



TOWN OF PORTOLA VALLEY ^{Page 1}

6:00 PM – Special Meeting of the Town Council

7:00 PM – Regular Town Council Meeting

Wednesday, October 26, 2016

The Sequoias

501 Portola Road, Portola Valley, CA 94028

SPECIAL MEETING AGENDA

6:00 PM - CALL TO ORDER AND ROLL CALL

Councilmember Aalfs, Councilmember Wengert, Councilmember Richards, Vice Mayor Hughes and Mayor Derwin

ORAL COMMUNICATIONS

Persons wishing to address the Town Council on any subject may do so now. Please note however, that the Council is not able to undertake extended discussion or action tonight on items not on the agenda.

BROWN ACT REFRESHER TRAINING

ADJOURNMENT

7:00 PM REGULAR MEETING AGENDA - CALL TO ORDER AND ROLL CALL

Councilmember Aalfs, Councilmember Wengert, Councilmember Richards, Vice Mayor Hughes and Mayor Derwin

ORAL COMMUNICATIONS

Persons wishing to address the Town Council on any subject may do so now. Please note however, that the Council is not able to undertake extended discussion or action tonight on items not on the agenda.

1. **PRESENTATION** – Proclamation Congratulating the Woodside Priory on its 60th Anniversary (3)

CONSENT AGENDA

The following items listed on the Consent Agenda are considered routine and approved by one roll call motion.

The Mayor or any member of the Town Council or of the public may request that any item listed under the Consent Agenda be removed and action taken separately.

2. **Approval of Minutes** – October 12, 2016 (4)
3. **Approval of Warrant List** – October 26, 2016 (15)
4. **Appointment by Mayor** – Request for Appointment of a Member to the Conservation Committee (24)
5. **Report by Administrative Services Manager** – FYE 06/30/16 Interfund Transfer (26)
6. **Recommendation by Town Clerk** – Resolution Adopting SB 415 California Voter Participation Rights Act (27)
 - (a) Adoption of a Resolution of the Town Council of the Town of Portola Valley Moving to Even-Numbered Year Elections in Accordance with the California Voter Participation Rights Act (Resolution__)
7. **Report by Town Manager** - Survey of Residents regarding Automatic License Plate Readers (33)

REGULAR AGENDA

STAFF REPORTS AND RECOMMENDATIONS

8. **Report by Administrative Services Manager** – Update on 2015 –'16 Actuals (34)
9. **Recommendation by Town Manager** – Proposal to Leave SAMCAT (35)

PUBLIC HEARING

10. **PUBLIC HEARING - Recommendation by Deputy Building Inspector** – Adoption of the 2016 California Building Code (66)
 - (a) First Reading of Title, Waive Further Reading, and Introduce an Ordinance of the Town Council of the Town of the Portola Valley Amending 15.04.20 [Amendments to the Building Code], and 15.04.030 [Administration of the Building Code] of Chapter 15.04 [Building Code] of Title 15 [Buildings and Construction] of the Portola Valley Municipal Code (Ordinance __)

11. **Recommendation by Sustainability & Special Projects Manager – Review and Adopt Ordinance and Related Findings to Amend Chapter 15.10 [Green Building] of the Portola Valley Municipal Code (82)**
 - (a) First Reading of Title, Waive Further Reading, and Introduce an Ordinance of the Town Council of the Town of Portola Valley Amending Chapter 15.10 [Green Building] of Title 15 [Buildings and Construction] of the Portola Valley Municipal Code (Ordinance No. ___)
12. **Recommendation by Public Works Director - Ad-Hoc Committee Recommendation for Appropriate Signage to address Roadside Parking on Portola Road at Windy Hill Preserve and Authorize Parking Citation Infraction Amount (194)**
13. **COUNCIL LIAISON COMMITTEE AND REGIONAL AGENCIES REPORTS (201)**

Report by Town Council Members – Brief announcements or reports on items of significance for the entire Town Council arising out of liaison appointments to both in-town and regional committees and initiatives. *There are no written materials and the Town Council does not take action under this agenda item.*
14. **Town Manager Report (202)**

WRITTEN COMMUNICATIONS

15. **Town Council Digest – October 14, 2016 (203)**
16. **Town Council Digest – October 21, 2016 (215)**

ADJOURNMENT

ASSISTANCE FOR PEOPLE WITH DISABILITIES

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Town Clerk at (650) 851-1700. Notification 48 hours prior to the meeting will enable the Town to make reasonable arrangements to ensure accessibility to this meeting.

AVAILABILITY OF INFORMATION

Copies of all agenda reports and supporting data are available for viewing and inspection at Town Hall and at the Portola Valley Library located adjacent to Town Hall. In accordance with SB343, Town Council agenda materials, released less than 72 hours prior to the meeting, are available to the public at Town Hall, 765 Portola Road, Portola Valley, CA 94028.

SUBMITTAL OF AGENDA ITEMS

The deadline for submittal of agenda items is 12:00 Noon WEDNESDAY of the week prior to the meeting. By law no action can be taken on matters not listed on the printed agenda unless the Town Council determines that emergency action is required. Non-emergency matters brought up by the public under Communications may be referred to the administrative staff for appropriate action.

PUBLIC HEARINGS

Public Hearings provide the general public and interested parties an opportunity to provide testimony on these items. If you challenge any proposed action(s) in court, you may be limited to raising only issues you or someone else raised at the Public Hearing(s) described in this agenda, or in written correspondence delivered to the Town Council at, or prior to, the Public Hearing(s).

**PROCLAMATION OF THE MAYOR CONGRATULATING
THE BENEDICTINE MONASTIC COMMUNITY ON THE 60TH ANNIVERSARY OF THE
FOUNDING OF THE WOODSIDE PRIORY BY FATHER EGON JAVOR, OSB AND
HIS FELLOW BENEDICTINE CONFRERES**

WHEREAS, IN 1955, SEVEN Benedictine monks from the Archabbey of Saint Martin in Panonhalma, Hungary were living in exile in the United States, having fled from Communist oppression in their native land; and

WHEREAS, Under the corporate title of the Benedictine Fathers of the Priory, they purchased the former Gillson Ranch at 302 Portola Road and took possession of the property on November 10, 1956; and

WHEREAS, Father Egon Javor, OSB on November 11, 1958 celebrated the first Mass of Thanksgiving on the grounds of the future Woodside Priory and established the Benedictine monastery of Saint Steven the King; and

WHEREAS, From these humble beginnings was founded the Woodside Priory School a year later.

NOW, THEREFORE, be it resolved that the Town Council of the Town of Portola Valley, congratulates the Benedictine Monastic Community on the 60th anniversary of the founding of the Woodside Priory by Father Egon Javor, OSB and his fellow Benedictine confreres.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the Town of Portola Valley to be affixed hereto this 26th of October, 2016.

By: _____
Maryann Moise Derwin, Mayor

PORTOLA VALLEY TOWN COUNCIL REGULAR MEETING NO. 937, OCTOBER 12, 2016

CALL TO ORDER AND ROLL CALL

Mayor Derwin called the Town Council's Regular meeting to order at 7:00 p.m. and led the Pledge of Allegiance. Ms. Hanlon called the roll.

Present: Councilmembers Jeff Aalfs, John Richards, Ann Wengert; Vice Mayor Craig Hughes, Mayor Mary Ann Moise Derwin.

Absent: None

Others: Jeremy Dennis, Town Manager
Leigh Prince, Town Attorney
Debbie Pedro, Planning Director
Susan Cope, Administrative Services Manager
Sharon Hanlon, Town Clerk

ORAL COMMUNICATIONS

Monika Cheney, 158 Goya Road, said that Windmill School is very excited and grateful to have the approved CUP and Zoning. She said they are in the final building permit approval process. She said they received the permit fee worksheet from the Town indicating an estimated total of \$49,733 in fees. She pointed out Windmill School is a not-for-profit business that serves primarily residents of Portola Valley. She said this permit fee bill represents 10+ percent of their yearly operating budget. She said the Town has an exemption policy for below market rate housing, and she realizes the school is not one of the examples of something that would qualify; however, she asked that the Town Council consider and discuss a waiver or reduction in the plan check fees for non-profit organizations such as the Windmill School.

CONSENT AGENDA [7:03 p.m.]

- (1) Approval of Minutes: Town Council Regular Meeting of September 28, 2016.
- (2) Approval of Warrant List: October 12, 2016, in the amount of \$151,401.60.
- (3) Appointment by Mayor – Request for Appointment of a Member to the Parks & Recreation Committee.

Councilmember Aalfs moved to approve the Consent Agenda. Seconded by Councilmember Richards, the motion carried 5-0, by roll call vote.

REGULAR AGENDA

STAFF REPORTS AND RECOMMENDATIONS

- (4) Recommendation by Administrative Services Officer – Update on Annual Audit for FYE 2015-'16.

Susan Cope, Administrative Services Officer, provided a verbal update regarding the Annual Audit for FYE 2015-2016. She said Maze & Associates performed the audit last week. She said as part of their annual audit, as occurs every year, some journal entries were reclassified, which staff performed immediately. She said the audit went smoothly with no notable exceptions, and they look forward to a good report.

Town Manager Dennis said it was a pleasure to share the very positive audit, which speaks to the hard work of Susan Cope and her staff, whose efforts rarely get to be formally acknowledged. Councilmember Wengert agreed with Town Manager Dennis. She said it is the unsung part of what staff does and appreciates their work to continue the strong track record of audit reports. Vice Mayor Hughes added that it was a great job, particularly since it was their first year doing it.

(5) Recommendation by Town Manager – Proposed Continuation of Municipal Water-Use Reduction Targets.

Town Manager Dennis said staff reached out to the Conservation, Parks & Recreation, and Water Conservation committees to ask for input about Cal Water's 10 percent reduction target. He said the drought is expected to continue for some time. He said the drought has not been kind to the Town fields and has stressed them so that water does not have the same impact as before the drought. He said Public Works Director Howard Young and Sustainability and Special Projects Manager Brandi de Garreaux put together an enormous dataset on all of the water use in any part of the Town facilities. He said the committees agreed that the Town could do nothing beyond 10 percent reduction. He said the fields and facilities needed to be considered with a medium- to long-term frame of mind related to the drought. He said it was a wonderful collaborative effort and the committees are very eager to assist staff and be part of the set of solutions moving forward. He said staff will engage with the three committees on the water conservation issues, with a meeting already scheduled between the Conservation Committee and Parks & Recreation Committee. He said data collection and analysis will continue, which has been found to be incredibly valuable. He said the proposals will eventually be brought before Council for review.

(6) Recommendation by Town Manager – Consideration of SB 415 – California Voter Participation Rights Act and Consolidation with a Statewide General Election Date.

Town Manager Dennis presented the staff report regarding SB 415, the bill signed by the Governor on September 1, 2016, mandating that cities and towns shall not hold an election other than on a statewide election date if holding an election on a non-concurrent date has previously resulted in a significant decrease in voter turnout. He said local elections held in odd numbered years averaged 42 percent less than the statewide election years. He described the options available to deal with the impacts this has on Portola Valley. Town Manager Dennis thanked Town Clerk Sharon Hanlon for all the work in compiling the data and putting together the staff report.

Vice Mayor Hughes asked if an election held in 2017 would be additionally costly since the law is not effective until 2018. Town Manager Dennis said since the other cities will be extending their terms, a 2017 election would be costly.

Vice Mayor Hughes asked if this applied to other elections that occur in odd years, such as UUT renewals, etc. Town Manager Dennis said all the elections would need to be shifted. Town Attorney Prince said the UUT would remain in place, but the vote for the reduction from 5-1/2 to 4-1/2 percent, which occurs every four years, would be shifted.

Councilmember Wengert asked what the likely differential would be in terms of costs incurred by the Town by going one cycle versus another and asked regarding the general cost of an election. Town Clerk Hanlon said the normal odd-year elections run around \$8,000. She said the County advised her that a standalone election would cost an estimated \$75,000. Mayer Derwin said the prevailing thought amongst the people she's talked to is to not hold an election in 2017 and extend terms one year, holding the next election in 2018. She said if Portola Valley chooses to maintain the odd-year election, it is likely to be very expensive. Councilmember Richards said he is hearing the same thing in the County – that most cities will be extending a year. In response to Councilmember Wengert's question, Town Manager Dennis said San Mateo will have an election in 2017, but it will be for a five-year term. Vice Mayor Hughes added that San Mateo is also doing a charter amendment to extend the people who are currently serving who would expire in 2019.

Steve Hedlund said vote by mail was significantly less expensive and asked if that was an option to consider. Ms. Hanlon said the vote by mail trial in 2015 was successful but there has not been a decision made by the County Election Officer as to whether it will go all vote by mail.

With no further comments or questions, Mayor Derwin brought the issue back to the Council for discussion.

Councilmember Richards said the Town obviously has to make the change. He said the easiest thing to do is extend the terms and pursue that through the public process.

Councilmember Wengert said it makes sense that the Town should not have odd-year elections, but some discomfort comes in the Councilmembers deciding to extend their own terms. She asked if there were any other data points to consider. Town Manager Dennis said staff's review was solely from a cost perspective, which made it easy to recommend the option of extending the terms.

Councilmember Richards agreed and said he was somewhat uncomfortable with the Council making the decision, although he agreed it made sense to make the change to even years right away. He asked if there were any modifications that could be made to make it as public as possible.

Vice Mayor Hughes said the short deadline did not provide a lot of flexibility. He said this was authorized by law, which somewhat eases his comfort about the Council making this decision and said there did not seem to be much of a choice considering the financial impact.

Town Attorney Prince said the Elections Code authorizes the addition or subtraction of one year of term for situations like this. She said the odd-numbered election years was adopted in 1987.

Jon Silver, 355 Portola Valley Road. Mr. Silver said he recalled making the decision as a Councilmember to consolidate the School Board elections when they could have chosen general or statewide elections. He said they did not extend their terms but shortened them, because he did not feel it was right, without voter approval, to lengthen his own term. He said the reason they chose odd-numbered years was so that folks could focus fully on local government and not be distracted by national and statewide campaigns. He was not supportive of the SB 415 mandate.

Vice Mayor Hughes said unfortunately there is no flexibility because if their terms were reduced by a year they would be up for election next week.

The Town Council approved consolidation with the statewide general election, occurring on even years, and extending two Councilmembers' terms from 2017 to 2018 and three Councilmembers' terms from 2019 to 2020. After Town Clerk Hanlon explained the costs for an odd-year election, Mr. Silver said that was certainly a different order of magnitude.

(7) Recommendation by Town Manager – Draft Housing Options Strategic Plan – Follow-Up Discussion.

Town Manager Dennis presented the staff report recommending adoption of a draft housing options strategic plan.

- **Recommendation One:** Direct the Planning Commission to review amendments to the Second Unit Ordinance that could increase the maximum allowable size of the unit; allow second units on smaller (<1 acre) properties; waive permit fees; and possibly subsidize development cost.

Councilmember Wengert thanked staff for a terrific report. She asked Planning Director Pedro how many additional properties could qualify for the 1,000-square-foot second unit by reducing the lot size requirement to 2 acres. Planning Director Pedro did not know the exact number. She said it could be researched or taken to the Planning Commission as part of their review. Councilmember Wengert said it

would also be useful to the Council and the Planning Commission in determining impact if they could see the breakdown, including properties of less than 2 acres. She asked if the idea had come up regarding modular housing as an approach to second units. Planning Director Pedro said modular or prefab housing is currently permitted and allowed, although they don't see a lot of them. She said they tend to see more custom homes, even for the smaller second units. She said they have had inquiries but does not know if any applications have actually been submitted.

Councilmember Richards said there was some discussion regarding allowing second units on smaller lots and finding some smaller lots that have existing legal non-conforming second units that might be good models. Planning Director Pedro said that has not been researched yet, but it is a good idea.

Mayor Derwin asked if people were allowed to put a trailer on their property as a second unit. Planning Director Pedro said those would be considered RVs and would fall under a different code requirement. She said they would have to be outside of the setbacks and falls under a different set of construction codes. She said the tiny houses movement has brought up an inquiry. She said, however, that once the Town provided the requirements, that person hasn't come back.

Mayor Derwin called for questions or comments from the audience.

An unidentified individual asked if the people in Woodside or Atherton have been approached regarding these issues. Town Manager Dennis said there has been no specific conversation with them related to the staff report before the Council tonight; however, there have been general conversations on a staff-to-staff level. He said his colleagues in the other cities know the Town is discussing this. Mayor Derwin said she has spoken informally regarding this subject with a colleague in Woodside.

Meg Abraham, Alpine Road. She asked if the goal was affordable housing or increased housing. She said she doesn't know what affordable housing means in this context, what would qualify for the State's affordable housing. She said with regard to second units, even those who have non-conforming grandfathered in second units, the cost in City fees coupled with the intrusion of the ASCC, just to make maybe \$1,000 or \$2,000 a month on a second unit, is very daunting. She said the Council needs to look at costs, not just subsidizing, to lessen the pain, or the residents are not going to consider it.

Mayor Derwin said she understands those concerns because she's trying to build one herself right now.

Bill Youstra said Westridge is material to this issue because there is the capacity there in terms of acreage, and he has not heard if they are supportive or not. He said when he installed solar at his house, there was a group buy and the Town was very accommodating and facilitated installation of solar by reducing the friction associated with it. He said if residents could add prefab second units, possibly marketed as a group buy, for which the Town provided preapprovals and fixed fees, it could move very quickly.

Mayor Derwin said she agreed and that exact idea has been discussed at the County level.

Helen Walter, 4600 Alpine Road. She said her mother bought her property of 1.8 acres 30 years ago. Her mother would like to age in place and Ms. Walter has the money to build a second structure for herself and her son on the property. However, the 750-square-foot limit is not enough room for them. She said they could expand her mother's house by 3,000 square feet but they want their own house. She said below market rate housing is usually 900 square feet for a two-bedroom unit. She said this is a regional issue because everyone crosses jurisdictions on a daily basis and driving long distances between homes and jobs increases traffic for everyone.

With no further comments or questions, Town Manager Dennis continued with the staff report.

- **Recommendation Two:** Direct staff to work with regional agencies and private sector partners to reduce costs and eliminate barriers to second unit construction.

Councilmember Wengert asked Town Manager Dennis who he would be approaching regarding the regional agency fees. Town Manager Dennis said County would be the primary. Mayor Derwin said she is building a one-bedroom, 750-square-foot affordable housing unit on her property. She shared some of the obstacles and large fees associated with that. She said she would like the Town to work out some of these obstacles for the residents.

Vice Mayor Hughes said it appeared the real bulk of the cost is construction so looking at modular units would be a huge benefit.

With no further comments or questions, Town Manager Dennis continued with the staff report.

- **Recommendation Three:** Direct the Planning Commission to work with Town staff to further review and develop a Junior Second Unit Ordinance to allow conversion of existing space within single family homes into a junior accessory dwelling unit.

In response to Vice Mayor Hughes' question, Planning Director Pedro said that current code does not allow a second kitchen or cooking facilities in the main house.

In response to Councilmember Wengert's question, Planning Director Pedro said the code required a separate entrance and there is no limitation for number of entrances on a building.

With no further comments or questions, Town Manager Dennis continued with the staff report.

- **Recommendation Four:** Direct staff to engage with businesses in Town to gauge interest in joining the Town's Affiliated Housing program created by the Housing Element. Changes to the Housing Element requires a recommendation by the Planning Commission, one public hearing by the Town Council, and appropriate public noticing.
- **Recommendation Five:** Direct staff to conduct outreach to local employers and pre-approve an employee survey.

