources to pay for new facilities, new land, new parks space and/or also working with philanthropic opportunities. I think that's important going forward.

Mayor Burt: Council Member Schmid.

Council Member Schmid: Just quickly to support some of the comments you've already heard. Number one, demographics. I'm concerned that the City forecast for population growth is dramatically different than the School District. I don't know what that means for young people in terms of planning. It would be good to state explicitly somewhere what your assumptions are so we can have that clear in mind. Second issue is accessibility. I notice on Page 401 you have a list of draft criteria. There doesn't seem to be one of accessibility. That's Page 11 of your Staff Report. Let me just mention five or six items that occurred to me around accessibility. One, the Cubberley issue has been mentioned. It's hard to look forward. The playing fields are so important for kids around town. The possibility of losing access to those. I know right now the School District has the gyms and recreational spaces. As they start planning, those might disappear. What do we do? Access of course to other schools is important, especially the high schools. There's a whole set of issues with the school. Access to the Baylands is striking. I note that the Mountain View Baylands always has four to five times the number of people that the Palo Alto Baylands does, especially Byxbee Park. The question is why, what's going on. I note also that the traffic crossing at rush hour is virtually impossible. I wonder if that begins to undermine the golf course, the recreation fields and use on the Baylands. I'm concerned about the Baylands. New parks, one of the areas opening up probably is the easement of the Federal Telegraph building, which is in the middle of the park. Are there plans or discussions on how to use that? I note at Arastradero, I've been turned away a number of times on the weekends because there's no parking. There is a parking space behind bars which they say is not open except for special parties. Does it make sense to open that? There seems to be substantial demand for use of Arastradero. It's a beautiful park. Would seem to open up for more people. Finally, the 7.7 acres in Foothill. We are regular visitors to Foothill. I think over the last 18 months, I've looked for an opportunity when that might be open and available for people to just walk around and see it. I know we have some important public decisions to make about how to use that. We can't do it until we get a study done, but in the

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meantime shouldn't people be able to walk and see what's there and have their own dreams of how that space could be used? I think it's—to say wait two years and we'll figure out what to do. Just a question of whether among the draft criteria ought to be something about accessibility.

Ms. Schmid: The way we handled that—you bring up a question that'd be interesting to hear what other Council Members think. Accessibility is in the principles. The way it would be addressed in the criteria is in that first criteria on filling gaps. If there is a gap in accessibility that a project or a program would fill, then you would rate that highly using that criterion.

Council Member Schmid: That seems much more specific for a particular program that's missing as opposed to no one's using this, why not.

Mayor Burt: Council Member Holman.

Council Member Holman: Thank you. First off, I want to thank Staff because this is such a good, thorough, clear Staff Report. It's really is exemplary. Thank you very much for that; it's much, much appreciated. I did have some comments. I'll keep them pretty brief. One is in response to PARC's Chair. Not only a usable document should the Master Plan be, but an actionable document. I actually am intrigued by the thought of closing Arastradero Road to cars on the weekends. Sounds reasonable. Also the trees planted along the road is—Staff, it'd be good to come back on that. To follow-up on Council Member DuBois' comments a little bit on schools. I noted, for instance, where there's the map for Greer Park. It shows the school adjacent to it, but then it doesn't talk about what the impacts and benefits are of having schools adjacent to or near to parks. Shared field space, but also the impacts. How much more use does the park get because of that adjacency? Since we're on maps, I also note the next map in the Report is—in Attachment A—Foothill Park. It uses the same essential park activities as does the Greer Park, an urban park. For instance, it uses play for children, throw a ball, exercise and fitness, gathering, relaxing and enjoy outdoors. Not all of those would necessarily be the case. You're looking for different kinds of uses in an open space park than you would in an urban park. I bring that up too because one of the—I can't remember if it was a criteria or what it was. Off-leash and on-leash dog, you wouldn't want our preserves which basically is what Arastradero, Baylands and Foothills Park, you wouldn't want off-leash dogs in any of those areas. Are you going to separate in some manner the differences or separate by study and analysis and a plan for our open spaces versus our urban parks?