Town Manager Dennis said the Town currently has an affiliated housing program with Stanford University, Woodside Priory, and The Sequoias. He said Woodside Priory currently has approximately 20 on-site housing units and will be adding more. He said Recommendations Four and Five would gauge interest and provide information regarding the scope of the issue.

Vice Mayor Hughes said it has come up that people don't necessarily want to live on-site where their jobs are located. He said swaps have also been discussed, not just in Town but including neighboring Towns.

Councilmember Aalfs asked if the affiliated housing at the Priory is deed restricted. Planning Director Pedro said The Priory will have a total of 27 housing units, but not all are affordable housing units. She said one or two are deed restricted. She said the housing units are for their faculty and they are charging below market rate rents even though they are not deed restricted.

Town Attorney Prince said, with regard to trading or swapping employee housing, there are some parameters around employee housing. She said that when it is expanded beyond that, there may be some Fair Employment Housing Act laws that would have to be researched.

Bill Youstra Cervantes Road. He asked if there had been any discussion around developing the Stanford Wedge. Town Manager Dennis said staff regularly has conversations with all three of the affiliated housing partners. He said conversations with Stanford University have indicated some potential interest in the future and the conversations are continuing. Planning Director Pedro said the 2014 General Plan Housing Element states that in the 2014-2022 planning period, there is a specific program to take a closer look at the feasibility of development on the Stanford Wedge. Mr. Youstra asked if the Priory was limited by their own financial capacity to develop or if there were other restrictions. Mr. Youstra said housing

really governs the school's ability to recruit great teachers. Town Manager Dennis said the Priory fundraises and contributes money to construction, so the financial aspect is a consideration. Planning Director Pedro said the master plan that was approved by the Planning Commission identifies how many housing units, academic buildings, fields, etc., so in some ways the development on the property is governed by the use permit. Vice Mayor Hughes said the Priory is not at the limit – they can build 11 more units under their current permit.

Councilmember Aalfs asked how many units the Sequoias currently have permitted by their master plan. Planning Director said they have none for affiliated housing. She said the Sequoias are currently reviewing their master plan and they plan to bring an application sometime next year.

With no further comments or questions, Town Manager Dennis continued with the staff report.

- **Recommendation Six:** Create an ad hoc committee to review and recommend potential housing on Town-owned properties. Staff recommends the ad hoc committee be made up of two Councilmembers, two Planning Commissioners chosen by that body, and three residents appointed by the Town Council.
- **Recommendation Seven:** Direct staff and ad hoc committee to identify potential Town-owned sites for potential housing units, and criteria for their occupancy.

With no comments or questions, Town Manager Dennis continued with the staff report.

- **Recommendation Eight:** Postpone further work on the draft housing impact fee study until the Town Council has adopted the housing option strategic plan, which will include a list of concepts and programs and identified which program(s) may be funded by a housing impact fee. Once the program(s) have been adopted, Town staff can return to the Town Council with recommendations on the future of the Inclusionary Housing Ordinance and the housing impact fee. The General Plan and Town ordinances may require amendments.
- **Recommendation Nine:** Postpone allotment of existing affordable housing funds accumulated from the Inclusionary Housing Ordinance until completion of the housing options strategic plan.

In response to Councilmember Aalfs question, Town Manager Dennis said the inclusionary housing fee would stay in place if a subdivision was proposed and would be governed under that ordinance. Since the Town does not have a housing impact fee, there would be no further work done on that.

Meg Abraham, 4536 Alpine Road. She said she is supportive of the idea of the Town paying for a subdivision. She said she does not want to see affordable housing tucked away in some corner because that would be ghettoizing. She said if there is going to be a subdivision of affordable housing, it needs to be central to Portola Valley so that these people remain part of the community. She said there would also need to be a method to keep an affordable housing subdivision affordable, possibly where the Town maintains some control over the subdivision. She said, as a long term resident, it breaks her heart that many teachers can no longer stay in Portola Valley. She said she would also like to see retirement age planning put into any sort of subdivision that would utilize this sort of money.

Vice Mayor Hughes pointed out that money loses effective value the longer it sits in the Inclusionary Housing Fund and it doesn't make sense to look to collect more money until the Town determines what it will be spent on.

Monika Cheney, Goya Road. She said the staff report indicates there is currently \$3.5 million in the affordable housing fund. She said it is unclear to her what the possibilities are for that money. She asked if the money was available for housing projects on Town-owned land or the other programs that have been discussed, or if the Town can use it to buy property. Town Attorney Prince said Recommendation Eight is to consider what the Town Council would be interested in using the funds for and there is not

currently a defined program beyond that it needs to be used for affordable housing, which could include a variety of things including purchasing property to work with an affordable housing developer to build, building affordable housing on Town-owned land, etc.

Town Manager Dennis said staff is trying to explore where the potential programs could go and then come back and revisit whether or not the Inclusionary Housing Ordinance is the appropriate place to fund those things, or to find some other mechanism for it. He said there is no recommendation at this time regarding what it should be used for because it is unknown what will come out of this discussion.

Vice Mayor Hughes asked if it was correct to say it is fairly flexible, although there may be legal constraints from the County or the State, as long as it's being spent on something to do with low-income housing. Town Attorney Prince said it is required to be spent on affordable housing, and as it gets down to specific things the Town Council wants, the legal limitations can be researched.

With no further comments or questions, Town Manager Dennis continued with the staff report.

- **Recommendation Ten:** Continue to assist HIP Housing with publicizing their services by providing more exposure on the Town's website, at the Farmer's market, or develop an outreach program that specifically targets potential providers.

Vice Mayor Hughes asked what kind of numbers HIP Housing has historically placed in Portola Valley. Town Manager Dennis said it is minimal and in recent years it is zero. He said staff recently worked with HIP Housing in PV Ranch to including information about their program in the newsletter. He said there were a couple of people who wanted to learn more about it. He said it is very challenging to get the word out about this program. Mayor Derwin said HIP Housing thoroughly vets their candidates and they have great success stories.

Councilmember Aalfs said Recommendation Ten ties in nicely with Recommendation Three about the junior second units.

With no further comments or questions, Town Manager Dennis continued with the staff report.

- **Recommendation Eleven:** Direct staff to begin work on the above public engagement process.

Town Manager Dennis said staff hopes to be able to go through all the recommendations and have something back to Council in mid-spring 2017.

John Silver, 355 Portola Road. He said he was involved, in the early-1990s, in the first really extensive and serious revamp of the Housing Element, which was approved by the State Department of Housing and Community Development. He described the process at that time, which included field trips that were very valuable. He said the more that real knowledge can be brought to people, the better the chance to come together as a community about things that will serve the Town well and make the community better.

With no further questions or comments, Mayor Derwin brought the item back to the Council for discussion.

Councilmember Richards said that, considering the scope of the issue, Recommendations One through Seven all need to be implemented, and probably simultaneously. Councilmember Wengert agreed.

Councilmember Wengert said parts of Recommendation One should be prioritized. She said a lot of emphasis should be put on the breakdown of lot sizing and how much it will add to inventory because that will drive what proposal might be sent to the Planning Commission. She said it should be significant enough to potentially provide for a fair number of units being built. She said allowing second units on properties smaller than one acre was also a priority. She said waiving permit fees and subsidizing development costs would be a lower priority. She was supportive of a Junior Unit Ordinance.

Town Manager Dennis said the subsidizing and waiving of fees could be bifurcated and grouped with the postponed allotment of existing affordable housing funds.

Mayor Derwin said she really liked Mr. Youstra's idea regarding a group buy of modular units and asked if that would be something the Planning Commission would look into. Councilmember Wengert said since the ordinances allow for modular, that could probably be done at staff level. Councilmember Aalfs said it would be possible if it was decided that 1,000 square feet was appropriate on more lots, and if a pre-engineered, pre-approved solution for anything up to 1,000 square feet could be developed. Councilmember Richards said it would require ASCC involvement.

Town Attorney Prince said design standards could be crafted with modular units in mind. If a resident could meet the codified design standards, the process would be simpler.

Councilmember Wengert asked if this question should be directed back to the ASCC. Vice Mayor Hughes said the Planning Commission would also want to look at it because of issues like parking, sewer connections, etc.

Town Manager Dennis suggested the Planning Commission look at all of the elements and then forward on whatever requires ASCC review.

In response to Councilmember Aalfs' question, Town Manager Dennis said Recommendations Four and Five are a set of conversation to gather information to bring back to Council. He said the most labor intensive piece is the survey. He said the Council is required to approve all surveys, so staff is asking for preapproval of a modest set of questions. Councilmember Wengert said the survey will be critical in gauging demand. Vice Mayor Hughes said another benefit of the survey of local employers is that it puts a face on the whole issue. He said the public will be educated when they see responses from the people who work in Town and hear about their struggles to commute to Portola Valley.

Councilmember Aalfs said his hesitation with regard to the ad hoc group was the great amount of work that would be required for Recommendation Six and Seven. He asked if the Council really believes housing can be created on Town-owned property. Councilmember Wengert said she thinks it can. She said the Town has been committed to trying to do something for a very long time. She said with this kind of a process and public engagement, looking at all the options available, it is important to focus it in as quickly as possible to see what the realistic options are, if any.

The Council approved Recommendation One and directed the Planning Commission to review amendments to the Second Unit Ordinance, possibly increasing the maximum allowable size of the second unit and allowing second units on properties smaller than one acre, and to look into a group buy of pre-engineered, preapproved, modular units of various sizes up to 1,000 square feet.

The Council approved Recommendation Two, and directed staff to work with regional agencies and private sector partners to reduce costs and eliminate barriers to second unit construction.

The Council approved Recommendation Three and directed the Planning Commission to work with staff to develop a Junior Second Unit Ordinance.

The Council approved Recommendation Four and directed staff to engage with businesses in Town to gauge interest in joining the Town's Affiliated Housing Program created by the Housing Element.

The Council approved Recommendation Five and directed staff to conduct outreach to local employers and preapproved an employee survey.

The Council approved Recommendation Six and Seven to create an ad hoc committee to review and recommend potential housing on Town-owned properties. The ad hoc committee will consist of two Councilmembers, two Planning Commissioners chosen by that body, and three residents appointed by

the Town Council. The Council directed staff and the ad hoc committee to identify potential town-owned sites for potential housing units, and criteria for their occupancy.

Councilmember Richards nominated Mayor Derwin to serve on the ad hoc committee. Mayor Derwin accepted. Councilmember Wengert volunteered to serve on the ad hoc committee.

The Council approved Recommendations Eight, Nine, and Ten.

Councilmember Aalfs moved to approve staff recommendations regarding the Draft Housing Options Strategic Plan. Seconded by Councilmember Wengert; the motion carried 5-0.

Mayor Derwin called for a brief recess.

(8) Recommendation by Town Attorney – Annual Evaluation Process.

Town Attorney Leigh Prince presented the staff report regarding the annual evaluation process. She requested that the Town Council provide input on the annual evaluation process for the Town Manager, select a subcommittee of the Town Council to finalize the evaluation process, and conduct the annual evaluation before the Town Council meeting on December 14, 2016.

Councilmember Wengert said she recalled the Council had previously discussed possibly retaining a part-time human resources consultant, not only for this process but for other personnel issues that might arise. She asked Town Attorney Prince if the consultant she selected could play that role on an ongoing basis. Town Attorney Prince said she and the consultant, Marcie Scott of Municipal Resource Group, had also discussed a more long-term on-call relationship. Councilmember Wengert said it should be a goal to have that person available as a resource to assist with future issues. In response to Councilmember Wengert's question, Town Attorney Prince said Ms. Scott proposed an hourly rate fee with a not to exceed. In response to Councilmember Wengert's question, Town Manager Dennis said he had not met the consultant. He said if her role was expanded outside of this project, he would like to have a conversation with her. Mayor Derwin asked the Town Attorney how many hours she thought it would take. Town Attorney Prince said it will depend on how much work the subcommittee is willing to take on independently. If the subcommittee uses the three or four evaluations she provided as examples to create a self-evaluation for the Town Manager, and something for staff, and then maybe just run it by her to make sure all the bases are covered, she said it will not take her very much time. She said if the subcommittee wanted to be more hands-off and just direct the Town Attorney to generate the reviews and conduct the surveys, that is more involved. She said she did not think it would be anywhere near \$10,000. Town Attorney Prince said the subcommittee's task depends on the conversation tonight regarding what the review should look like, if it should include the 360-degree multi-source assessment or if they just want to do a more traditional Council-only level review.

Mayor Derwin called for questions. Hearing none, she brought the item back to the Council for discussion.

The Council agreed they wanted to do the 360-degree multi-source assessment. Town Manager Dennis said he appreciated that suggestion and was excited to have the review.

Councilmember Wengert said the 360-degree review can be very complex and suggested that the subcommittee focus a lot on it.

Vice Mayor Hughes and Councilmember Aalfs volunteered to serve on the subcommittee.

Vice Mayor Hughes would like to use the services of the consultant, which will save a lot of time and effort, and will also be a good test of the consultant.

Mayor Derwin said \$10,000 seems too high for this project. Town Attorney Prince said the consultant does recognize this is the most robust process that she would propose and she was very comfortable

going through and modifying things to make it a simpler process. Because she works on an hourly basis not to exceed, Town Attorney Prince said there are ways the subcommittee could work to reduce costs. Councilmember Aalfs said this would be a one-time cost that will be very valuable. Vice Mayor Hughes suggested the first step of the process would be for the subcommittee to meet with the consultant and figure out what they actually want to do, which will likely be somewhat reduced from what is described in the staff report.

Councilmember Richards moved to approve a 360-degree review process and the formation of a subcommittee, consisting of Vice Mayor Hughes and Councilmember Aalfs, who will work with a consultant to streamline the annual evaluation process. Seconded by Councilmember Wengert; the motion carried 5-0.

(9) COUNCIL LIAISON COMMITTEE AND REGIONAL AGENCIES REPORTS

Councilmember Aalfs – He said there was a press conference held on October 6 officially announcing Peninsula Clean Energy. He said San Carlos announced that all their municipal accounts are at 100 percent renewable.

Councilmember Wengert – She attended an ASCC meeting where they discussed an architectural review for an attached second unit on Stonegate, a modification to landscaping on Campo Road, and provided an update on the Ad-Hoc Committee for the Portola Road Corridor.

Councilmember Richards – None to Report.

Vice Mayor Hughes – He attended an Ad-Hoc Windy Hill Signage Committee meeting where they discussed the installation of two parking signs and the removal of existing signs. He said they also discussed whether more parking is needed at the Windy Hill parking lot and reviewed the use permit. He said initially MidPen had asked for more parking in their CUP, but at that time the Town limited it to 50 spaces. He said a MidPen person who lives at the Hawthorns attended the meeting and said it would be worthwhile to engage with MidPen to discuss if they can do something long-term about the parking issue. He attended a Bicycle, Pedestrian & Traffic Safety Committee meeting where they also discussed signage on Portola Road at Windy Hill and possibly upgrading the crosswalk sign at The Priory. He said they reported that the staff maintenance crew is clearing drains and the Hawthorne Trail group is organizing a meeting.

Mayor Derwin – She attended the C/CAG Water Committee's meeting where they formed a recommendation to take to C/CAG for a proposed framework for the San Mateo Countywide Water Committee that will look into storm water, flood control, sea level rise, and coastal erosion. She said membership will include five elected officials with additional technical assistance as needed. She said it will be a standing committee tasked with education, outreach, and advocating for funds, and being a central repository for information about storm water, flood control, and sea level rise.

(10) Town Manager Report – Town Manager Dennis reported the first Neighborhood Watch meeting in the Golden Oak North Community is being held tonight. He said he had lunch with the General Manager of WestBay Sanitary last week. He said Town staff is in the process of considering their goals for 2017. He said the Emergency Preparedness Committee sponsored a Healthcare Mixer where they invited people with healthcare backgrounds to possibly work in the EOC. He attended the League of California Cities Annual Conference and said the workshops were excellent.

WRITTEN COMMUNICATIONS [9:10 p.m.]

(11) Town Council Digest –September 30, 2016

None

(12) Town Council Digest – October 7, 2016

#7 – Notice – SunShares Workshop – Tuesday, October 11, 2016, at 6:00 p.m. in the Community Hall. Councilmember Aalfs questioned why the SunShares Workshop was cancelled. Town Manager Dennis said it was postponed.

#8 – Invitation – Council of Cities Dinner Meeting – Friday, October 21, 2016 – City of Pacifica Hosting. Councilmember Wengert asked if anyone knew what the program is for the October Council of Cities dinner meeting. Mayor Derwin said she thought were going to talk about the Propositions.

ADJOURNMENT [9:15 p.m.]

Mayor Derwin adjourned the meeting.