Ms. Schmid: They're also classified differently. The responses are definitely going to be quite different. We had some policy discussion with kind of

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cross-cutting Staff groups. I think Rob mentioned the Climate Action from Planning this afternoon. That was definitely an area where like would this apply for this kind of thing? No, this would apply for preserves, but not for the more traditional, developed parks. They will continue to be treated for their primary purpose which is preserving habitat. They are really important also to people in this community, that they are able to walk in them and experience nature and that kind of thing. We are not looking at recommending activities that would take away from that. I think that that's been pretty clear direction from the PARC, from the public and from any kind of analysis that looks at those. We will make sure that that is clearer.

Mr. de Geus: I would just add to that, Council Member Holman. I think it's a good question. They're very different, our urban parks and our open space properties. Sometimes we talk about them sort of as similar in the Report. I think we need to fix that. I would add that we are going to have companion plans to this Master Plan that speak much more deeply about our open space properties. For instance, in July we hope to start a Comprehensive Conservation Plan the Baylands to help the Ranger Staff manage wildlife and habitat and vegetation. This plan is not going to get into those kind of specifics. It's really looking more at the developed areas of the open space properties. If that helps. It can be a little bit confusing because the title does include natural open space and trails. It's predominantly parks and recreation spaces and facilities as the focus of the plan.

Council Member Holman: I'm not concerned about the title. I'm just concerned of like how they're organized within the Report. Thank you for that. Baylands Comprehensive Conservation Plan, I presume that'll be in conjunction with and in concert with the Baylands Master Plan that exists.

Mr. de Geus: Absolutely.

Council Member Holman: Down the line, I know you're going to look at this. I just want to get it out there, not to steal Council Member Kniss' thunder here. Natural versus artificial turf in our parks. With our Parks Plan to integrate, when we have clear direction on this, our water plant tree programs, landscape plans that we have those. I think Council Member DuBois maybe mentioned this; somebody did. Highlight the benefit of trees, the positive carbon impact they have and the cooling. I think we can't overemphasize that enough. I think there was one last thing, but it's escaping me at the moment. I guess I will leave it there. Thank you for—yes. Having to do with Foothill Park and opening it up. The only thing that I would say about that is just that Foothill Park is really more like a preserve, from my perspective, than a park. As we're looking at any change of use or

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intensity of use, that we look at what the impact might be on the facility or some kind of limited increase in access. It's really a preserve from my perspective. That's it for me. Thank you.

Mayor Burt: Council Member Kniss.

Council Member Kniss: I'm delighted Council Member Holman just mentioned the Foothill preserve aspect. There are few issues that get our residents more exercised, Cory, than Foothill Park. It is just what the Mayor spoke about. It was offered to everyone, at least as I have read about it. Apparently there was some bitter feelings as a result of not getting any support from other communities. That has persisted obviously through the years. A couple of things have changed. I've often thought of it as sort of a Prop 13 kind of thing. It sounds so easy, but try to change it. After the bought the Arastradero (sic) property which is on Arastradero Road, we then made it possible to have a foot path from Arastradero through Foothill Park. When Pat asked earlier about how do you get from here to the sea, there actually is a way to do that. Also during the week, almost anyone can go into Foothill Park. There's nobody at the gate. In good part, I think we cut back on that a long time ago because of the cost. Am I right? If you go up there during the week, there's ...

Male: That was a secret.

Council Member Kniss: That's a secret. There are many ways to access it, and you can always walk in. There's no question, you can walk in. As far as I know, you can bike in during the week for sure. I would agree with Karen, this has a preserve feeling to it rather than a park. It is an absolute jewel. There's no question. Let me ask one more thing which is about—also I want to commend ... I know Johnson Park was done a long time ago, but it's often one of my walking routes. There's hardly a park in town that is more intensely used by families, little kids sliding down that cement slide on those cardboard boxes. That's a park that all little kids like. One last question. On Page 13 of what you're calling your parks, trails and so forth, initially I looked at this, and I thought there are going to be walking routes. It'll tell me how far it is, a quarter mile, a half mile or whatever. I realized of course that's not the case. This simply tells you how far you are from a park. When I look at the white spots here, that simply says I cannot get to a park by walking within a half a mile. Is that correct?

Ms. Schmid: That is true. Using this, the existing street and trail network as it is today.

Council Member Kniss: I'm sure there'll be discussion about that in the future as to how to provide service into those areas. I would suggest for the

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future and maybe not as part of this plan, Rob, I would love to see indications throughout the City of how long does it take to go from Oregon to Embarcadero, Embarcadero to the creek, and so forth. I think people are very motivated by knowing how far. Frequently in other cities and other parks, I often see signs indicating here's a mile roundtrip, here's two miles, three miles. This is a City where people love to walk. I certainly must have covered my hundreds of miles through the years. It's fun to walk here; it really is. It's always fun to know just how far you've actually gone, unless you have your pedometer on or your Fitbit. I think those are my comments. I think we have a fabulous park system. I think we're the envy of lots of other cities for the distribution. As I recall, we have—is it 4,200 acres without my looking at it again? Between Foothill and our local—we have 36 local parks as I remember.

Mr. de Geus: A little over. Yeah, 37 parks altogether if you include the open space properties. Over 4,000 acres.

Council Member Kniss: Which is phenomenal. Thanks, and thanks for doing a great Report. I hope somebody runs a picture of that in the press somewhere, to show what you've actually—it looks like its two inches high or three.

Council Member Berman: Seven.

Council Member Kniss: It's actually seven inches high. Thanks so much.

Mayor Burt: Vice Mayor Scharff.

Vice Mayor Scharff: Thanks. First of all, thanks for the Report. I actually wanted to say I've been running in the Baylands now for the last six months or so, like every Sunday or so. I've got to say it's really magnificent down there, especially right now. I mean, the green hill, the way it's all come in. It just looks amazing. Council Member Schmid's point, I actually run from East Palo Alto all the way down past Shoreline. I can tell you when you get to Mountain View, it's like a ghost town. It's the opposite. There are people passing me, walking all over the past. Our Baylands are actually on a Sunday morning between—I don't know—between 8:00 A.M. and noon are far more crowded. I actually think people are out there really enjoying the Baylands right now when I go out there. I wanted to say that I actually have the opposite experience. I'm out there every weekend now covering a lot more miles probably. Kudos to you for what's going on in the Baylands. It looks great. I have noticed there's a couple of fences on levees that I think we might be able to open up and have alternative paths to Mountain View. I'd encourage us to look at that if we could. I think that'd be great. The other thing I wanted to address is all my Colleagues, we've all talked

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about how we'd like to keep—at least most people have addressed this—the parkland per resident the same or have made comments that they'd like to continue that. From what I understand—correct me if I'm wrong—it's two acres per 1,000 residents of neighborhood parks. I don't believe in aspirational stuff. I think it's silly. I think you either do it or you don't. You have at least a plan to get there. I guess I was going to ask. I noticed when did the Citizen Survey we just got that said that since 2013 we've—I wrote it down—had 1,470 residents move in. Do we have my 2 1/2 acres bought in the last two years? If we're serious about this rather than just say it because it sounds like the right thing to do, there are a lot of corner lots that come available. I drive around town, and I see a corner lot all over the place. They would look great as little, mini parks. I guess the question is how do you fund it. If we really have this plan, then we need to basically come up with a funding plan which is some sort of fee structure or something that works. Otherwise, we can just say we want to do it, but it means nothing. I think we look foolish frankly, saying it and then not doing it. When was the last time we bought a little neighborhood parkland? I think that's something we should do. There's also these little pieces of land and pocket park opportunities that might exist. I know we've been doing some of those in the past. I see them as well. I think they look great. The more of those little opportunities—I like those. As to opening up Foothill Park, I also fall in the category that it's a preserve, and that we should be sensitive to how much we open up. The one thing I did think with equity and fairness, frankly, is Stanford opens up the Dish to us, and I think we should open it up to Stanford people. They weren't part of that not buying it.