Mayor

Town Clerk

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Vendor Name Line 2	Invoice Description2	PO No.	Pay Date	
Vendor Address	Vendor Number		Due Date	Taxes Withheld
City	Bank	Check No.	Check Date	Discount Amount
State/Province Zip/Postal	Invoice Number			Check Amount

AT&T	9/6/16 - 10/5/16 Statement	18001	10/26/2016	
			10/26/2016	
P.O. BOX 9011	441		10/26/2016	0.00
CAROL STREAM	BOA	51101	10/26/2016	0.00
IL 60197-9011				276.35

GL Number	Description	Invoice Amount	Amount Relieved	
05-64-4318	Telephones	276.35	0.00	
		Check No. 51101	Total:	276.35
		Total for AT&T		276.35

BANK OF AMERICA	September Statement	18033	10/26/2016	
Bank Card Center			10/26/2016	
P.O. BOX 53155	0022		10/26/2016	0.00
PHOENIX	BOA	51102	10/26/2016	0.00
AZ 85072-3155				2,015.16

GL Number	Description	Invoice Amount	Amount Relieved	
05-52-4152	Emerq Preparedness Committee	178.25	0.00	
05-64-4308	Office Supplies	57.39	0.00	
05-64-4311	Internet Service & Web Hosting	139.99	0.00	
05-64-4322	Dues	75.00	0.00	
05-64-4326	Education & Training	644.16	0.00	
05-64-4336	Miscellaneous	883.75	0.00	
05-64-4337	Bank Fees	36.62	0.00	
		Check No. 51102	Total:	2,015.16
		Total for BANK OF AMERICA		2,015.16

BAY CITIES ROOFING	Refund C&D Dep, 4 Bayberry	18031	10/26/2016	
	VOID Orig #51049		10/26/2016	
201 JACKSON AVENUE	0207		10/26/2016	0.00
REDWOOD CITY	BOA	51103	10/26/2016	0.00
CA 94061				1,000.00

GL Number	Description	Invoice Amount	Amount Relieved	
96-54-4205	C&D Deposit	1,000.00	0.00	
		Check No. 51103	Total:	1,000.00
		Total for BAY CITIES ROOFING		1,000.00

JAIME BOTT	Refund Deposit, 15 Bow	18002	10/26/2016	
			10/26/2016	
15 BOW WAY	0625		10/26/2016	0.00
PORTOLA VALLEY	BOA	51104	10/26/2016	0.00
CA 94028				2,091.04

GL Number	Description	Invoice Amount	Amount Relieved	
96-54-4207	Deposit Refunds, Other Charges	2,091.04	0.00	
		Check No. 51104	Total:	2,091.04
		Total for JAIME BOTT		2,091.04

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Vendor Name Line 2	Invoice Description2	PO No.	Pay Date	
Vendor Address	Vendor Number		Due Date	Taxes Withheld
City	Bank	Check No.	Check Date	Discount Amount
State/Province Zip/Postal	Invoice Number			Check Amount

CAL-WEST INC	Repair Lighted Crosswalk	18027	10/26/2016	
		00006421	10/26/2016	
P.O. BOX 612035	1364		10/26/2016	0.00
SAN JOSE	BOA	51105	10/26/2016	0.00
CA 95161-2035	160836			1,600.41

GL Number	Description	Invoice Amount	Amount Relieved
20-60-4260	Public Road Surface & Drainage	1,600.41	1,600.41

Check No.	51105	Total:	1,600.41
Total for	CAL-WEST INC		1,600.41

CANARY FOUNDATION	Refund Deposit, Event 9/24/16	18003	10/26/2016	
			10/26/2016	
1501 S. CALIFORNIA AVE	867		10/26/2016	0.00
PALO ALTO	BOA	51106	10/26/2016	0.00
CA 94304				100.00

GL Number	Description	Invoice Amount	Amount Relieved
05-00-2562	Field Deposits	100.00	0.00

Check No.	51106	Total:	100.00
Total for	CANARY FOUNDATION		100.00

CITY OF PACIFICA	Dinner/Mtg., Derwin	18004	10/26/2016	
			10/26/2016	
ATTN: KATHY O'CONNELL	764		10/26/2016	0.00
PACIFICA	BOA	51107	10/26/2016	0.00
CA 94044				50.00

GL Number	Description	Invoice Amount	Amount Relieved
05-64-4327	Educ/Train: Council & Commissn	50.00	0.00

Check No.	51107	Total:	50.00
Total for	CITY OF PACIFICA		50.00

CITY OF REDWOOD CITY (IT)	IT Support, September	18005	10/26/2016	
			10/26/2016	
P.O. BOX 3629	586		10/26/2016	0.00
REDWOOD CITY	BOA	51108	10/26/2016	0.00
CA 94064	BR41530			2,163.17

GL Number	Description	Invoice Amount	Amount Relieved
05-54-4216	IT & Website Consultants	2,163.17	0.00

Check No.	51108	Total:	2,163.17
Total for	CITY OF REDWOOD CITY (IT)		2,163.17

CLEANSTREET	Qtrly & Sept Litter/Street Clean	18028	10/26/2016	
			10/26/2016	
1937 W. 169TH STREET	0034		10/26/2016	0.00
GARDENA	BOA	51109	10/26/2016	0.00
CA 90247-5254	83864			4,711.25

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Vendor Name Line 2	Invoice Description2	PO No.	Pay Date	
Vendor Address	Vendor Number		Due Date	Taxes Withheld
City	Bank	Check No.	Check Date	Discount Amount
State/Province Zip/Postal	Invoice Number			Check Amount

GL Number	Description	Invoice Amount	Amount Relieved
05-66-4342	Landscape Supplies & Services	74.00	0.00
20-60-4266	Litter Clean Up Program	3,739.31	0.00
22-60-4266	Litter Clean Up Program	897.94	0.00

Check No.	51109	Total:	4,711.25
Total for	CLEANSTREET		4,711.25

SUSAN COPE	Reimbursement, Mayor's Lunch w/Staff 10/18/16	18034	10/26/2016	
	0629		10/26/2016	0.00
	BOA	51110	10/26/2016	0.00
				226.39

GL Number	Description	Invoice Amount	Amount Relieved
05-64-4336	Miscellaneous	226.39	0.00

Check No.	51110	Total:	226.39
Total for	SUSAN COPE		226.39

COPYMAT	SOD Blitz Postcard Mailers	18035	10/26/2016	
			10/26/2016	
240 HARBOR BLVD	0046		10/26/2016	0.00
BELMONT	BOA	51111	10/26/2016	0.00
CA 94002	CMB1848			242.63

GL Number	Description	Invoice Amount	Amount Relieved
05-64-4310	Town Publications	242.63	0.00

Check No.	51111	Total:	242.63
Total for	COPYMAT		242.63

DENISE DE SOMER	Catering, Council of Cities	18023	10/26/2016	
		00006417	10/26/2016	
17 DOLPHIN COURT	1367		10/26/2016	0.00
HALF MOON BAY	BOA	51112	10/26/2016	0.00
CA 94019	TOPVCOC092316			2,351.45

GL Number	Description	Invoice Amount	Amount Relieved
05-64-4336	Miscellaneous	2,351.45	2,351.45

Check No.	51112	Total:	2,351.45
Total for	DENISE DE SOMER		2,351.45

JEREMY DENNIS	Reimbursement, League of CA Cities Conference & Expo	18007	10/26/2016	
			10/26/2016	
	1441		10/26/2016	0.00
	BOA	51113	10/26/2016	0.00
				533.83

GL Number	Description	Invoice Amount	Amount Relieved
05-64-4326	Education & Training	412.72	0.00
05-64-4336	Miscellaneous	121.11	0.00

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Vendor Name Line 2	Invoice Description2	PO No.	Pay Date	
Vendor Address	Vendor Number		Due Date	Taxes Withheld
City	Bank	Check No.	Check Date	Discount Amount
State/Province Zip/Postal	Invoice Number			Check Amount

Check No.	51113	Total:	533.83
<u>Total for</u>	JEREMY DENNIS		533.83

GRANITE ROCK COMPANY	Asphalt Patch, Roads	18022	10/26/2016	
		00006415	10/26/2016	
P.O. BOX 50001	0322		10/26/2016	0.00
WATSONVILLE	BOA	51114	10/26/2016	0.00
CA 95077-5001	986559			654.00

GL Number	Description	Invoice Amount	Amount Relieved
20-60-4260	Public Road Surface & Drainage	654.00	654.00

Check No.	51114	Total:	654.00
<u>Total for</u>	GRANITE ROCK COMPANY		654.00

ICMA	August Def Comp	18020	10/26/2016	
VANTAGE POINT TFER AGTS-304617			10/26/2016	
C/O M&T BANK	0084		10/26/2016	0.00
BALTIMORE	BOA	51115	10/26/2016	0.00
MD 21264-4553				4,590.62

GL Number	Description	Invoice Amount	Amount Relieved
05-00-2557	Defer Comp	4,590.62	0.00

ICMA	September Def Comp	18030	10/26/2016	
VANTAGE POINT TFER AGTS-304617			10/26/2016	
C/O M&T BANK	0084		10/26/2016	0.00
BALTIMORE	BOA	51115	10/26/2016	0.00
MD 21264-4553				4,690.62

GL Number	Description	Invoice Amount	Amount Relieved
05-50-4098	Deferred Compensation	4,690.62	0.00

Check No.	51115	Total:	9,281.24
<u>Total for</u>	ICMA		9,281.24

KADENASE MANAGEMENT, LLC	Refund Deposit, 5010 Alpine	18008	10/26/2016	
			10/26/2016	
555 BRYANT ST. #347	0626		10/26/2016	0.00
PALO ALTO	BOA	51116	10/26/2016	0.00
CA 94301				1,162.50

GL Number	Description	Invoice Amount	Amount Relieved
96-54-4207	Deposit Refunds, Other Charges	1,162.50	0.00

Check No.	51116	Total:	1,162.50
<u>Total for</u>	KADENASE MANAGEMENT, LLC		1,162.50

M. BRIGHT PAINTING INC.	Prep & Paint Walls, Community	18009	10/26/2016	
	Hall/ Activity Room		10/26/2016	
2072 KINGS LANE	530		10/26/2016	0.00
SAN MATEO	BOA	51117	10/26/2016	0.00
CA 94402	2448			4,250.00

GL Number	Description	Invoice Amount	Amount Relieved
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City	Bank	Check No.	Check Date	Discount Amount
State/Province Zip/Postal	Invoice Number			Check Amount

05-64-4336	Miscellaneous	2,125.00	0.00	
05-66-4341	Community Hall	2,125.00	0.00	
M. BRIGHT PAINTING INC.	Add'l Svcs, Paint in Comm Hall	18029	10/26/2016	
			10/26/2016	
2072 KINGS LANE	530		10/26/2016	0.00
SAN MATEO	BOA	51117	10/26/2016	0.00
CA 94402	2449			330.00
GL Number	Description	Invoice Amount	Amount Relieved	
05-64-4336	Miscellaneous	330.00	0.00	

Check No.	51117	Total:	4,580.00
Total for	M. BRIGHT PAINTING INC.		4,580.00

MUNICIPAL CODE CORPORATION	Annual Web Hosting, 10/1/16 - 09/30/17	18010	10/26/2016	
			10/26/2016	
P.O. BOX 2235	788		10/26/2016	0.00
TALLAHASSEE	BOA	51118	10/26/2016	0.00
FL 32316	00277112			900.00
GL Number	Description	Invoice Amount	Amount Relieved	
05-64-4311	Internet Service & Web Hosting	900.00	0.00	

Check No.	51118	Total:	900.00
Total for	MUNICIPAL CODE CORPORATION		900.00

NATIONAL FIRE PROTECTION ASSN,	Annual Dues, Weiner	18026	10/26/2016	
			10/26/2016	
11 TRACY DRIVE	0628		10/26/2016	0.00
AVON	BOA	51119	10/26/2016	0.00
MA 02322				175.00
GL Number	Description	Invoice Amount	Amount Relieved	
05-64-4322	Dues	175.00	0.00	

Check No.	51119	Total:	175.00
Total for	NATIONAL FIRE PROTECTION AS:		175.00

ELIZABETH PAPADOPOULOS	Reimbursement, CAC Speaker	18011	10/26/2016	
	Event 10/4/16		10/26/2016	
35 BUCKEYE	0552		10/26/2016	0.00
PORTOLA VALLEY	BOA	51120	10/26/2016	0.00
CA 94028				297.87
GL Number	Description	Invoice Amount	Amount Relieved	
05-52-4150	Cultural Arts Committee	297.87	0.00	

Check No.	51120	Total:	297.87
Total for	ELIZABETH PAPADOPOULOS		297.87

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Vendor Name Line 2	Invoice Description2	PO No.	Pay Date	
Vendor Address	Vendor Number		Due Date	Taxes Withheld
City	Bank	Check No.	Check Date	Discount Amount
State/Province Zip/Postal	Invoice Number			Check Amount

PG&E	September Statement	18025	10/26/2016	
			10/26/2016	
BOX 997300	0109		10/26/2016	0.00
SACRAMENTO	BOA	51121	10/26/2016	0.00
CA 95899-7300				361.15

GL Number	Description	Invoice Amount	Amount Relieved	
05-64-4330	Utilities	361.15	0.00	

Check No.	51121	Total:	361.15
Total for	PG&E		361.15

PIVOT INTERIORS, INC.	Overhead Storage Furniture,	18021	10/26/2016	
	Rodas	00006418	10/26/2016	
3355 SCOTT BLVD. #110	598		10/26/2016	0.00
SANTA CLARA	BOA	51122	10/26/2016	0.00
CA 95054	326861			1,608.73

GL Number	Description	Invoice Amount	Amount Relieved	
05-64-4312	Office Equipment	1,608.73	1,608.73	

Check No.	51122	Total:	1,608.73
Total for	PIVOT INTERIORS, INC.		1,608.73

PLACEWORKS	Sept Statement, TCMP Proj/PV	18024	10/26/2016	
	Outreach & Engagement Tools		10/26/2016	
3 MACARTHUR PLACE, SUITE 1100	1458		10/26/2016	0.00
SANTA ANA	BOA	51123	10/26/2016	0.00
CA 92707	60562			1,520.00

GL Number	Description	Invoice Amount	Amount Relieved	
05-54-4214	Miscellaneous Consultants	1,520.00	0.00	

Check No.	51123	Total:	1,520.00
Total for	PLACEWORKS		1,520.00

RG ROOFING	Refund Deposit, 3 Applewood	18018	10/26/2016	
			10/26/2016	
6275 ROCKROSE DRIVE	1091		10/26/2016	0.00
NEWARK	BOA	51124	10/26/2016	0.00
CA 94560				1,000.00

GL Number	Description	Invoice Amount	Amount Relieved	
96-54-4205	C&D Deposit	1,000.00	0.00	

Check No.	51124	Total:	1,000.00
Total for	RG ROOFING		1,000.00

RON RAMIES AUTOMOTIVE, INC.	September Fuel Statement	18012	10/26/2016	
			10/26/2016	
115 PORTOLA ROAD	422		10/26/2016	0.00
PORTOLA VALLEY	BOA	51125	10/26/2016	0.00
CA 94028				368.07

GL Number	Description	Invoice Amount	Amount Relieved	
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City	Bank	Check No.	Check Date	Discount Amount
State/Province Zip/Postal	Invoice Number			Check Amount

05-64-4334	Vehicle Maintenance	368.07	0.00	
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Check No.	51125	Total:	368.07
Total for	RON RAMIES AUTOMOTIVE, INC.		368.07

SAN MATEO CO INF SERVICES	September M/W	18013	10/26/2016	
			10/26/2016	
455 COUNTY CENTER, 3RD FLOOR	0307		10/26/2016	0.00
REDWOOD CITY	BOA	51126	10/26/2016	0.00
CA 94063	1YPV11609			76.00

GL Number	Description	Invoice Amount	Amount Relieved
05-52-4152	Emerq Preparedness Committee	76.00	0.00

Check No.	51126	Total:	76.00
Total for	SAN MATEO CO INF SERVICES		76.00

SMALL BUSINESS BENEFIT PLAN TR	Dental/Vision, November	18014	10/26/2016	
			10/26/2016	
	0132		10/26/2016	0.00
BELMONT	BOA	51127	10/26/2016	0.00
CA 94002-0156				1,954.40

GL Number	Description	Invoice Amount	Amount Relieved
05-50-4090	Health Ins Dental & Vision	1,954.40	0.00

Check No.	51127	Total:	1,954.40
Total for	SMALL BUSINESS BENEFIT PLAN		1,954.40

STAPLES CREDIT PLAN	Office Supplies, 09/10-10/05	18015	10/26/2016	
			10/26/2016	
DEPT. 31 - 0000306219	430		10/26/2016	0.00
PHOENIX	BOA	51128	10/26/2016	0.00
AZ 85062-8004				1,066.76

GL Number	Description	Invoice Amount	Amount Relieved
05-64-4308	Office Supplies	1,066.76	0.00

Check No.	51128	Total:	1,066.76
Total for	STAPLES CREDIT PLAN		1,066.76

SHELLY SWEENEY	Instructor Fees, Fall 2016	18016	10/26/2016	
			10/26/2016	
285 GRANDVIEW DRIVE	407		10/26/2016	0.00
WOODSIDE	BOA	51129	10/26/2016	0.00
CA 94062				2,432.00

GL Number	Description	Invoice Amount	Amount Relieved
05-58-4246	Instructors & Class Refunds	2,432.00	0.00

Check No.	51129	Total:	2,432.00
Total for	SHELLY SWEENEY		2,432.00

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Date: 10/21/2016

Time: 10:04 am

Page: 8

TOWN OF PORTOLA VALLEY

Vendor Name	Invoice Description1	Ref No.	Discount Date	
Vendor Name Line 2	Invoice Description2	PO No.	Pay Date	
Vendor Address	Vendor Number		Due Date	Taxes Withheld
City	Bank	Check No.	Check Date	Discount Amount
State/Province Zip/Postal	Invoice Number			Check Amount

US POSTMASTER	Replenish Bulk Mail Account	18032	10/26/2016	
Business Mail Entry Unit		00006420	10/26/2016	
3875 BOHANNON DRIVE	0287		10/26/2016	0.00
MENLO PARK	BOA	51130	10/26/2016	0.00
CA 94025				2,000.00

GL Number	Description	Invoice Amount	Amount Relieved
05-64-4316	Postage	2,000.00	2,000.00

Check No.	51130	Total:	2,000.00
Total for	US POSTMASTER		2,000.00

WEMORPH INC	Business Cards, Cassidy	18017	10/26/2016	
	Business Envelopes		10/26/2016	
1671 IROQUIOS ROAD	1360		10/26/2016	0.00
ROCKLIN	BOA	51131	10/26/2016	0.00
CA 95765	17342, 17424			260.58

GL Number	Description	Invoice Amount	Amount Relieved
05-64-4308	Office Supplies	260.58	0.00

Check No.	51131	Total:	260.58
Total for	WEMORPH INC		260.58

STUART YOUNG	Reimbursement, Emer Prep Suppl	18019	10/26/2016	
			10/26/2016	
45 LAS PIEDRAS	0627		10/26/2016	0.00
PORTOLA VALLEY	BOA	51132	10/26/2016	0.00
CA 94028				445.88

GL Number	Description	Invoice Amount	Amount Relieved
05-52-4152	Emerq Preparedness Committee	445.88	0.00

Check No.	51132	Total:	445.88
Total for	STUART YOUNG		445.88

Total Invoices:	34	Grand Total:	47,505.86
		Less Credit Memos:	0.00
		Net Total:	47,505.86
		Less Hand Check Total:	0.00
		Outstanding Invoice Total:	47,505.86

TOWN OF PORTOLA VALLEY
Warrant Disbursement Journal
October 26, 2016

Claims totaling \$47,505.86 having been duly examined by me and found to be correct are hereby approved and verified by me as due bills against the Town of Portola Valley.

Date _____

Jeremy Dennis, Treasurer

Motion having been duly made and seconded, the above claims are hereby approved and allowed for payment.

Signed and sealed this (Date) _____

Sharon Hanlon, Town Clerk

Mayor

From: webmaster@portolavalley.net [mailto:webmaster@portolavalley.net]

Sent: Wednesday, October 19, 2016 10:22 AM

To: Sharon Hanlon <shanlon@portolavalley.net>

Subject: Portola Valley, CA: Committee Application

A new entry to a form/survey has been submitted.

Form Name: Committee Application

Date & Time: 10/19/2016 10:22 AM

Response #: 33

Submitter ID: 3178

IP address:

Time to complete: 3 min. , 29 sec.

Survey Details

Page 1

Committee applications are submitted to Portola Valley's Town Clerk, Sharon Hanlon. Please feel free to forward a letter of interest or resume with your application as well. Sharon can be reached at (650) 851-1700 ex210, or you may email her at shanlon@portolavalley.net.

Name of committee which I am interested in serving on (please note that only committees currently seeking volunteers are listed):

Conservation

Applicant Information

Full Name	George Salah
Email Address	
Street Address	
City/Zip	Portola Valley
Number of years in Portola Valley	6
Cell Phone	
Home Phone	
Other Phone	Not answered

Preferred Phone Contact Number

Cell

I prefer to receive Town communications via

E-mail (recommended)

Please state why you have an interest in this committee, and state any background or experience you may have that may be useful in your service to this committee.

Since 2013 I've been the Chairman & CEO of Apparent Inc., a technology energy company, providing products and services to maximize the performance of renewable energy assets and the creation of the smart grid. I had previously served for 14 years as the Director of Real Estate and Workplace Services at

Google Inc. responsible for real estate and facilities worldwide. Joining the company in 1999, I helped create the company's famous culture and its focus on creating healthy buildings and community. Prior to Google I was an Executive of Oracle's Real Estate group and have 32 years of corporate real estate and construction management experience. Throughout my career I've focused on energy efficient design and developing spaces optimized to support the health and well-being of people and the environment. I have served on the Board of the International Living Future Institute (ILFI), and continue to serve on the board of the Healthy Building Network (HBN).

Apart from my professional career accomplishments, my home was designed and built to the highest level of sustainability practices as prescribed by the Living Building Challenge protocol. I'm especially proud of our use of water catchment systems, native plants and energy conservation features.

Starting out by serving on the Conservation Committee, I hope to gain an understanding of the issues and challenges we face in our community and to offer my guidance and involvement to create a positive impact locally.