Council Member Kniss: (Inaudible).

Vice Mayor Scharff: I think they open it up. I do. I think it's out there; it's available; there's tons of people using it. We use their campus for recreational all the time. I think that's something we should consider. Thanks.

Mayor Burt: Council Member Filseth.

Council Member Filseth: At the risk of saying something bad, if you go up there on a bike, nobody every checks. First of all, I think it's been fun to watch this evolve. I think you guys have been very methodical and organized and systematic about this. Looking forward to seeing the results. I just wanted to chime in briefly on the population issue that Council Member Schmid brought up and also Wolbach and Greg did. I think it's relevant to the supply of services in town including parks. I think one difference between the school forecast and the City forecast on this stuff, I think it's

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timeframe. My understanding is the school forecast is like four or five years. Whereas, anything involving land in the City is going to be very, very long term kind of things. It's not going to change much from one year to the next, but it will over decades. As you folks look at this, I hope the Master Plan is going to look at a multiple decades kind of timeframe for these kinds of things as opposed to a few years. As to the number, I know there's been some dialog as to what the relevance of this number is and so forth. If you look in Policy C-28, I believe the number is actually four acres of in-town park space, two neighborhood and two District, is how it works. The number we're at right now, I think there's like 165, 175 acres in town right now. The number we're at is actually 2.65 or 2.7 or something like that. The City of San Francisco actually has four acres per 1,000 residents. I think that's where those numbers come from.

Mayor Burt: Let me start with this issue of whether we should continue to have a goal of two acres of neighborhood park per 1,000. I was involved with getting that adopted way back when. We knew that we didn't have it at that time. Having that as a policy, for instance, enabled us in the Heritage Park. We adopted it right around that timeframe, and that was an important point of leverage in order to get two acres of Heritage Park for a neighborhood that hadn't had a park in it. There's value in it even if we don't have it. For instance, we have a big Fry's development. I expect that would be part of the conversation there. I think there's a value there. In recent years, we've looked at resourceful ways to be able to add small amounts of parkland where it's needed. I wanted to add that it's not merely a question of distance. It's a question of crossing major arterials. I want to make sure that that's in there. That was discussed a number of years ago. It's basically kids shouldn't have to cross Oregon Expressway to get to a park. We've added just a few pocket parks. Hopkins Park near Chaucer Bridge, that was actually dedicated parkland. All of Hopkins Park along the creek is dedicated parkland. We don't think of it that way. We carved out a little area for a pocket park for a neighborhood that had none. We did that on Matadero Creek just a couple of years ago in a similar way. It's just like what we've done on California Avenue (Cal. Ave.) where we were sitting there with four lanes. It didn't become park, but it's wider sidewalks, it's those kinds of things. We need to think creatively about City-owned land. In some cases, it's already dedicated parkland that's way underutilized. In other cases, it was the same thing on Matadero. That was City-owned land; we didn't have to buy it. Those kinds of thinking on how we stop looking at some piece of land as it's always been that way. Suddenly, it's an opportunity if we think of it differently. I did see a reference to additional community gardens in particularly south Palo Alto. I really want to support that. I think that there are some areas especially in our District parks that lend themselves to that. This can also be something that's done in some of

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these little pocket locations. They don't need to be big. As well as outside of the subject here, but to revisit what Council Member Holman and I had been pursuing is in multifamily development to look at having that. I had just a quick comment on the Mountain View Baylands. The crowds that are there are there for the aquatic center and the restaurant. That's what draws the crowds there; otherwise, I think we're at least comparable in that. I do want to support looking at these various proposals by Mr. Paulsen on both the Arastradero area and Foothills. I concur. I'm up at Foothills as often as anybody. Most weekdays, there's nobody at the gate. Of course, you don't know that if you're not a resident and you have to drive all the way up there to find out. Really the only time that we have anything resembling fairly full occupancy is from late spring to early fall on the weekends. All the rest of the time, it's way underutilized. I think that a proper compromise between residents who still feel that we bought and paid for it, it ought to be ours, from way back when, is to strike that balance, that they won't have their access in any way compromised. I don't know what it harms us to allow others to use the park when there's no competition for it. It just doesn't hurt us. I do want to say on the 7.7 acres at Foothill, we actually had a Council policy action. That should not be superseded by Study Session comments by any of us as individuals. When we take a vote, we're not trying to undermine that in different ways. It can be revisited in the future, but not through this process. There was a question on dog parks in here. I agree that there's a need. We had discussions, and I keep seeing it not happen because we kind of think in a binary way. We were proposing at Pardee. I think it was originally proposed in an area abutting homes or right across the street from homes. People objected, and I think that's somewhat reasonable. We have space there to do it without abutting the homes. Put a buffer in and go do it. I've been mystified by our struggles on figuring out how to strike the right compromises between legitimate neighbor concerns and the need for that. Finally, I just want to touch on this one thing about the middle school athletic programs. Colleagues brought it up for reasons that I concur with, but there's another dimension to this that has not been discussed. Two or three years ago, the State court system ruled that all forms of public education must be open to all without mandatory fees. This program that we've adopted was set up before that clarification occurred in, I think, the State supreme court and subsequently codified in new State law. This is why we are no longer running the summer school program for the School District. We're not in violation of the law, but I believe they are. We're supporting it and complicit in their actions. It needs to be available for all students. The trophies are in the trophy case. They wear a school uniform. It's a school program that we pay for and run. We're not the only District that does it wrong, but this has been pretty clear now in State law and based on the State Constitution interpretation. I have a real concern that this is going on, and there's not a financial need for it really anymore.

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either. I think this needs to change. I don't have any problem with us supporting those programs. I just wanted to bring that out and make sure everybody understands that. We have scholarship programs, but there are students whose families may not qualify for scholarships but who are not going to send their kids because they're making financial choices. These are school programs that they're supposed to be all entitled to participate in. Our voluntary transfer program kids, are all of them participating? I think we've really got a social responsibility on this and a legal one. I think we need to bring this up and not feel intimidated by the School District pushing back. It's the right thing to do and the proper legal thing to do. Those were all my comments. I also want to thank everybody involved in this. It seems like it's a really healthy, comprehensive and open process. I look forward to all the outcomes. I'm sorry, one other thing. I didn't see anything in the discussion about—we used to have, for instance, the snack shack at Rinconada. I didn't see what had happened there. I just want to cite that when we as a neighborhood worked to create Heritage Park, we had a survey. Typical Palo Alto, we had people who were experts in conducting these kinds of meaningful surveys. It was done in a sophisticated way. One of the things was what would you want in a snack shack today. At that time, it was a 1990s definition of a snack shack. I want to be able to get fax paper there too and a *New York Times* or whatever. That would be different now. If you ask people, "Do you want greasy hamburgers," you may not get as much support as if you ask would you like to get an espresso there or whatever. I'm not sure if we're asking the right questions. It also goes into trip reduction, because you have all the people in that neighborhood who will walk to that instead of driving places. I want to make sure those considerations are part of it too. Council Member Berman. I'm sorry, did I miss you?

Council Member Berman: No, you didn't. I didn't think. Sorry for missing the first round. Two additions to what Mayor Burt was talking about. We've had some acquisition of parks, but just repurposing and reutilizing. Scott Park next to Heritage Park and El Camino Park are two other areas where, as we've made improvements, I think we're also utilizing much more acreage in those parks. Another issue kind of combining what we were talking about earlier tonight. I didn't notice anything—maybe it's because this isn't the appropriate place for it—about water usage in our parks and how we can decrease the amount of water we use while still maintaining the level of usability that we want. I don't know if that's something that—maybe the answer is this isn't the right place for it. I figured I'd ask.