Do you have any personal or financial interest that could be perceived by others as a conflict of interest relative to your service on the committee? If so, please describe.

None.

TIME COMMITMENT: Generally committees meet monthly and require a significant time commitment and participation at regular meetings. Please consider this level of commitment when evaluating your interest in serving on one of the Town's Committees.



MEMORANDUM

TOWN OF PORTOLA VALLEY

TO: Mayor and Members of the Town Council

FROM: Susan Cope, Administrative Services Manager

DATE: October 26, 2016

RE: **FYE 06/30/16 Interfund Transfer**

With the closing of the fiscal year ending 6/30/16, the Council is requested to approve the following interfund transfer:

1. Fund Transfer:

From Fund	To Fund	Amount	Comment
General Fund (05)	Gas Tax (20)	\$18,687.93	Fund Transfer to zero Gas Tax Fund at FYE 6/30/16

Approved by Town Manager:



MEMORANDUM

TOWN OF PORTOLA VALLEY

TO: Mayor and Members of the Town Council

FROM: Sharon Hanlon, Town Clerk

DATE: October 26, 2016

RE: SB – 415 California Voter Participation Rights Act

RECOMMENDATION

It is recommended that the Town Council adopt the attached resolution moving to even-numbered elections in accordance with the California Voter Participation Rights Act.

BACKGROUND

Senate Bill 415 was signed by the Governor on September 1, 2016, and mandates that cities and towns “shall not hold an election other than on a statewide election date if holding an election on a nonconcurrent date has previously resulted in a significant decrease in voter turnout.”

“Significant decrease in voter turnout” is defined by comparing the voter turnout for a regularly scheduled election in a municipality with the average voter turnout for the previous four statewide general elections in that same municipality. The voter turnout in Portola Valley for the 2009, 2011, 2013 and 2015 elections has been more than 25 percent lower than the average voter turnout within the Town for the previous four statewide general elections.

At its October 12, 2016 meeting, the Town Council considered and voted to approve consolidation with the statewide general election, extending Councilmembers terms by one year. Councilmembers Aalfs and Councilmember Wengert current terms expire in 2019, they will now expire in 2020. Councilmember Richards, Vice Mayor Hughes and Mayor Derwin’s current terms expire in 2017, and will now expire in 2018.

The attached resolution will be forwarded to the Board of Supervisors for approval. Once approved by the County, the Town Clerk is required to mail a notice to all registered voters in the Town, informing them of the change in election schedule.

At a near future meeting, the Town Council will be asked to approve an amendment to Municipal Code Chapter 2.32, to implement this change.

ATTACHMENTS:

A – Resolution

B – Senate Bill No. 415

Approved: Jeremy Dennis, Town Manager

A handwritten signature in black ink, appearing to read "Jeremy Dennis", is positioned to the right of the approval text.

RESOLUTION NO. _____-2016

**RESOLUTION OF THE TOWN COUNCIL OF THE
TOWN OF PORTOLA VALLEY MOVING TO EVEN-NUMBERED
YEAR ELECTIONS IN ACCORDANCE WITH THE CALIFORNIA
VOTER PARTICIPATION RIGHTS ACT**

WHEREAS, the Town of Portola Valley currently holds its municipal elections on the first Tuesday after the first Monday in November of odd-numbered years, which is an established election date under state law, but is not concurrent with statewide elections that take place in even-numbered years;

WHEREAS, the California Voter Participation Rights Act (SB 415) requires local agencies to hold elections on statewide even-numbered year election dates if holding elections in an odd-numbered years has resulted in a significant decrease in voter turnout;

WHEREAS, a significant decrease in voter turnout is defined as voter turnout that is at least 25 percent less than the average voter turnout for the previous four statewide general elections;

WHEREAS, voter turnout in the Town of Portola Valley for the 2009, 2011, 2013 and 2015 elections was more than 25 percent lower than the average voter turnout within the Town of Portola Valley for the previous four statewide general elections;

WHEREAS, changing the election date and consolidating with statewide even-numbered year general elections will comply with the California Voter Participation Rights Act and will promote increased voter participation;

WHEREAS, the terms of three members of the Town Council are set to expire in November of 2017 and the terms of two members of the Town Council are set to expire in November 2019; and

WHEREAS, upon approval of the change to elections in even-numbered years, the Elections Code provides that all incumbent Council members' terms may be extended by one year.

NOW, THEREFORE, the Town Council of the Town of Portola Valley does hereby **RESOLVE** as follows:

1. To consolidate municipal elections with even-numbered year statewide general elections in accordance with the California Voter Rights Participation Act beginning with the statewide general election to be held on November 6, 2018.
2. To authorize the Town's Election Officer to submit this Resolution to the County of San Mateo Board of Supervisors for approval no later than 240 days before the date of the next scheduled municipal election.

3. To direct Town staff to bring back an ordinance amending Chapter 2.32, General Municipal Elections, to reflect and codify the change to municipal election dates and to provide the required notice to voters.

PASSED AND ADOPTED this 26th day of October, 2016.

INTRODUCED:

PASSED:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

By: _____
Maryann Derwin, Mayor

ATTEST:

Sharon Hanlon, Town Clerk



California

LEGISLATIVE INFORMATION

SB-415 Voter participation. (2015-2016)

Senate Bill No. 415

CHAPTER 235

An act to add Chapter 1.7 (commencing with Section 14050) to Division 14 of the Elections Code, relating to elections.

[Approved by Governor September 01, 2015. Filed with Secretary of State September 01, 2015.]

LEGISLATIVE COUNSEL'S DIGEST

SB 415, Hueso. Voter participation.

Existing law generally requires all state, county, municipal, district, and school district elections be held on an established election date. Existing law also establishes certain dates for statewide elections. Existing law requires any state, county, municipal, district, and school district election held on a statewide election date to be consolidated with a statewide election, except as provided.

This bill, commencing January 1, 2018, would prohibit a political subdivision, as defined, from holding an election other than on a statewide election date if holding an election on a nonconcurrent date has previously resulted in voter turnout for a regularly scheduled election in that political subdivision being at least 25% less than the average voter turnout within the political subdivision for the previous 4 statewide general elections, except as specified.

This bill would require a court to implement appropriate remedies upon a violation of this prohibition. The bill would authorize a voter who resides in a political subdivision where a violation is alleged to file an action in superior court to enforce this prohibition, and it would allow a prevailing plaintiff other than the state or political subdivision to collect a reasonable attorney's fee and litigation expenses, as provided.

Vote: majority Appropriation: no Fiscal Committee: no Local Program: no

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Chapter 1.7 (commencing with Section 14050) is added to Division 14 of the Elections Code, to read:

CHAPTER 1.7. Voter Participation

14050. This chapter shall be known and may be cited as the California Voter Participation Rights Act.

14051. As used in this chapter:

(a) "Political subdivision" means a geographic area of representation created for the provision of government services, including, but not limited to, a city, a school district, a community college district, or other district organized pursuant to state law.

(b) "Significant decrease in voter turnout" means the voter turnout for a regularly scheduled election in a political subdivision is at least 25 percent less than the average voter turnout within that political subdivision for the previous four statewide general elections.

(c) "Voter turnout" means the percentage of voters who are eligible to cast ballots within a given political subdivision who voted.

14052. (a) Except as provided in subdivision (b), a political subdivision shall not hold an election other than on a statewide election date if holding an election on a nonconcurrent date has previously resulted in a significant decrease in voter turnout.

(b) A political subdivision may hold an election other than on a statewide election date if, by January 1, 2018, the political subdivision has adopted a plan to consolidate a future election with a statewide election not later than the November 8, 2022, statewide general election.

14053. Upon a finding of a violation of subdivision (a) of Section 14052, the court shall implement appropriate remedies, including the imposition of concurrent election dates for future elections and the upgrade of voting equipment or systems to do so. In imposing remedies pursuant to this section, a court may also require a county board of supervisors to approve consolidation pursuant to Section 10402.5.

14054. In an action to enforce subdivision (a) of Section 14052, the court shall allow the prevailing plaintiff other than the state or political subdivision of the state, a reasonable attorney's fee consistent with the standards established in *Serrano v. Priest* (1977) 20 Cal.3d 25, 48-49, and litigation expenses including, but not limited to, expert witness fees and expenses as part of the costs. A prevailing defendant shall not recover any costs, unless the court finds the action to be frivolous, unreasonable, or without foundation.

14055. A voter who resides in a political subdivision where a violation of subdivision (a) of Section 14052 is alleged may file an action pursuant to that section in the superior court of the county in which the political subdivision is located.

14056. This chapter does not apply to special elections.

14057. This chapter shall become operative on January 1, 2018.



MEMORANDUM

TOWN OF PORTOLA VALLEY

TO: Mayor and Members of the Town Council

FROM: Jeremy Dennis, Town Manager

DATE: October 26, 2016

RE: Survey of Residents regarding Automatic License Plate Readers

RECOMMENDATION

It is recommended that the Town Council approve a survey of residents regarding automatic license plate readers (ALPRs).

BACKGROUND

The Town Council will be reviewing town safety topics at its November 9 meeting, including the use of ALPRs. In order to maximize the number of resident opinions, staff recommends the use of a basic survey to gather interest on ALPRs.

DISCUSSION

The survey consists of one question:

“Do you support the purchase of Automatic License Plate Readers for Portola Valley?”

In order to ensure that only Portola Valley residents participate, participants are asked to provide their address and phone number. Comments are allowed

FISCAL IMPACT

The Town is working with Placeworks, who built the online tool for the Town Center Master Plan process. The nominal costs associated with the survey can be absorbed by the existing budget.

Approved by: Jeremy Dennis, Town Manager

A handwritten signature in black ink, appearing to read 'Jeremy Dennis'.

There are no written materials for Update on 2015 – '16 Actuals



MEMORANDUM

TOWN OF PORTOLA VALLEY

TO: Mayor and Members of the Town Council

FROM: Jeremy Dennis, Town Manager

DATE: October 26, 2016

RE: Proposal to Leave SAMCAT

RECOMMENDATION

The Cable and Utilities Undergrounding Committee recommends that the Town Council formally withdraw from the San Mateo County Telecommunications Committee.

BACKGROUND

The San Mateo County Telecommunications Authority (SAMCAT) is a Joint Powers Authority (JPA) formed in June 1989. It has 18 member agencies including the cities of Belmont, Brisbane, Burlingame, Colma, Daly City, Foster City, Half Moon Bay, Hillsborough, Millbrae, Pacifica, Portola Valley, Redwood City, San Bruno, San Carlos, San Mateo, South San Francisco and Woodside as well as San Mateo County. SAMCAT's role has changed over the years, but its main thrust has been to assist its members with their respective negotiation and renegotiation of franchises with public utility services, primarily for Cable TV services. It also manages programs for its members including the Peninsula TV channel on Comcast.

In 2006, the California Legislature passed a bill granting state-wide Cable TV franchises. As existing local agency Cable TV franchises reached their termination dates, they were replaced by a California state-wide franchise which is administered by the CPUC. Portola Valley's franchise agreement with Comcast terminated on March 1, 2011. Since 2011, meetings have been sporadic and primarily concerned with dissolution, as the Committee's primary purpose of overseeing the franchise agreement has ended.

DISCUSSION

Ting Pun, of the Cable and Utilities Undergrounding Committee, is the Town's representative to SAMCAT. No dues have been charged to the Town SAMCAT over the past few years because it has operated with residual funds as it contemplates terminating the JPA.

The Cable and Utilities Undergrounding Committee sees no continuing benefit to Portola Valley in remaining a member of SAMCAT, and wish to avoid any future dues that may be assessed. The Committee recommended at their September 9th 2016 meeting that Town Council direct staff to evaluate terminating its membership in SAMCAT.

Staff has engaged with the County of San Mateo Department of Public Works on the future of SAMCAT and while DPW staff concur that SAMCAT does not have a primary function at this time, the Committee may be useful in the future for county-wide discussions on fiber network or general internet issues.

SAMCAT has called a meeting in November to discuss new direction for the Committee, and an update on a pilot program initiated by the County of San Mateo to bring a multi-jurisdictional fiber ring to all the cities in the County. The County's Information Services Department will be presenting its findings on the pilot program in Millbrae, Redwood City, and South San Francisco at the November meeting. Withdrawal from SAMCAT would result in the Town not being able to participate in this program (Attachment 2).

Withdrawal from SAMCAT is not immediate – according to the contract signed by the Town in 1989 (Attachment 1), withdrawal occurs on July 1st, provided there is at least six months advance notice. Withdrawal will be noticed by letter to the Committee.

FISCAL IMPACT

If SAMCAT were to begin meeting again, the Town would save \$2000/year in fees to the Committee.

ATTACHMENT

Attachment 1 – SAMCAT Contract

Attachment 2 – ISD presentation on SMC Multi-Jurisdictional Fiber Ring, February, 2016

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**FIRST AMENDED JOINT POWERS AGREEMENT
ESTABLISHING THE SAN MATEO COUNTY
TELECOMMUNICATIONS AUTHORITY ("SAMCAT")**

THIS FIRST AMENDED JOINT POWERS AGREEMENT (hereinafter "this Agreement") by and between those governmental entities who are signatories to this Agreement (hereinafter referred to as the "Member" or "Members" as the context requires), is made in light of the following recitals:

RECITALS:

A. The undersigned are the member entities (the "Members") of that Joint Power Authority ("JPA") known as the San Mateo Cable Television Authority ("SAMCAT") created by Agreement dated June 27, 1989, pursuant to Government Code Section 6500 through Section 6518; and

B. The Members have authority to exercise certain powers relating to telecommunication services in their respective communities and desire to establish a telecommunication services joint power authority ("SAMCAT"); and

C. The Members are authorized to contract with each other for the joint exercise of any common power including those relating to telecommunication services pursuant to Government Code Sections 6500 through 6518; and

D. The Members have previously amended the Agreement dated June 27, 1989 by adopting a First Amendment to the Joint Powers Agreement on November 29, 1994, and said Agreement and First Amendment are included in this First Amended Joint Powers Agreement which shall replace and supersede them; and

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A PROFESSIONAL CORPORATION
939 LAUREL STREET, SUITE D
SAN CARLOS, CALIFORNIA
TELEPHONE 593-3117

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E. The Members desire to include further changes in this Agreement to allow SAMCAT to have additional authority to negotiate, develop and implement agreements and procedures with respect to cable television, telecommunication services, public property leases related to telecommunications and cellular and fiber optic equipment and services, and collect data, hold hearings, and regulate cable television (CATV) rates and other matters permitted by the State and Federal regulations for local cable television (CATV) franchising authorities on behalf of the Members.

NOW THEREFORE, the Members, in consideration of the mutual promises and agreements contained herein, AGREE AS FOLLOWS:

1. Purpose. The Members are entering into this Agreement for the sole purposes of:
 - a. jointly addressing complaints from customers and potential customers of CATV within the jurisdictions of Members and including, but not limited to, the operation of a common office(s) to receive and address such complaints, the hiring of personnel to receive and address complaints;
 - b. jointly operating or contracting for the operation of public, educational, and/or government access facilities;
 - c. jointly providing research resources, including consultants, model ordinance and franchise provisions, to assist members in negotiating franchises, right-of-way agreements, lease and service agreements. These roles shall not be limited to cable television service agreements involving cable television, telephone, competitive

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franchises, but shall include franchise, right-of-way, lease and access providers (CAPs), open video systems (OVS), data, wireless and other telecommunications services.

d. jointly collect data, hold hearings, and regulate cable television (CATV), telephone, data, wireless and other telecommunications services permitted by the State and Federal regulations for local cable television (CATV), telephone, data, wireless and other telecommunications services for the Members of SAMCAT.

e. jointly hiring of agent(s) to represent the Members in leasing public property for telecommunications purposes.

f. jointly developing model ordinances and procedures for right of way management, installation and maintenance of overhead, underground and above ground telecommunications, equipment and infrastructure;

g. jointly studying and developing model agreements and procedures to develop city-owned and city-leased telecommunications networks including a regional approach to city and government telecommunications networks, such as a government owned utility, a government leased utility or provider of fiber service to city, county and school district sites;

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The Members reserve to themselves the authority, and it is expressly agreed that SAMCAT shall have no authority, to adopt franchises, to require any franchise provisions, or to administer franchises, except as is provided in 1. a. - f. above.

2. Establishment of the San Mateo County Telecommunications Authority.

The Members hereby create an agency or entity to be known as the San Mateo County Telecommunications Authority ("SAMCAT"). The debts, liabilities, or obligations of SAMCAT shall be the debts, liabilities, or obligations of SAMCAT and not the debts, liabilities, or obligations of the Members.

3. Term. This Agreement shall be effective upon its execution by the Members.

This Agreement shall continue in effect until terminated as provided herein.

4. Board of Directors. Each participating Member shall appoint one

representative to serve on the Board of Directors. The Board shall elect one of its Members to serve as Chairperson. The Board shall meet as needed, but at least quarterly, and shall operate the programs of SAMCAT, shall review SAMCAT's progress and accomplishments, and shall resolve problems hindering the success of SAMCAT. Decisions of the Board shall be final.

5. Powers. SAMCAT shall have the power to:

- a. address complaints from customers and potential customers of cable television (CATV), telephone, data, wireless and other telecommunications services;

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- b. operate a common office(s) to receive and address cable television (CATV), telephone, data, wireless and other telecommunications services complaints;
- c. administer channels, frequencies, fibers, spectrum or other telecommunications resources allocated to or contracted for public, educational and/or government uses.
- d. provide research resources, including consultants, model ordinance and franchise provisions, to assist members in negotiating franchises, right-of-way agreements, lease and service agreements involving cable television (CATV), telephone, competitive access providers (CAPs), open video systems (OVS), data, wireless and other telecommunications services.
- e. hire employees;
- f. make and enter into contracts to carry out its purposes;
- g. hold or dispose of property in order to carry out its purposes;
- h. incur debts, liabilities or obligations required by the exercise of these powers; provided, however, that such debts, liabilities or obligations shall not constitute responsibilities of the Members;
- i. sue or be sued in its own name;
- j. do all things that are necessary and convenient to carry out these powers and SAMCAT's purposes.

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k. jointly collect data, hold hearings, and regulate cable television (CATV), telephone, data, wireless and other telecommunications services permitted by the State and Federal regulations for local cable television (CATV), telephone, data, wireless and other telecommunications services for the Members of SAMCAT.

l. jointly hiring of agent(s) to represent the Members in leasing public property for telecommunications purposes.

m. jointly developing model ordinances and procedures for right of way management, installation and maintenance of overhead, underground and above ground telecommunications equipment and infrastructure.

n. jointly studying and developing model agreements and procedures to develop city-owned and city-leased telecommunications networks including a regional approach to city and government telecommunications networks, such as a government owned utility, a government leased utility or provider of fiber service to city, county and school district sites.

These powers shall be exercised in the manner provided in this Agreement and, except as expressly set forth herein, subject only to such restrictions upon the exercise as are imposed upon the Members in the exercise of similar powers.

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Nothing in this Agreement shall prohibit the County of San Mateo, if it be a Member, from administering complaint and/or access facilities separate and apart from SAMCAT for those geographical areas designated by the County as not within SAMCAT's responsibilities.

6. Budget. The Board of Directors shall adopt an operating budget for SAMCAT before April 1 of each year. The budget shall set forth anticipated expenses, financing sources and proposed service levels necessary to carry out the purposes of this Agreement. Each Member's financial cost shall be paid within 30 days of billing.