Mayor Burt: There's actually a segment on increased native plant landscaping in the parks. I want to commend that. That ties in with what you're talking about.

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Mr. de Geus: It will be included, and we'll be recommending policies for later to water conservation.

Mayor Burt: Council Member DuBois, you had one final wrap-up.

Council Member DuBois: I just want to clarify I support the middle school sports programs. I'm not saying we should kill them. I just want to make sure that we're working with the schools better to do that.

Mayor Burt: Last one, Council Member Holman.

Council Member Holman: I was just trying to find the name of it. We can't direct to one entity the—say we were going to have a coffee cart or something like that in parks. I do know that the Downtown Streets Team has a coffee cart program. (Inaudible) maybe about expanding the services that they would provide. Just keeping that in mind, it might be a good way to accomplish good and good.

Mr. de Geus: We had a meeting with them last week actually about that very thing.

Mayor Burt: Great idea. Thank you all. That concludes this Item.

19. ~~FY 2015 Performance Report, the National Citizen Survey™, and Citizen Centric Report.~~

Inter-Governmental Legislative Affairs

Mayor Burt: I see something down on inter-Governmental Legislative Affairs. I don't know what that's about.

James Keene, City Manager: It's just a standing Item we keep just in case we had something we had to report. Nothing to report.

Council Member Questions, Comments and Announcements

Mayor Burt: Council Member Questions, Comments or Announcements. Council Member Kniss.

Council Member Kniss: I think there's a lot going on this week. The Peninsula Division will be having their quarterly dinner this Thursday night. I realize there's also a High Speed Rail meeting going on that night as well. There is a dinner. It's in Mountain View at Don Giovanni's. You should get a note soon from Seth Miller who is the new—if any of you remember Jessica Mullen from before, this is the new Jessica. When you see something from Seth Miller, it will have to do with the Peninsula Division of the League.

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Mayor Burt: Just want to remind folks that we have a introduction to the new Project Safety Net Director on Wednesday evening at 6:00 P.M. Council Member Holman, I believe that you wanted to close the meeting in someone's name.

Council Member Holman: Yes, thank you, Mayor Burt. I did want to. It so happens that Geoff Paulsen is here, who is the nephew of Dr. Hewlett Lee who passed away most recently. For anyone who doesn't know, Dr. Lee was the son of Russell Lee who as one of the original founders of the Palo Alto Clinic. He was, in his own right, a remarkable surgeon and teacher. He also, for those who don't know, was responsible for some early health care legislation. He personally drafted some of the legislation that led to the Medi-Cal program, that made health care accessible to the poor. Lastly, there was a story I'm very fond of and he was fond of promoting and liked to tell. It was about his aunt, I believe that would make her, grandmother.

Male: No, his mother.

Council Member Holman: His mother, yes, of course. His mother, Dorothy Lee, the wife of Russell Lee. At one point in time when Russell Lee was working with someone and considering the acreage that now Foothill Park, converting that into a horse ranch. There was a barn built which is now the interpretive center. Mrs. Dorothy Lee just really was not fancy to that proposal. She said, "I own 50 percent of this acreage." When Russell Lee asked Dorothy Lee which 50 percent. She said, "Every other square foot." That kept that proposal from going forward. That ultimately led to the Lee family selling to the City of Palo Alto some of the property that became Foothills Park. Over time, they donated some other land that became Foothills Parks. I'd like to adjourn the meeting tonight in honor and recognition of Dr. Hewey Lee.

Mayor Burt: Thank you. So done. Meeting's adjourned.

Adjournment: The meeting was adjourned in memory of Dr. R. Hewlett Lee at 11:29 P.M.