The financial responsibility of each Member shall be as follows: A budget covering Administrative Services shall be established annually and all SAMCAT members will be assessed an equal portion of that budget. All other expenses relating to SAMCAT activities shall be paid either by the agency incurring the cost, as a percentage of the subscriber base, or divided equally, whichever method best suits the situation.

The initial SAMCAT budget shall be adopted by the Board of Directors within one hundred and twenty (120) days of the date this Agreement is executed by all of its Members. Any Member who fails or refuses to approve the budget within forty-five (45) days of its submittal to the Member shall be deemed to have withdrawn from SAMCAT. The time for budget approval may be extended by a majority vote of the Board of Directors.

In subsequent years a Member shall approve the annual budget within forty-five (45) days of its submittal to the Member. Failure or refusal to so approve the annual budget shall be deemed to be a withdrawal pursuant to Paragraph 9 of this Agreement;

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provided, however, that if the budget increases a Member's contribution by less than \$3,000.00, the Member shall be deemed to have automatically approved the annual budget.

7. Treasurer-Auditor and Controller. A Member City shall be designated the depository and have custody of all the money and property of SAMCAT, from whatever source. The same Member shall perform the functions of Auditor or Controller for SAMCAT. No Member shall be required to act pursuant to this section without its consent. The hold harmless provisions of this Agreement shall apply, except where there is willful misconduct on the part of the Treasurer/Auditor and/or Controller.

8. Personnel. SAMCAT may request from the Members the services of such personnel to serve SAMCAT ex-officio as may be reasonably necessary to carry out this Agreement and shall have the power to employ professional and technical assistance for the performance of this Agreement, provided that adequate sources of funds are assured for the payment of such professional and technical services which are not provided by a party hereto. SAMCAT may request, although not require, that Members provide personnel and service to SAMCAT in order to carry out the purposes designated in this Agreement.

9. Withdrawal. Any Member may withdraw from this Agreement by filing written notice of intention to do so with the other Members. Termination will take effect on July 1 of any year, provided there is at least six (6) months advance notice. The withdrawal of any party from this Agreement shall in no way affect the rights and obligations of the

1 remaining Members. If a Member withdraws from this Agreement, it is not entitled to the
2 return of any funds contributed to SAMCAT nor to the return in cash or in kind of any
3 materials or supplies contributed. Withdrawing Members still are obligated for all
4 payments due from them for the fiscal year of the withdrawal and all obligations and
5 liabilities incurred during the membership.

6
7 10. Termination and Disposition of Property. This Agreement shall be deemed
8 terminated when only one Member continues to participate, or when all participating
9 Members choose to terminate it. Upon termination, all assets shall be distributed to the
10 Members still active at the time of termination or to the one Member continuing to
11 participate. If there is more than one member at the time of termination, the assets shall
12 be distributed in proportion to those Members' financial participation during the prior fiscal
13 year.
14

15 11. New Members. After the effective date of this Agreement, additional
16 governmental entities may become Members of SAMCAT upon application and approval
17 of the Board of Directors. Approval by the Board of additional Members shall be
18 conditioned upon the following:

- 19 a. The new Members reimburse SAMCAT for the expenses of SAMCAT
20 resulting from the addition of the new Member, including, but not limited to,
21 reasonable attorneys' fees, consultants' fees, accountants' fees,
22 engineering fees and all other such reasonable out-of-pocket expenses as
23 may be incurred.
24
25
26

AARHONSON, DICKERSON, COHN & LANZONI
A PROFESSIONAL CORPORATION
939 LAUREL STREET, SUITE D
SAN CARLOS, CALIFORNIA
TELEPHONE 593-3117

AARONSON, DICKERSON, COHN & LANZONE
A PROFESSIONAL CORPORATION
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TELEPHONE 593-3117

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b. The elected governing body of the new Member adopt such resolutions and ordinances as shall be appropriate to permit SAMCAT to operate in a manner that is consistent with the existing operation of SAMCAT.

c. The new Member comply with such other conditions as may be determined appropriate by the Board of Directors, before such new Member is admitted as a Member of SAMCAT.

d. The new Member execute a counterpart of this agreement creating SAMCAT.

12. Amendment. This Agreement may be amended from time to time by a two-thirds majority vote of the Members, acting pursuant to vote of their respective City Councils or governing boards.

13. Insurance and Hold Harmless. SAMCAT is responsible for all insurance for its operations. Whenever possible at reasonable cost, SAMCAT shall name each of its members as additional insureds. No Member will be liable for claims because of its participation. SAMCAT, at its sole expense, shall defend and indemnify Members against any and all claims, judgments, losses, demands and costs in any way arising out of the operations of this Agreement.

14. Miscellaneous.

a. The section headings herein are for convenience only and are not to be construed as modifying or governing the language in the section referred to.

ATTACHMENT TO FIRST AMENDED JOINT POWERS AGREEMENT ESTABLISHING THE SAN MATEO COUNTY TELECOMMUNICATIONS AUTHORITY ("SAMCAT")

IN WITNESS WHEREOF, the Parties hereby by their duly authorized representatives have affixed their hands on the 23rd day of June 1999.

ATTEST

TOWN OF PORTOLA VALLEY



PORTOLA VALLEY TOWN CLERK



MAYOR

1



Regional Collaboration Around a Shared Government Fiber Network



Jon Walton, Chief Information Officer
San Mateo County, California
February 2016



ISD

Information Services Department
County of San Mateo

All of California in One County

- **Serving a diverse county**
 - 455 square miles of land
 - Large unincorporated areas
 - Population: 739,311
 - Large socio-economic range
 - 20 Incorporated Cities
 - Major businesses in technology, health care, finance, and others
- **County government of ~6,000 employees**
 - Thousands of other city and government employees



San Mateo County - Heart of Silicon Valley



...with Digital Connectivity Challenges



"In a society where increasingly we are defined by access to information and what we earn is what we learn, if you don't have access to technology, you're going to be left in the digital dark ages."

William Kennard, former Chair, FCC

Why Fiber? - Technology Trends and Issues



Transition to the Cloud – available anywhere and anytime

Internet of Things – everything is (or will be) connected



Ubiquity of Mobile – location-based, data collection, anytime

Disaster Resiliency – distributed and resilient solutions



Big Data – almost everything measurable, ability to analyze

New Security Challenges from growing connections, data, and apps



Remote and Tele Presence – New ways to get together

All of these trends are predicated upon distributed high-speed connectivity!

Supporting Modern Communications

- **Access to Government Services**
- **Disaster Readiness and Recovery**
 - Critical infrastructure can be replicated to remote sites in near real time and accessed remotely in case of disaster
- **Public Access**
 - This is the only internet access available to many people

The Internet is becoming the town square for the global village of tomorrow.

Bill Gates



Supporting Modern Communications

- **Economic Development**
 - Redundant, high speed connectivity is a requirement for the technical sector
 - High speed equals time and money savings
- **Voice, Video, and Data**
 - With high speed connectivity and currently available tools, we are in the age of the Jetsons

Speed Matters

Approximate time to transfer
one DVD (about 4.7 Gb)

Transfer Speed	Approximate Time
Modem (14.4 kbps)	32 Days
200 Mbps	3.5 minutes
500 Mbps	1 minute
1 Gbps	41 seconds
10 Gbps (what is planned)	4 seconds

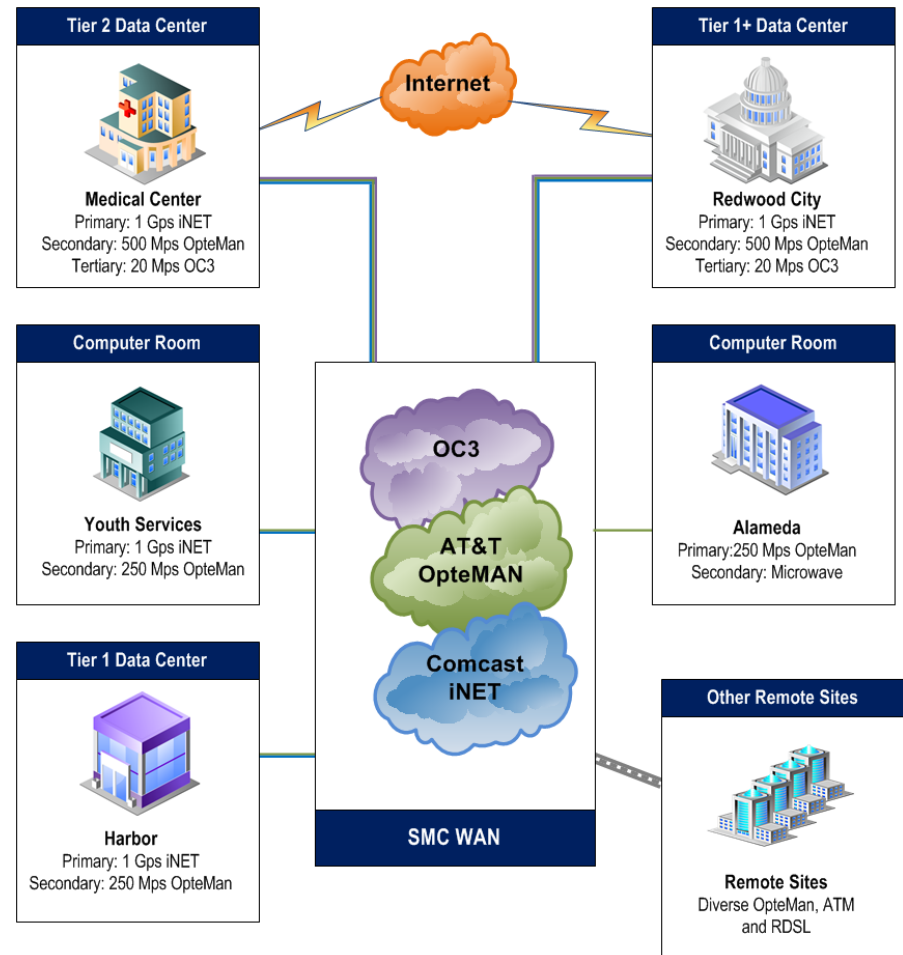
Historical San Mateo County Fiber

- **Historically San Mateo County had very limited fiber connectivity between locations**
- **Leased circuits and microwave were used between five main county facilities**
- **Leased bandwidth was expensive and demand was exceeding capacity**
- **Speeds were typically between 0.2 and 1 Gigabit**
- **Cities have limited fiber connectivity to each other or to the County through SAMCAT**



San Mateo County Old Fiber network

- 2 strands of fiber connecting limited sites
- Two – 200 Mbps Internet connections via the same Internet provider



ISD

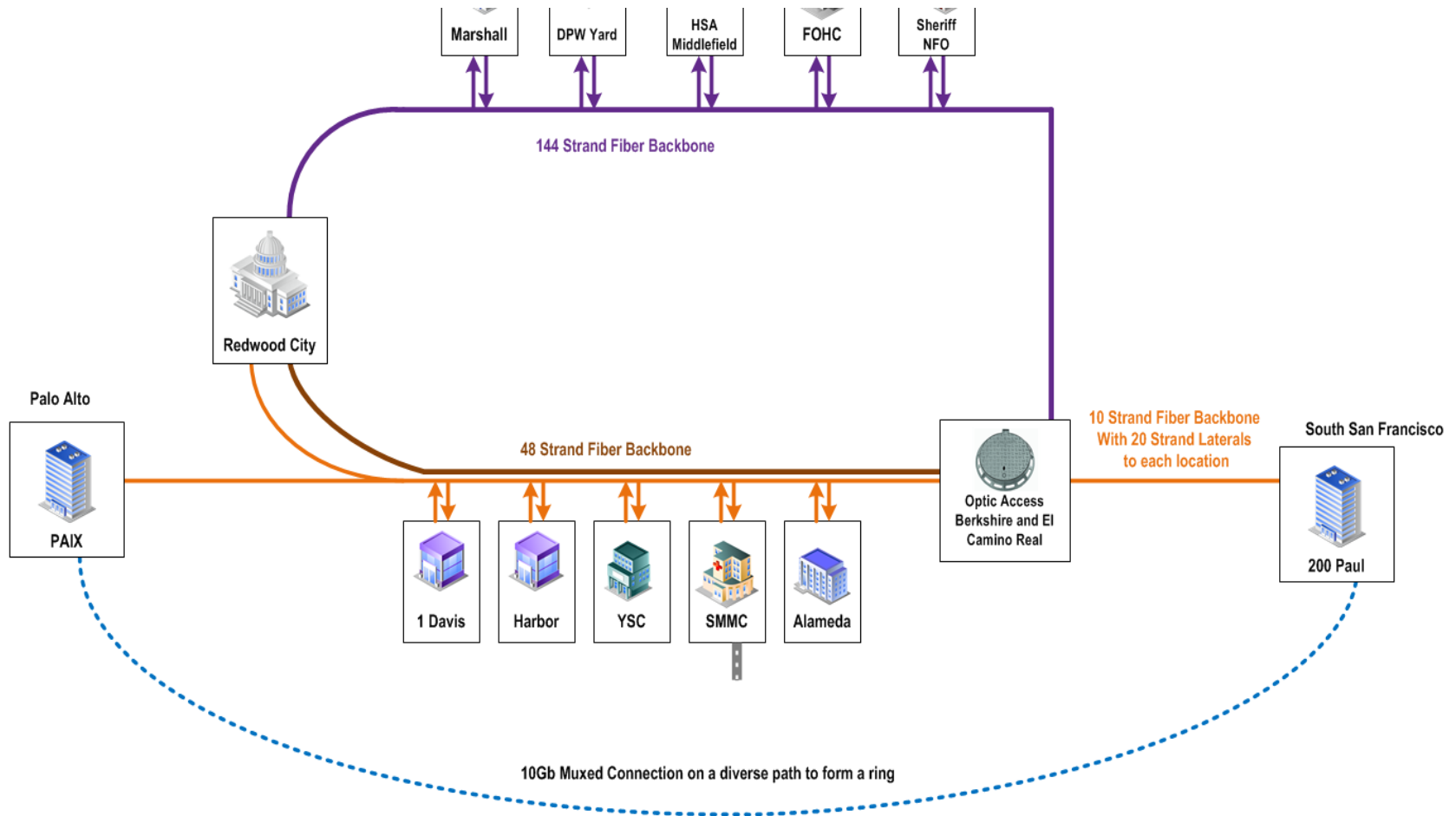
Information Services Department
County of San Mateo

San Mateo County – New Fiber Project

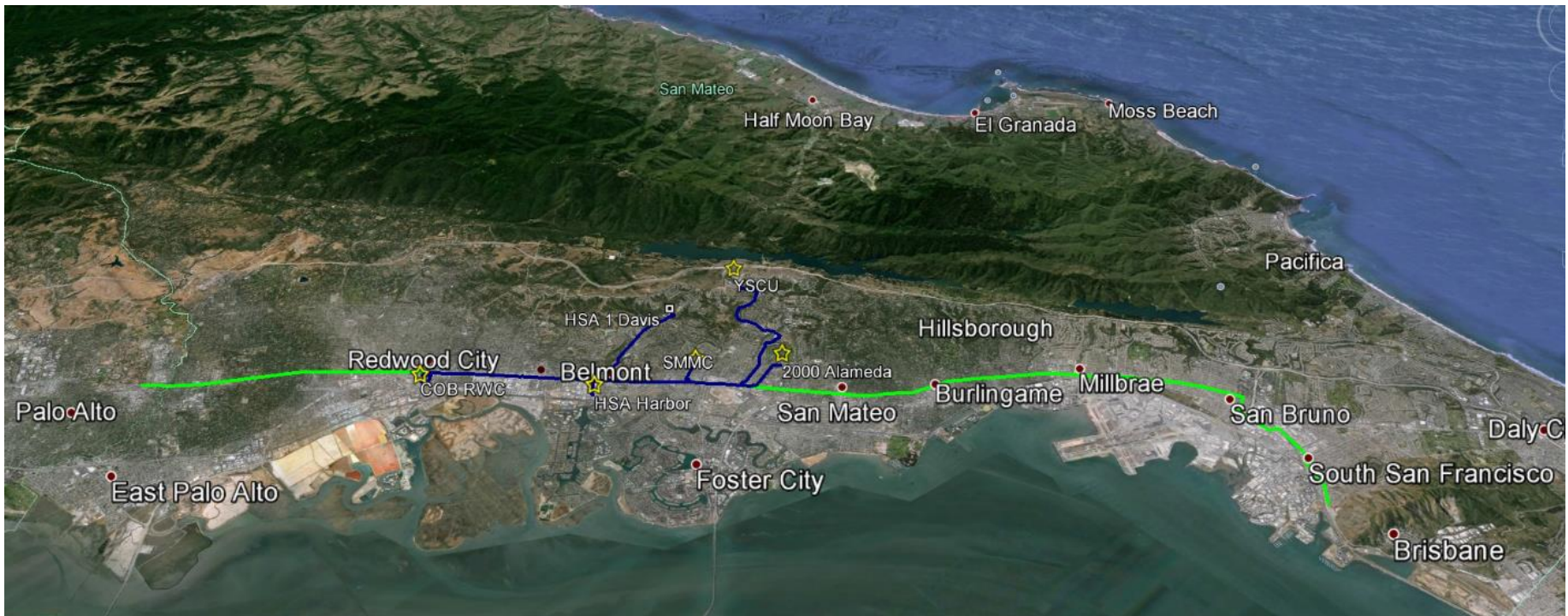
- **20-144 fiber strands to 12 County offices plus Data Center**
- **Speeds 10-40 Gbit/s, with ability to go to 100+ Gbit/s**
- **Fiber connectivity is more redundant**
 - Future fiber through East Bay provides additional redundancy
- **Participating Cities could be upgraded to 10 Gbit/s connectivity between each other and the County if old Multi-Jurisdictional Fiber Ring (MJFR) was upgraded**
- **High speed backbone connection to Palo Alto Internet Exchange (PAIX) and 200 Paul for better / faster connectivity to the Internet (cloud).**



San Mateo County – 2016 Fiber Project



SMC Multi-Jurisdictional Fiber Connectivity Project



Connectivity Challenges for Cities in San Mateo County

- **Municipalities have limited high speed connectivity**
- **Old cable franchise fiber operating at 622Mbps with outdated equipment**
- **No interconnectivity to new County Fiber Project**
- **Limited or no connectivity redundancy**
- **Limited use by participating cities**



Benefits of a shared Fiber network

- **Reduced Cost & Best In Class High Speed Efficiency**
 - Ultra high speed access to information and internetworking for data sharing like public safety video or GIS air photos
- **Economic Development**
 - Build a strong and connected community
 - Attract more businesses that need high speed inter-connectivity.
- **Citizen Engagement**
 - Better access to government service
- **Public Safety**
 - Better data sharing between first responders
- **Cities**
 - Infrastructure enabler for Smart Cities Initiatives



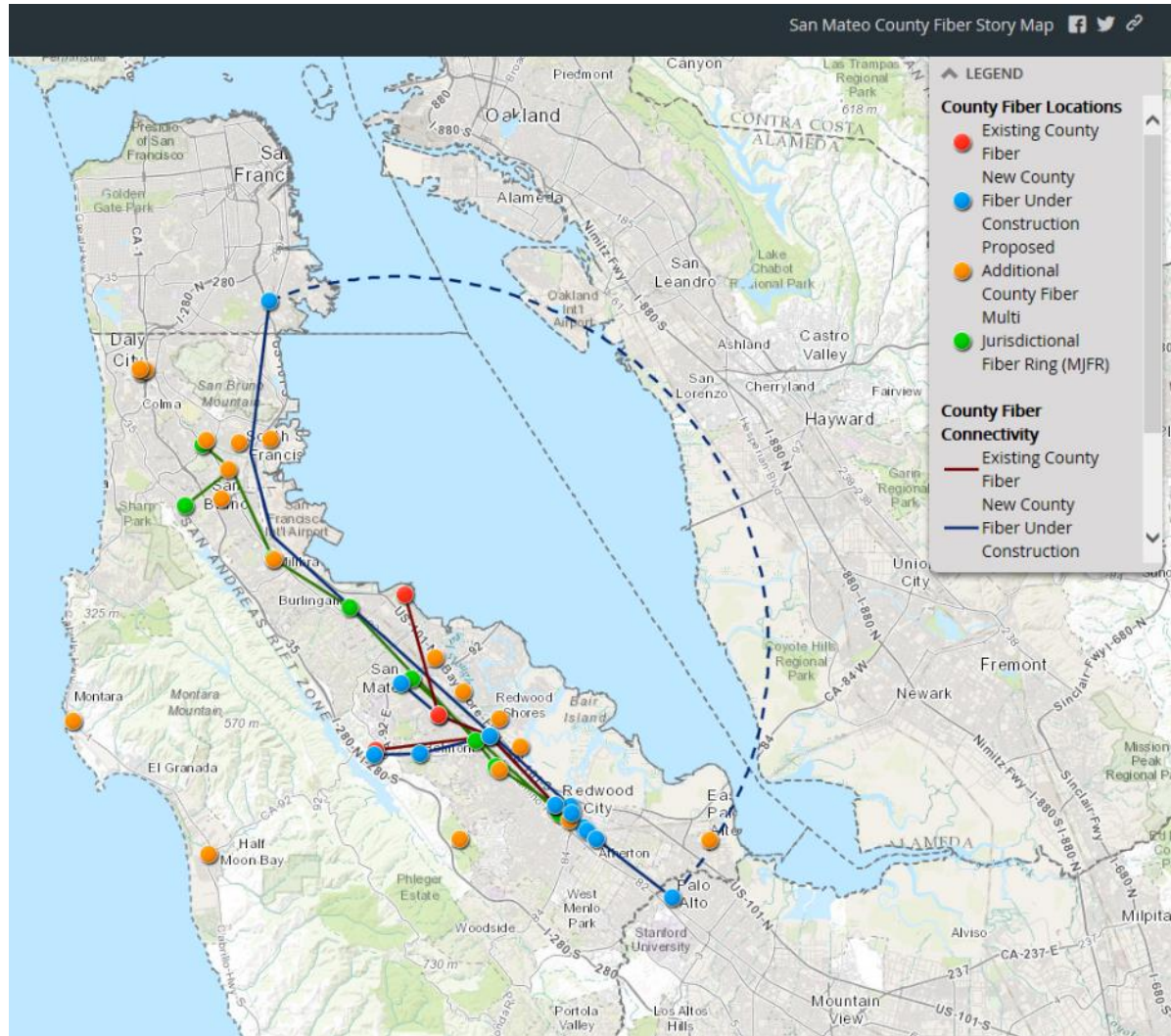
Goal of a Shared Fiber Project

The Basics for a 21st Century Infrastructure

- Identify and connect key hub sites in each City (City Halls, Fire Stations, Police Stations, etc.) by inter-connecting County and Cable Franchise Fiber
- Enable County, City, Business, and Public Connectivity to enable transport for Smart Cities type initiatives
- Ensure appropriate performance and redundancy
- Enable high speed data sharing between non-profit organizations like hospitals, libraries, and public safety
- Provide business continuity/disaster recovery solutions



Proposed Vision for Inter-connected, Redundant, Shared fiber



Moving forward

- **Complete the new County Fiber Network in 2016**
- **Connect Pilot Cities (Redwood City, Millbrae, and Belmont) to Shared Fiber Network by June 2016**
- **Continued partnerships with the community, municipalities, NGOs, and private sector partners**
- **Create high speed hubs in cities for connectivity to each other and externally via PAIX and 200 Paul**



Thank You!



Questions?



ISD

Information Services Department
County of San Mateo



MEMORANDUM

TO: Mayor Derwin and Members of the Town Council

FROM: Keith Weiner, Deputy Building Official

DATE: October 26, 2016

RE: Adoption of the 2016 California Building Code

- **2016** California Building Code – CCR Title 24 Part 2
- **2016** California Residential Code – CCR Title 24 Part 2.5
- **2016** California Electrical Code – CCR Title 24 Part 3
- **2016** California Mechanical Code – CCR Title 24 Part 4
- **2016** California Plumbing Code – CCR Title 24 Part 5
- **2016** California Energy Code – CCR Title 24 Part 6
- **2016** California Historical Building Code – CCR Title 24 Part 8
- **2016** California Fire Code – CCR Title 24 Part 9
- **2016** California Existing Building Code, – CCR Title 24 Part 10
- **2016** California Referenced Standards Code – CCR Title 24 Part 12

RECOMMENDATION

It is recommended that the Town Council review and introduce the proposed Ordinance of the Town Council of the Town of Portola Valley Amending Chapter 15.04 [Building Codes] of Title 15 [Buildings and Construction] of the Portola Valley Municipal Code to Adopt and Updated Building Code.

BACKGROUND

The State of California Building Standards Commission reviews and amends the model codes every three years. In July of this year, the Building Standards Commission published the 2016 California Codes, and local jurisdictions are mandated to begin enforcement six months after the publication date. During this six-month period local jurisdictions are allowed to make amendments to the codes.

If the Town does not make changes to the State Code within 180 days, the provisions of the State Code become effective by default, (Health & Safety Code Section 17958). The last such code adoption by the Town was on December 11, 2013 (Ord. No. 2013-400).

DISCUSSION

If the Town wishes to make changes or modifications to requirements published in the California Building Standards Code (CBSC), it may do so by means of an ordinance. The Town's ability to adopt different codes, however, is somewhat limited. First, the local modification must be substantially equivalent to, or more stringent than the building standards published in the California Building Standards Code. Second, the local jurisdiction is required to make specific or express findings that such changes are reasonably necessary because of local climatic, geologic or topographic conditions, (Health & Safety Code Section 18941.5). Once approved, the express findings along with local amendments in the form of ordinances adopted by the Town are forwarded for review and filing with the California Building Standards Commission. (Health & Safety Code Section 17558.7) The local government findings and modifications are neither effective nor operative until they are filed with the CBSC.

Proposed amendments to the Code for Portola Valley's climatic, geographical or topographical conditions are as follows:

- California Building Code Section 1505 - Roof coverings shall have a Class A fire-retardant roofing assembly.
- California Building Code Section 903 and California Residential Code Section R313 - Automatic fire-extinguishing systems shall be installed in all occupancies as set forth by this ordinance.
- California Building Code Chapter 7A and California Residential Code Section R327 - Ignition Resistant Materials and Construction Methods shall be required as set forth by this ordinance.

Adopted appendices

Staff proposes to adopt the following appendices of the California Residential Code:

- Appendix E: Manufactured Housing Used as Dwelling (excluding Sections AE101 through AE 307). *Specifically addresses the architectural and structural life/safety aspects of the installation of pre-manufactured dwellings*
- Appendix H: Patio Covers. *Specifically addresses the architectural fire-safety and structural life-safety requirements for residential patio covers, which are not otherwise included in the body of the 2013 CRC.*
- Appendix K: Sound Transmission. *Specifically addresses the sound transmission provisions applicable to residential construction covered by the 2013 CRC.*
- Appendix V: Swimming Pool Safety Act. *Specifically addresses safety requirements for pools and spas*

No findings are required.

Staff proposes to adopt the following appendices of the California Mechanical Code:

- Appendix B: Procedure to be Followed to Place Gas Equipment in Operation
- Appendix C: Installation and Testing of Oil Fuel-Fired Equipment
- Appendix F: Sizing of Venting Systems
- Appendix G: Example Calculations of Outdoor Air Rate

No findings are required.

Staff proposes to adopt the following appendices of the California Plumbing Code:

- Appendix A: Recommended Rules of Sizing the Water Supply System
- Appendix B: Explanatory Notes on Combination Waste and Vent Systems
- Appendix C: Alternate Plumbing Systems
- Appendix D: Sizing Storm Water Drainage Systems
- Appendix G: Sizing of Venting Systems
- Appendix I: Installation Standards
- Appendix J: Combination of Indoor and Outdoor Combustion and Ventilation Opening Design
- Appendix K: Potable Rainwater Catchment Systems

No findings are required.

The adoption of the current State codes and proposed local amendments do not represent a change in Town policy.

Administration of the Building Code.

Staff proposes to add language to the Municipal Code which states that work commenced without permits is subject to a specified financial penalty. This language was previously included in the Building Administration Code, the new code language states “*fee established by the applicable governing authority* that shall be in addition to the required permit fees”.

Green Building Code

As part of its triennial update of the California Building Code, the State has updated the California Green Building Code (CalGreen) to require higher green building standards.

The adoption of the proposed ordinance is exempt from the California Environmental Quality Act (CEQA), as it does not have a potential for causing a significant effect on the environment.

FISCAL IMPACT

There is no significant fiscal impact with the adoption of the latest set of codes beyond the purchase of codes and training of staff estimated at approximately \$2,000 which is included in the adopted 2016-17 budget.

ATTACHMENT

1. Ordinance of the Town Council of the Town of Portola Valley Amending Chapter 15.04 [Building Codes] of Title 15 [Buildings and Construction] of the Portola Valley Municipal Code to Adopt and Updated Building Code, including Attachment #1 – Findings for Local Amendments

APPROVED: Jeremy Dennis, Town Manager

A handwritten signature in black ink, appearing to read "Jeremy Dennis", is positioned to the right of the "APPROVED" text.

ORDINANCE NO. 2016-

ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF PORTOLA VALLEY AMENDING 15.04.020 [AMENDMENTS TO THE BUILDING CODE], AND 15.04.030 [ADMINISTRATION OF THE BUILDING CODE] OF CHAPTER 15.04 [BUILDING CODE] OF TITLE 15 [BUILDINGS AND CONSTRUCTION] OF THE PORTOLA VALLEY MUNICIPAL CODE TO ADOPT AN UPDATED BUILDING CODE OF THE PORTOLA VALLEY MUNICIPAL CODE

WHEREAS, the Town of Portola Valley (“Town”) wishes to adopt a building code in accordance with law and to use the most updated regulations in the process of development in the Town; and

WHEREAS, because of the Town’s unique local climatic. Geologic and topographic conditions, as detailed in Attachment 1, the Town desires to make some amendments and additions to the California Building Code.

NOW, THEREFORE, the Town Council of the Town of Portola Valley does **ORDAIN** as follows:

1. AMENDMENT OF CODE. Section 15.04.010 [Definitions] of Title 15 [Buildings and Construction] of the Town of Portola Valley Municipal Code are hereby amended to read as follows:

15.04.010 Building Code. The Town’s building code is comprised of the following uniform codes:

A. 2016 California Building Code (Part 2 of Title 24) Based on the 2015 International Building Code (IBC) published by the International Code Council, with *modifications*; and

B. 2016 California Residential Code (Part 2.5 of Title 24) and Appendices: E: Manufactured Housing Used as Dwelling (excluding sections AE101 through AE307). Appendix H: Patio Covers. Appendix K: Sound Transmission. Appendix V: Swimming Pools, Spas and Hot Tubs. Based on the 2015 International Residential Code (IRC)) published by the International Code Council, *with modifications*; and

C. 2016 California Electrical Code (Part 3 of Title 24) Based on the 2014 National Electrical Code (NEC) published by the National Fire Protection Association; and

D. 2016 California Mechanical Code (Part 4 of Title 24) Based on the 2015 Uniform Mechanical Code (UMC) published by the International Association of Plumbing and Mechanical Officials (IAPMO) and Appendices:

- Appendix B: Procedure to be Followed to Place Gas Equipment in Operation
 - Appendix C: Installation and Testing of Oil Fuel-Fired Equipment
 - Appendix F: Sizing of Venting Systems and Outdoor Combustion and Ventilation Opening Design
 - Appendix G: Example Calculations of Outdoor Air Rate; and
- E. 2016 California Plumbing Code (Part 5 of Title 24) Based on the 2015 Uniform Plumbing Code (UPC) published by the International Association of Plumbing and Mechanical Officials (IAPMO) and Appendices:
- Appendix A: Recommended Rules of Sizing the Water Supply System
 - Appendix B: Explanatory Notes on Combination Waste and Vent Systems
 - Appendix C: Alternate Plumbing Systems
 - Appendix D: Sizing Storm Water Drainage Systems
 - Appendix G: Sizing of Venting Systems
 - Appendix I: Installation Standards
 - Appendix J: Combination of Indoor and Outdoor Combustion and Ventilation Opening Design
 - Appendix K: Potable Rainwater Catchment Systems; and
- F. 2016 California Energy Code (Part 6 of Title 24) Previously adopted; and
- G. 2016 California Historical Building Code (Part 8 of Title 24 Building Standards) previously adopted; and
- H. 2016 California Fire Code (Part 9 of Title 24) Based on the 2015 International Fire Code published by the International Code Council; and
- I. 2016 California Existing Building Code (Part 10 of Title 24) (Provisions previously contained in Chapter 34 of the CBC)
- Appendix Chapter A, Guidelines for the Seismic Retrofit of Existing Buildings
- J. 2016 California Referenced Standards Code (Part 12 of Title 24) Adopted by the Building Standards Commission.
2. AMENDMENT OF CODE. Section 15.04.020 [Amendments to the Building Code] of Chapter 15.04 [Building Code] of Title 15 [Buildings and Construction] of the Town of Portola Valley Municipal Code are hereby amended to read as follows:

15.04.20 Amendments to the Building Code. The following changes and/or modifications to the Building Code are found to be necessary to mitigate the described impacts which are caused by local climatic, geologic and topographic conditions:

- A. Chapter 7A of the California Building Code and Section R327 of the California Residential Code is amended to read:
1. All new buildings shall comply with the Materials and Construction Methods for Exterior Wildfire Exposure. No existing residential building or structure shall be required to conform in its entirety to the requirements of this Section, unless the additions, alterations or repairs to the existing building or structure within any twelve month period affects fifty percent or more of the exterior wall plane surface, or affects fifty percent or more of the floor area.
 - a. Where no studs remain or, if some studs remain, the wall except for the studs has been stripped bare such that one can see through the wall, the wall affected by such changes shall be included in computing the amount of affected exterior wall plane surface for the purpose of applying this section.
 - b. Where any structural changes are made in the building, such as walls, columns, beams or girders, floor or ceiling joists and covering, roof rafters, roof diaphragms, foundations, piles or retaining walls or similar components, the floor area of all rooms affected by such changes shall be included in computing affected floor areas for purposes of applying this section.
 - c. Exceptions:
 - i. A one-story detached accessory building used as a tool or storage shed, playhouse, or similar use provided the floor area does not exceed 120 square feet.
 - ii. An ornamental landscape structure (e.g. trellis, gazebo) with a projected roof area that does not exceed 120 square feet and that is not within fifty feet from a non-exempt structure.
 - iii. An animal shade structure with a projected roof area that does not exceed 120 square feet.
 - iv. An agricultural building, that is defined as a non-residential structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticulture products. "Agricultural building" shall include green houses.
 2. Any addition, alteration, or repair to any building regardless of cause, size, or location, unless otherwise exempt, shall comply with the requirements as specified in Chapter 7A of the 2013 California Building Code or Section R327 of the California Residential Code as follows:
 - a. Exterior walls. Exterior walls shall be approved noncombustible or ignition-resistant material, heavy timber (HT) as defined by California Building Code, Section 602, or log wall construction or shall provide protection from the intrusion of flames and embers in accordance with standard SFM 12-7A-1.
 - i. Exception: Nonstructural repairs involving less than ten percent of the exterior wall surface to an existing building or structure within any one-year

- period are permitted to be made of the same materials of which the building or structure is constructed.
- b. Exterior windows and exterior glazed door assembly requirements. Exterior window, window walls, glazed doors, and glazed openings within exterior doors shall be insulating-glass units with a minimum of one tempered pane on the exterior side, or glass block units, or have a fire-resistance rating of not less than 20 minutes, when tested according to NFPA 257, or in accordance with Section 715, or conform to the performance requirements of SFM 12-7A-2.
 - c. Underside of Appendages (exterior decks). The underside of decks shall be enclosed to grade or the underside of the exposed under-floor shall be protected in accordance with the requirements of this chapter.
3. Compliance with the vegetation clearance requirements found in 701.A.5 and R327.1.5 of the California Residential Code is not required.
- B. California Building Code Section 903, Automatic Sprinkler Systems - Minimum Requirements, is amended to read:
1. The following requirements shall apply to all new buildings or structures requiring a building permit issued by the Town.
 - a. Except as otherwise provided by this section, or as provided under 903.3.1.1 of the 2013 Edition of the California Building Code, automatic fire sprinkler systems shall be installed and maintained in every new building or structure of any type, use, occupancy or size, which requires a building permit issued by the Town.
 - b. The term "automatic fire sprinkler system" as used in this section means an integrated system of underground and overhead piping, including a water supply such as a gravity tank, fire pump, reservoir, pressure tank, or connection by underground piping to a fire main, which complies in all respects with the requirements for such systems contained in standards issued by the National Fire Protection Association based upon occupancy classification.
 2. The following structures are exempt from the requirements of this section:
 - a. Agricultural Buildings. For the purposes of this section, an "agricultural building" is defined as a non-residential structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products. "Agricultural building" shall include green houses.
 - b. Non-residential structures less than 1,000 square feet in floor area.
 3. The requirements of this section are intended to represent minimum standards for new construction. Nothing in this section shall prevent the fire authority from adopting and enforcing any regulations, which impose more stringent requirements. Further, any requirements of the California Building Code, the California Fire Code or the State Building Standards Code, which is

more restrictive, specifies higher standards or mandates specific locations within a structure for automatic sprinkler systems shall be applicable.

C. California Residential Code Section R313, Automatic Sprinkler Systems, is amended to read:

1. No existing residential building or structure shall be required to conform to the requirements of this section, unless the existing dwelling is already equipped with an automatic sprinkler system or the additions, alterations or repairs to the existing building or structure within any twelve month period affects fifty percent or more of the exterior wall plane surface, or affects fifty percent or more of the floor area.
 - a. Where no studs remain or, if some studs remain, the wall except for the studs has been stripped bare such that one can see through the wall, the wall affected by such changes shall be included in computing the amount of affected exterior wall plane surface for the purpose of applying this section.
 - b. Where any structural changes are made in the building, such as walls, columns, beams or girders, floor or ceiling joists and covering, roof rafters, roof diaphragms, foundations, piles or retaining walls or similar components, the floor area of all rooms affected by such changes shall be included in computing affected floor areas for purposes of applying this section.

D. California Building Code Section 1505, Minimum Roofing Standards for Fire Resistance, is amended to read:

1. The following requirements shall apply to all buildings or structures, which require a building permit issued by the Town.
 - a. The roof covering of every building or structure, and all materials applied as part of a roof covering assembly, shall have a minimum fire rating of Class "A" or higher. Where required by the California Building Code, or other provision of law, roof coverings must meet a higher fire rating.
 - b. This section shall not apply to buildings or structures that are less than 120 square feet in size that do not require a permit.
 - c. Not more than twenty-five percent of the roof covering of any building or structure shall be replaced in any twelve-month period unless the new roof covering is made to conform to the requirements for new buildings or structures.
2. The requirements of this section are minimum standards. Where the California Building Code, the California Fire Code, or the State Building Standards Code contain higher standards or additional or more stringent requirements than required by this section, those additional or more stringent requirements shall apply. Further, nothing in this section shall prevent the presiding fire authority from adopting and enforcing regulations imposing more stringent requirements.

E. California Plumbing Code Section 1211.7, Earthquake-Actuated Gas Shutoff Valves, is adopted.

Chapter 7A of the California Building Code and Section R327 of the California Residential Code is amended to read:

3. AMENDMENT OF CODE. Section 15.04.030 [Additions to the Building Code] of Chapter 15.04 [Building Code] of Title 15 [Buildings and Construction] of the Town of Portola Valley Municipal Code are hereby amended to read as follows:

15.04.030 Administration of the Building Code. The following are modifications to the California Building Code to facilitate its administration. California Building Code Chapter 1, Scope and Administration, Divisions I and II are amended to read as follows:

- A. The *Department of Building Safety* in Section 103 shall mean the “Building Department”.
- B. Section 105.1.1 *Annual permit* is deleted
- C. Section 105.2 *Work exempt from permit*, a permit shall not be required for the following:
 - 1. One-story detached accessory building used as a tool or storage shed, playhouse, and similar use provided the floor area does not exceed 120 square feet.
 - 2. Movable cases, counters and partitions not over five feet nine inches high.
 - 3. Retaining walls that are not over four feet in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or III-A Liquids
 - 4. Water tanks supported directly upon grade if the capacity does not exceed 5,000 gallons and the ratio of height to diameter or width does not exceed 2:1
 - 5. Platforms and walks, not more than 30 inches above grade and not over any basement or story below.
 - 6. Painting, papering and similar finish work.
 - 7. Window awnings; supported by an exterior wall for Group R, Division 3 (Single Family Residence), and Group U (Private Garage) Occupancies when projecting not more than 54 inches.
 - 8. Prefabricated swimming pools accessory to a Group R, Division 3 Occupancy in which the pool walls are entirely above the adjacent grade, and if the capacity does not exceed 5,000 gallons.

Unless otherwise exempted, separate plumbing, electrical and mechanical permits will be required for the above-exempted items.

Exemption from the permit requirements shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of the building code or any laws or ordinances of the Town, (e.g. Planning/Zoning).

- D. Section 109.6 *Refunds* is amended as follows:
1. The Building Official may authorize refunding of any fee paid hereunder, which was erroneously paid or collected.
 2. The Building Official may authorize refunding of not more than 80 percent of the permit fee paid when no work has been done under a permit issued in accordance with this code.
 3. The Building Official may authorize refunding of not more than 80 percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or cancelled before any plan reviewing is done.
 4. The Building official shall not authorize refunding of any fee paid except on written application filed by the original permittee not later than 180 days after the date of the fee payment
- E. Section 111.2 *Certificate issued* is amended: After the Building Official inspects the building or structure and finds no violations of the provisions of the code or other laws that are enforced by the building department, the building department shall issue a certificate of occupancy that contains the following:
1. The building permit number
 2. The address of the structure
 3. The name of the owner
 4. The name of the contractor
 5. A description of the structure for which the certificate was issued
 6. The type of construction as defined in Chapter 6
 7. The name of the Planning Director and the Building Official
 8. Any special stipulations and conditions of the building permit
- F. Section 113 *Board of Appeals* shall mean Town Council.
- G. Section 114 *Violations* and California Residential Code Chapter 1, Division II, Section R108.6 *Work commencing before permit issuance* are amended to add:
- Any person who commences any work for which a permit is required, such as, but not limited to: grading, demolition, or on a building, structure, electrical, gas, mechanical, fire protection or plumbing system before

obtaining the necessary permits shall be subject to a fee established by fee resolution that shall be in addition to the required permit fees. Double Building Permit Fees will apply at a minimum of \$500.00 plus \$500.00 fine may be added for each violation (type of construction) where a building permit should have been issued

4. ENVIRONMENTAL REVIEW. Pursuant to the Guideline Section 15061(b)(3) of the California Environmental Quality Act (CEQA), as it does not have a potential for causing a significant effect on the environment.

5. SEVERABILITY. If any part of this ordinance is held to be invalid or inapplicable to any situation by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance or the applicability of this ordinance to other situations.

6. EFFECTIVE DATE; POSTING. This Ordinance shall become effective 30 days after the date of its adoption and shall be posted within the Town in three public places.

INTRODUCED:

PASSED:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

By: _____
Mayor

ATTEST:

Town Clerk

APPROVED AS TO FORM:

Town Attorney

Attachment 1

I. CHANGES OR MODIFICATIONS

Pursuant to State Law, the Town Council of the Town of Portola Valley, in its ordinance adopting an updated building code, changes or modifies certain provisions of the California Building Code as it pertains to the regulation of the fire and structural safety of buildings. Specifically, such changes or modifications are that all roofing materials on all structures are to be Class A or better. New structures with specific exceptions must install automatic fire sprinkler systems. Any new structure shall be constructed with ignition resistant materials and construction methods.

II. FINDING

Pursuant to State Law, including but not limited to Sections 13143.5, 18941.5, 17958.5 and 17958.7 of the California Health and Safety Code, the governing body of the Town of Portola Valley finds that the changes or modifications are reasonably necessary due to certain local climatic, geologic and topographic conditions as described below, which can and do create situations resulting in extremely uncontrollable and contagious fire situations, leading to excessive harm and danger to life and property in the community.

III. LOCAL CONDITIONS

The following conditions make necessary the changes or modifications in the California Building Code and the State Building Standards Code in order to provide a reasonable degree of fire and life safety in this Town.

A. CLIMATIC

a. Conditions

Precipitation ranges from 15 to 24 inches per year with an average of approximately 20 inches per year- 96 percent falls during the months of October through April, and four percent from May to through September, leaving a dry period of at least five months each year. Relative humidity remains in the middle range most of the time, ranging from 45 to 65 percent in the winter, but occasionally falling as low as 15 percent. Temperatures from June through September average above 80°F. It is not unusual to experience several continuous days with the temperatures in the mid to high 90's.

Prevailing winds in the area come from the west. However, winds are experienced from virtually every direction at one time or another. Velocities are generally in the 12 MPH range, gusting from 25 to 35 MPH.

b. Impact

Locally experienced dry periods cause extreme dryness of untreated wood shakes and shingles on buildings and non-irrigated grass, brush, and weeds, which are often near buildings with wooden roofs. Such dryness causes these materials to rapidly ignite and burn intensely. Because of dryness, a rapid burning grass fire or exterior building fire will quickly transfer to other buildings with dry shake or shingle roofs by means of radiation or flying brands, sparks and embers. Where there are large and /or numerous buildings with untreated shakes or shingle exteriors, a small fire can rapidly grow to a magnitude beyond the control capabilities of the fire department, resulting in an excessive loss to the community.

The average rainfall is frequently surpassed by concentrated periods of heavy rainfall. This factor combined with soil types, terrains, and existing road systems, have led to landslides and flooding across both Town and private road systems. The blockage of access routes delays and/or prevents the ability of fire apparatus to respond to emergency scenes. Although the town has identified roads traditionally susceptible to closure, clearing of these routes remains dependent upon knowledge and availability of resources. During 1997 and 1998, partial or complete road blockages were identified on Alpine Road, Wayside Road, Minoca Road and Escobar Road.

In addition to causing fires to burn and spread rapidly, wind(s) frequently cause(s) tree limbs to break and trees to fall, which can damage electrical transmission lines. Fallen power lines not only cause power outages but also spark fires. Local winds will continue to be a definite factor of major fire loss to buildings lacking fire resistive roofs and automatic sprinkler systems.

B. GEOLOGIC

a. Conditions

The Town is located in close proximity to the San Andreas Fault. Buildings and other structures can experience major seismic damage, such as in the Loma Prieta earthquake in 1989. The area is replete with various soils and areas with significant movement potential.

b. Impact

The town is located in an active seismic area. A higher level of performance is expected from buildings and structures in this region. A major earthquake could

result in the cutting –off of response routes of fire companies by damaged and/or blocked roads. Earthquakes of the magnitude experienced locally can cause major damage to electrical transmission facilities and start fires throughout the Town and County. The occurrence of multiple fires will quickly disperse existing fire department resources, thereby reducing and/or delaying their response to any given fire. Even minor seismic activity has an adverse impact on fire protection. Any earth movement which causes buildings to move creates cracking and warping of walls, smoke barriers, door frames, etc., thereby negating the effectiveness of building elements intended to prevent fire and smoke from spreading within the building.

Additionally, these soils are susceptible to seismic shock and moisture concentrations that may result in landslides in hilly and creek-side areas along the fire department access/response routes. Such restrictions of response routes can result in major fire losses in location where buildings are covered with untreated wood shakes or shingles, particularly where these structures have no automatic fire protection systems such as sprinklers.

C. TOPOGRAPHIC

a. Conditions

Large areas of highly combustible dry grass, weeds, brush, and trees adjacent to structures are common throughout the Town. Above ground electrical power transmission lines are suspended through trees and above large areas of dry vegetation. The hilly terrain, limited surface streets, and arrangement of man-made features around many buildings preclude, or greatly limit, any approach to all but one side.

b. Impact

Above ground electrical transmission lines are subject to damage from overloading, winds, trees, earthquakes, and motor vehicle collisions. Fires involving large areas of dry vegetation can quickly grow to a magnitude beyond the local fire department capabilities. The limited number of response routes compound this problem. Additional delays must be anticipated due to the attempts on the part of residents to flee or enter the fire area. Fire damage from these delays results in the need for additional suppression resources to obtain control. The combination of buildings with untreated wood shake or shingle roofs and without fire sprinkler systems and impeded access for the fire department can readily result in multiple building fires and major fire losses.



MEMORANDUM

TOWN OF PORTOLA VALLEY

TO: Mayor and Members of the Town Council

FROM: Brandi de Garneau, Sustainability and Special Projects Manager

DATE: October 26, 2016

RE: Review and Adopt Ordinance and Related Findings to Amend Chapter 15.10 (Green Building) of the Portola Valley Municipal Code

RECOMMENDATION

Staff recommends that the Town Council review and adopt the proposed amendments to Chapter 15.10 (Green Building) of the Portola Valley Municipal Code and related findings, including the provisions that amend the 2016 California Energy Code, Title 24, Chapter 6, of the California Code of Regulations and the 2016 California Green Building Standards Code, Title 24, Chapter 11, of the California Code of Regulations (Attachment 1).

BACKGROUND

The Town of Portola Valley adopted a Green Building Ordinance (Ordinance) in 2010 (Attachment 3) to implement goals and objectives set forth in the “Sustainability Element” of the Portola Valley General Plan for reducing greenhouse gas (“GHG”) emissions, conserving water and energy, encouraging green building, protecting the natural environment, and protecting the health of residents and visitors. This Ordinance was adopted in reference to the 2010 California Building Standards Code. Every three years, the State of California adopts new building standards that are codified in Title 24 of the California Code of Regulations. The 2013 California Energy Code (Title 24, Part 6), contained mandatory energy efficiency measures that were more restrictive than the Town’s Ordinance. As a result of the higher mandatory measures included in the 2013 Energy Code, the Town’s Ordinance became unenforceable. The 2013 code cycle also added a new California Green Building Standards Code (CALGreen), which contains mandatory sustainable design requirements.

Over the last two years, staff has been studying options to update the Town’s Ordinance in light of the building code updates and current green building best practices. As part of this study, staff considered the following options:

- Deferring to the State minimum for CALGreen and the Energy Code
- Adopting CALGreen’s Voluntary Measures, which are organized into tiers
- Adopting the current version of Build It Green’s GreenPoint Rated Checklist
- Continuing with LEED for non-residential and as an option for residential projects

In addition, there were several, valuable green building measures that staff had identified since the original adoption of the Ordinance that would significantly reduce the cost of installation if included as part of the initial building design and construction (e.g., graywater). Staff reviewed

these measures against the current Buildings Standards Code to determine if they were already included, and if so, how they could be augmented to fit current practices in Portola Valley and provide the most opportunity for future building occupants. The State is currently concluding the code cycle for the 2016 California Building Standards Code, which has a target effective date of January 1, 2017. Throughout this process staff has been working closely with the County of San Mateo, PG&E, Build It Green and the California Energy Commission to coordinate the necessary documents required to adopt amendments to 2016 Building Standards Code as part of the Town's Green Building Ordinance. Staff also met extensively with the Town's Water Conservation Committee and industry experts to develop the water-related measures and held a study session with the ASCC and a Public Hearing with the Planning Commission to review the proposed amendments in their entirety.

The proposed Ordinance amendments continue reliance on the Build It Green GreenPoint Rated system for residential projects, with modifications to the existing point requirements outlined below. For non-residential projects, the proposed Ordinance defers to the State code until further study can be done on the cost-effectiveness of exceeding the code for those projects. The key revisions to the Ordinance are outlined below and explained in further detail in the discussion section. The proposed amendments would continue the Town's efforts in promoting sustainable building design, sustainable building construction, and resource conservation as well as begin preparing the Town to meet the State's goal of all new residential construction being net zero energy by 2020.

Summary of Proposed Amendments to the Green Building Ordinance

For new, single-family residential projects:

- Modifies point requirements to respond increased stringency of the Energy Code
The increased stringency of the Energy Code, CALGreen and the updated GreenPoint Rated checklist made the point requirement in the 2010 Ordinance of one additional point for every 30 square feet above the 3,000 square foot threshold more difficult to achieve; however, adjusting the point requirements to one point for every 50 square feet over the 3,000 square foot threshold was found to be achievable for all of the projects that were reviewed.
- Increases the "solar zone" size from 250 square feet to 500 square feet
Amends the Energy Code to require a solar zone for all new single-family homes and increases the solar zone size from 250 square feet to 500 square feet in order to better accommodate larger solar system installations. In response to the ASCC's comments, staff included a provision to allow the project applicant to request a reduced solar zone if they demonstrate how they will meet the entire energy needs of the project within the reduced space (because reducing the solar zone potentially reduced solar production depending on the efficiency of the panels).
- Provides solar "ready" infrastructure
Requires providing space for conduit to support the future installation of solar photovoltaic systems.
- Provides electric vehicle "ready" infrastructure
Amends CALGreen to augment the electricity and conduit requirements to provide users greater flexibility with all electric vehicle types.
- Provides graywater "ready" infrastructure
Requires installation of additional segregated plumbing piping to allow the discharge from all clothes washers and all applicable fixtures from bathrooms located above grade

to be used for irrigation as well as identifying a location for discharge and supplying power to the identified location.

- Requires rainwater catchment systems for landscapes that use turf
Requires installing a rainwater catchment system for new residential projects with landscapes that include the use of turf. The size of the system is based on the irrigation needs, which shall be calculated using a tool called the Applied Water for Turf Calculator.

For new, non-residential projects:

- Removes LEED thresholds and adds third-party verification of CALGreen mandatory requirements
In response to the ASCC's comments, staff reviewed non-residential green building requirements in neighboring jurisdictions and concluded that in the absence of a cost-effectiveness study that compares the LEED energy efficiency requirements to the current Energy Code, the Town should defer to the CALGreen mandatory requirements for new, non-residential projects. However, to insure that the new buildings are constructed to the current building code requirements, staff recommends requiring third-party verification of CALGreen mandatory requirements.
- Adds an EV readiness requirement for new, non-residential
Amends CALGreen to augment the electricity and conduit requirements to provide users greater flexibility with all electric vehicle types.

Committee & Commission Review

The Water Conservation Committee developed and reviewed the proposed water efficiency measures of the Ordinance through a sub-committee in the summer and fall of 2015. At their meeting on December 2, 2015, the Committee as a whole reviewed and approved the final version of the water efficiency measures.

On March 14, 2016, the ASCC voted 5-0 to recommend forwarding the updated Green Building Ordinance to the Planning Commission with the following suggested amendments:

- Offer an option to reduce the size of the solar zone if the project applicant can prove that less space is needed to cover the energy needs of the project.
- Explore increasing the size threshold of non-residential buildings for LEED certification requirements due to the cost of documentation and certification.

Staff revised the Ordinance to address these concerns, which are noted in the revisions outlined below and in green text on the attached, "redlined" Ordinance (Attachment 2). On June 1, 2016, the Planning Commission held a Public Hearing to review the Ordinance and adopted a Resolution recommending that the Town Council approve the proposed Ordinance amendments.

Code Amendment Process

Jurisdictions can adopt local requirements that are above and beyond what is included in the Building Code, referred to as a "reach code." All proposed reach codes must be filed with the State. The proposed amendments to Portola Valley's Ordinance would impact the California Green Building Code (CALGreen) and Energy Code portions of the Building Standards Code.

Amendments to the CALGreen Code must be filed with the Building Standards Commission, which will acknowledge receipt of the amendment documents and review findings in writing.

Amendments to the Energy Code are subject to a review process by the California Energy Commission (CEC), which requires that a cost-effectiveness study be conducted and filed. The cost-effectiveness study must demonstrate that the amendments to the code are financially responsible and do not represent an unreasonable burden to the non-residential and residential applicants. The Town's Ordinance is supported by a cost-effectiveness study that was completed by Pacific Gas and Electric Company (PG&E) on September 2, 2016.

The CEC requires cities to adopt the proposed Energy Code changes by ordinance and then submit them for review. The CEC will then administer a 60-day public comment on the proposed code changes. Town staff will be asked to respond to public comments on an as-needed basis. After the close of the 60-day public comment period, the CEC may request revisions to the Ordinance prior to approval by the Energy Commission. In the case of necessary revisions, staff would return to the Council to present the amended Ordinance.

DISCUSSION

Updating the Town's Green Building Ordinance aligns with several key local and State goals. First, the Town has a long history of promoting sustainability through design and education in order to reduce the community's impact on the environment. On January 28, 2009, the Town's Sustainability Element was adopted, which establishes the following goals: reducing greenhouse gas emissions; implementing green buildings for new and existing structures; protecting water resources; protecting the natural environment; and promoting community education and involvement throughout the process of implementing those goals. Furthermore, the Sustainability Element includes "overarching goals" to minimize the use of nonrenewable resources, to promote principles of green design, and to encourage resource efficiency and the use of sustainable materials in all building projects. Second, the Town is implementing policies that align with The Global Warming Solutions Act of 2006 ("AB 32"), which requires reducing greenhouse gas emissions by 80 percent below 1990 levels by 2050. Third, the Governor's Executive Order B-29-15 requires the community-wide reduction of water consumption below a 2013 baseline year and, although this requirement has changed from a 36 percent to a 10 percent reduction, due to the drought it is expected to continue into the foreseeable future. Fourth, based on 2009 goals established by the California Public Utilities Commission, the State will require all new residential construction projects to be net zero energy by 2020, which will require higher levels of energy efficiency and renewable energy systems that are sized large enough to meet each building's annual energy demands. It is with these sustainability goals in mind that staff proposes the amendments to the Ordinance outlined in detail below.

New Single-Family Residential Projects

Green Building

With this Ordinance amendment, the Town would adopt the green building compliance methodology for the most current version of Build It Green's GreenPoint Rated checklist for New Home Single Family. Staff recommends using the current version of the GreenPoint Rated checklist for the following reasons:

- the checklist is fully compliant with all mandatory State building codes, including CALGreen;
- it is flexible by providing a wide range of green building measures for projects to choose from and implement;
- it places a high emphasis on energy, water and waste while looking at the building holistically;

- it supplements the State's building codes and includes greater focus on indoor air quality and environmentally friendly building materials;
- residents, developers, and architects in Portola Valley are already very familiar with the GreenPoint Rated checklist, which has been used in the Town since 2009; and
- it provides a pathway to an all-electric home and a net zero energy home.

In addition, one of the key benefits of utilizing the Build It Green GreenPoint Rated checklist is third-party verification that all the green building measures are being implemented, including the current CALGreen mandatory measures.

The existing Ordinance, which is not currently enforceable, required 75 points from the GreenPoint Rated checklist (Version 4.2) for all new residential projects up to 3,000 square feet and one additional point for every 30 square feet over 3,000 square feet. After reviewing multiple new residential projects completed under the existing Ordinance (shown in Figure 1), staff concluded that continuing to require one additional point for every 30 square feet above a 3,000 square foot threshold would be difficult for many homes to achieve when using the most current version of the GreenPoint Rated checklist (Version 6.0.2). However, adjusting the point requirements to one point for every 50 square feet over a 3,000 square foot threshold was found to be achievable for all of the projects that were reviewed. This methodology was supported by Build It Green, which conducted an independent point analysis on the same projects.

Build It Green is updating its checklist to align with the 2016 California Building Code. The new checklist Version 7.0 (Attachment 4) represents minor updates that build upon the significant updates completed for Version 6.0.2, which is the version staff's analysis was based on. Version 7.0 deletes measures that have become code-required, addresses CALGreen mandatory measures and includes revised measures for current best practices and energy compliance pathways aligned with the 2016 Code. There are 14 new, proposed optional measures and 3 innovative measures in Version 7.0, which provide additional opportunities beyond Version 6.0.2 to meet the point requirements (Attachment 5). Therefore, staff recommends requiring 75 points from the GreenPoint Rated checklist for all new single-family residential projects up to 3,000 square feet and one additional point for every 50 square feet over 3,000 square feet.

Figure 1

GreenPoint Rated Comparison: > 3,000 sq ft						
		Version 4.2		Version 6.0.2 (1 pt/30 sq ft)		Version 6.0.2 (1 pt/50 sq ft)
Address	Square Footage	Points Required (30 sq ft)	Proposed Total Points	Points Required (30 sq ft)	Calculated Total Points	Points Required (50 sq ft)
50 Pine Ridge	6,571	194	201	194	156	147
9 Redberry	6,143	180	188	180	167	138
205 Cervantes	5,370	154	161	154	130	123
3 Thistle	4,098	112	173	112	134	97

Energy Efficiency

The amended Ordinance would require projects to exceed the California Energy Code by at least 10 percent for new single-family homes, as this is the requirement for certification under of Build It Green’s GreenPoint Rated checklist. As mentioned above, exceeding the minimum standards of the California Energy Code requires a cost-effectiveness study to be conducted for the specific climate zone where exceeding the Energy Code is being proposed. On September 2, 2016, PG&E completed a cost-effectiveness study for low-rise residential buildings in the San Francisco Bay Area, Climate Zone 3 under the California Statewide Codes and Standards Program (Attachment 6). The study demonstrates that exceeding the Energy Code by 10 percent is cost effective for new single-family homes.

Solar

The 2016 California Energy Code has mandatory requirements for solar “ready” buildings that currently apply only to residences in subdivisions of ten or more. These solar ready requirements include a minimum “solar zone,” which is an unshaded and un-penetrated space on the roof for future solar system installations, a pathway for routing conduit and plumbing within construction documents, and a main service panel with a minimum busbar rating of 200 amps (Attachment 7).

The proposed Ordinance amendment would require installing solar “ready” infrastructure on all new single-family residential projects in order to better facilitate the future installation of solar photovoltaic and solar thermal systems. Solar ready infrastructure includes providing a pathway for conduit and plumbing that shall be routed from the attic space (or equivalent) to the point of

interconnection with the electrical service panel and the water-heating system. Requiring solar ready infrastructure during initial construction process will reduce the cost of installing a solar system in the future.

Additionally, the proposed Ordinance amendment would require a solar zone for all new single-family residential projects and would also require increasing the solar zone size. Staff recommends amending the Energy Code and requiring the solar zone for all new single-family residential projects and increasing the solar zone size from 250 square feet to 500 square feet in order to better accommodate larger solar system installations. Staff does not recommend increasing the solar zone size for new multifamily projects as the California Energy Code already requires the solar zone to be 15 percent of the total roof area excluding skylights.

Electric Vehicles

As of July 1, 2015, the CALGreen Code was amended to include mandatory standards for electric vehicle infrastructure for new residential projects (Attachment 8). It requires installing a listed raceway (i.e., an enclosed conduit that forms a physical pathway for electrical wiring.) to accommodate a dedicated 208/240-volt branch circuit. Additionally, the service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit.

In order to better facilitate the use of electric vehicles, staff recommends amending the Ordinance for all new single-family residential projects to include, at a minimum: (1) a panel capable of accommodating a dedicated branch circuit and service capacity to install a 208/240V, 50 amperes grounded AC outlet; and (2) raceway or wiring with capacity to accommodate a 100 ampere circuit; terminating in (3) a listed cabinet, box, enclosure, or NEMA receptacle. The raceway would need to be installed so that minimal removal of materials is necessary to complete the final installation. Staff's recommendation to increase the amperes from 40 to 50 is due to recommendations from Tesla Motors, Inc. that 50 amperes will give users greater flexibility with all electric vehicle types. Additionally, Tesla Motors, Inc. stated that increased amperes would likely be necessary in the near future as all major electric vehicle manufacturers increase vehicle battery sizes to improve the vehicle's range.

Water Efficiency

In order to mitigate the effects of California's ongoing drought, and to better conserve natural resources, the Town has made decreasing potable water use a high priority. The proposed Ordinance amendment would require installing graywater "ready" infrastructure to allow for the future installation of a graywater treatment system and distributed irrigation.

The State's current Plumbing Code only allows for untreated graywater to be used for subsurface irrigation. To allow for the most flexibility in utilizing graywater, the proposed measures require identifying an appropriate location for a graywater treatment system, including storage tanks for the graywater before and after it is processed. Additional, segregated plumbing piping would be required to allow for the discharge from all clothes washers and all applicable fixtures from bathrooms located above grade. The discharge pipe would be connected to the black pipe outside of the building foundation, in the location identified for the treatment system, to better facilitate a future connection to the graywater treatment system and/or irrigation system. A power supply to this location would also be required. Only above grade bathrooms are subjected to the requirements of this proposed Ordinance amendment to allow for the system to be gravity fed and negate the need for additional electrical or plumbing components.

The graywater ready infrastructure requirements would not require any new residential projects to utilize graywater for irrigation systems. The requirements are meant to reduce the cost for implementing the graywater systems by establishing requirements during a project's initial construction.

In addition to utilizing graywater, staff worked with the Town's Water Conservation Committee to find other innovative ways to reuse water in order to relieve the current high demand for potable water in outdoor irrigation. As a result, the proposed Ordinance amendment includes a requirement for installing a rainwater catchment system for new residential projects with landscapes that include turf. Staff developed a calculator with the State Department of Water Resources that uses local climate data to determine the annual water needs of various kinds of turf in Portola Valley, called the Applied Water for Turf Calculator (Attachment 9).

Using the Applied Water for Turf Calculator, the rainwater catchment system would vary in size depending on the total square footage of the turf (Figures 2 & 3). For the first 500 square feet of turf, the rainwater catchment system would be sized in order to meet 50 percent of the calculated annual water needs. For landscapes with turf over 500 square feet, the rainwater catchment system would be sized in order to meet 100 percent of the calculated annual water needs over 500 square feet. The reduced rainwater catchment system requirements for landscapes with turf of 500 square or less is meant to better accommodate new residential projects that seek to have only a relatively small amount of turf.

As an alternative to installing a rainwater catchment system, new residential projects can install a fully operational graywater system that satisfies all of the annual water demands of the turf as identified in the Applied Water for Turf Calculator. This is complimentary to the newly adopted Water Efficient Landscape Ordinance, which allows for following prescriptive measures if the water needs of the landscape are met with graywater and/or rainwater.

Figure 2

Applied Water for Turf Calculator	
Choose the Type of Turf	Cool Season Turf
Enter the Turf Area (500 square feet or less)	500
Enter the Turf Area (more than 500 square feet)	500
Choose Irrigation Type	Spray Irrigation
Annual Watering Needs for Turf (gallons)	15,494

Common Types of Irrigated Turf
 Cool Season: Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue. Warm Season: Bermudagrass, Kikuyugrass, Seashore Paspalum, St. Augustinegrass, Zoysiagrass, and Buffalo grass.

Figure 3

Applied Water for Turf Calculator	
Choose the Type of Turf	Cool Season Turf
Enter the Turf Area (500 square feet or less)	500
Enter the Turf Area (more than 500 square feet)	500
Choose Irrigation Type	Spray Irrigation
Annual Watering Needs for Turf (gallons)	15,494

For landscapes over 500 sq ft
This cell is only for landscapes greater than 500 square feet. If your landscape is over 500 square feet, subtract the total minus 500 (e.g., 750 - 500 = 250). If your landscape is NOT larger than 500 square feet put "0."

Residential Construction Additions and/or Remodel Projects 400 Square Feet or Greater

The requirements for residential construction additions and/or remodel projects remain equivalent to the original Ordinance. The language in the Ordinance has been amended for clarity and defines a trigger of 400 square feet or greater to align with the threshold for review by the ASCC. Residential construction additions and/or remodel projects are required to use the current version of Build It Green’s GreenPoint Rated checklist for Existing Home Single Family. A “Whole House” project is required to achieve 50 points and 25 points for a smaller “Elements” project, both as defined by Build It Green. Additionally, for a Whole House project GreenPoint Rated certification using certified professional raters is still required and for an Elements project self-certification is allowed.

Small Residential Additions and/or Remodels

The requirements for small residential additions and/or remodel projects remain equivalent to the original Ordinance. Small residential additions and/or remodels are defined as projects less than 400 square feet and require completion of the Build It Green’s GreenPoint Rated Checklist for Existing Home Single Family as a working/learning document, but no minimum points are required and self-certification is permitted.

New Non-Residential Projects

For non-residential projects, the proposed Ordinance amendment removes the requirement to meet a certain level of LEED certification based on square footage. Staff compared the LEED green building rating system to the voluntary “tiers” offered as options under the state’s CALGreen Code. In response to the ASCC’s comments, staff also reviewed non-residential green building requirements in neighboring jurisdictions and concluded that in the absence of a cost-effectiveness study that compares the LEED energy efficiency requirements to the current

Energy Code, the Town should defer to the CALGreen mandatory requirements for new, non-residential projects. However, to insure that the new buildings are constructed to the current building code requirements, staff recommends requiring third-party verification of CALGreen mandatory requirements. Staff is also recommending that new, non-residential projects are required to implement the additional electric vehicle readiness measures outlined for new residential construction projects to provide users greater flexibility with all electric vehicle types.

CEQA REVIEW

The Green Building Ordinance amendment is not subject to the California Environmental Quality Act pursuant to Section 15308 of the CEQA Guidelines because it is an action taken by a regulatory agency for the protection of the environment.

NEXT STEPS

In the face of the increased stringency of the 2013 California Building Standards Codes, the delay in the completion of needed cost-effectiveness studies and reduced building department staff, many jurisdictions abandoned their reach codes. With the September 2, 2016 cost-effectiveness study provided by PG&E, this amendment to the Green Building Ordinance was able to focus on new residential construction to reinstate the intentions of the original Ordinance. As new cost-effectiveness studies become available, staff will return to the Council with additional updates to the Ordinance to further address non-residential and multi-family projects. In addition, the Sustainability Manager, Building Inspector and Town Manager have committed to meeting quarterly to review additional opportunities for advancing the town's building stock to meet the State's net zero energy goals and the Council's commitment to reducing greenhouse gas emissions. Staff will update the Council of the effective date of the Ordinance once the California Energy Commission has formally adopted it.

ATTACHMENTS

1. Proposed Ordinance Amending Chapter 15.10 (Green Building) of the Municipal Code
2. Proposed Code Amendments to Chapter 15.10 redlined (ASCC/PC amendments in green)
3. Original Green Building Ordinance adopted in 2010
4. Build It Green's GreenPoint Rated checklist for New Home Single Family –Version 7.0 Draft
5. Executive Summary Proposed Updates to GreenPoint Rated Version 7.0
6. CA Statewide Codes and Standards Program CALGreen Cost Effectiveness Study
7. California Energy Code, Section 110.10 Mandatory Requirements for Solar Ready Buildings
8. CALGreen Code, Section 4.106.4 Electric Vehicle Charging for New Construction
9. Applied Water for Turf Calculator Summary

Approved by: Jeremy Dennis, Town Manager



ORDINANCE NO. 2016 –**ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF PORTOLA VALLEY AMENDING CHAPTER 15.10 [GREEN BUILDING] OF TITLE 15 [BUILDINGS AND CONSTRUCTION] OF THE PORTOLA VALLEY MUNICIPAL CODE**

WHEREAS, the Town Council of the Town of Portola Valley desires to amend Chapter 15.10 [Green Building] of Title 15 [Buildings and Construction] of the Portola Valley Municipal Code to implement goals and objectives set forth in the Sustainability Element of the Portola Valley General Plan for reducing greenhouse gas (GHG) emissions, conserving water and energy, encouraging green building, protecting the natural environment, and protecting the health of residents and visitors;

WHEREAS, green building design, construction, restoration, operation and maintenance can have a significant positive effect on energy, water and resource conservation, waste management and pollution generation, and the health and productivity of a property's residents, workers and visitors over the life of a building and/or site;

WHEREAS, green building regulations comprise a significant component of a whole systems approach to the Town's sustainability program related to building and land use, other components of which include, but are not limited to, requirements for recycling of construction and demolition debris, storm water quality and flood protection, water conservation, protection against unstable slopes and earthquake faults, preservation of trees and natural landforms on building sites and open space conservation; and,

WHEREAS, the 2016 California Building Standards Code adopted by the California Building Standards Commission has set minimum Green Building Standards and, within the code, has expressly stated that the standards are viewed as "minimal" and that local government entities retain discretion, pursuant to Health and Safety Code Section 17958 to exceed the standards established by the code based on express findings relative to local climatic, topographical or geological conditions.

WHEREAS, the provisions of California Assembly Bill 32 (Global Warming Solutions Act) require action on the part of state and local governments to significantly reduce GHG emissions within prescribed time periods and the Town Council has taken actions to commit the town to pursue the requirements of AB 32;

WHEREAS, the Town Climate Protection Task Force, at the request of the Town Council, considered how best to achieve AB 32 objectives, and the Building, Energy and Efficiency and Transportation (BEET) Committee of the Task Force concluded that

a building evaluation and rating system was appropriate for new buildings and major additions and remodeling of existing buildings to ensure these projects would make necessary contributions to the overall local program for meeting AB 32 objectives;

WHEREAS, based on the findings of the BEET Committee, the Town Council appointed a Planning Commission and Architectural and Site Control Commission subgroup to study, test and inform the community of appropriate green building regulations and this subgroup completed its work, including public workshops, and forwarded its recommendations to the Town Council in the March 4, 2010 report to Town Council from the Deputy Town Planner; and

WHEREAS, the Town Council adopted Chapter 15.10 [Green Building] of Title 15 [Buildings and Construction] of the Municipal Code on May 12, 2010 and now seeks to amend Chapter 15.10 to reflect changes to the 2016 California Building Standards Code and add additional provisions to continue to meet AB 32 objectives.

NOW, THEREFORE, the Town Council of the Town of Portola Valley does **ORDAIN** as follows:

1. Findings. The Town Council of the Town of Portola Valley hereby finds and declares as follows:

A. CEQA Findings. This ordinance is exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15308 because it is an action taken by a regulatory agency for the protection of the environment.

B. General Findings.

a. The California Building Standards Code is contained in Title 24 of the California Code of Regulations, and consists of several parts that are based upon model codes with amendments made by various State agencies. The California Green Building Standards Code, also known as the CALGreen Code, is Part 11 of Title 24 of the California Code of Regulations, and the Town of Portola Valley has enacted the Portola Valley Green Building Ordinance as amendments to the California Green Building Standards Code.

b. Local jurisdictions are required to enforce the California Green Building Standards Code, but they may also enact more stringent standards when reasonably necessary because of local conditions caused by climate, geology, or topography.

C. Findings Regarding Local Conditions Required by the California Health and Safety Code.

- a. Section 17958 of the California Health & Safety Code provides that the Town may make changes to the provisions in the uniform codes that are published in the California Building Standards Code. Sections 17958.5 and 17958.7 of the Health & Safety Code require that before making any changes or modifications to the California Green Building Standards Code and any other applicable provisions published by the State Building Standards Commission, the governing body must make an express finding that each such change or modification is reasonably necessary because of specified local conditions, and the findings must be filed with the State Building Standards Commission before the local changes or modifications go into effect.
- b. The Town Council expressly declares that the following amendments to the Portola Valley Green Building Ordinance are reasonably necessary due to local climatic, geological and topographic conditions as listed below.
- c. The Town is located within the southern hillside portions of San Mateo County with elevations ranging from just below 300 feet to over 1,800 feet above sea level. The Town occupies approximately 5,785 acres consisting largely of a natural valley containing steep, rugged tree-covered slopes and open mountains on the west and lower more gently rolling hills on the east. The San Andreas Rift Zone, an area of past and probably future earth movement, follows the floor of the valley. Much of the land southwest of the San Andreas Rift Zone consists of active or geologically recent landslides. The Town has mapped the complex geology of the area and adopted land use regulations based on this mapping to reduce risk to residents and private and public improvements.
- d. Due to its hillside location, the Town is in a climate zone that has precipitation averaging approximately 15 inches per year. Most precipitation falls during the months of November through April, with a relatively dry period extending over six months of the year in a non-drought year. Due to the amount of open space, the reliance upon potable water for irrigation, and vulnerability to wildfire, Portola Valley experiences the effects of the drought more than other communities. Efficient use of potable water and local storm water management are essential to ensuring against loss of natural vegetation and minimizing the impacts associated with erosion, sedimentation and ground-water pollution as well as protecting against unstable slopes.

- e. The Sustainability Element of the General Plan recognizes that emission of GHG may impact weather patterns and sets forth goals that recognize energy and water efficiency in buildings as key components in reducing emissions. The burning of fossil fuels used in the generation of electric power and heating of buildings produces GHG emissions that contribute to climate change, which could result in rises in sea level, flooding, temperature increases, and wildfire that put at risk Portola Valley homes, businesses, public facilities and transportation routes. It is reasonably necessary to require building owners to take steps to reduce the energy and water consumed by building operations and reduce the use of potable water for irrigation in order to reduce GHG emissions and improve resiliency to climate change.
- f. Pacific Gas and Electric Company prepared the September 2, 2016 CALGreen Cost Effectiveness Study to calculate the cost effectiveness of exceeding the 2016 California Building Energy Efficiency Standards, which go into effect January 1, 2017. This study identified the low incremental costs associated with exceeding the state standards as provided for in this proposed Green Building Ordinance for the Town. Based upon the findings of this cost-effectiveness study, the Town Council hereby determines that these local energy standards are cost-effective and will save more energy than the standards contained in the 2016 California Green Building Standards (CALGreen) Code (Title 24 Part 11) and the 2016 California Energy Standards (Title 24 Part 6).
- g. The Portola Valley Green Building Ordinance will require buildings to be designed to consume no more energy than permitted by the 2016 California Energy Standards Title 24 Part 6. All permit applicants will continue to be required to demonstrate compliance with Title 24 Part 6 using the standard forms and calculation methods approved by the California Energy Commission. Nothing in this Ordinance is intended to duplicate, contradict, or infringe upon the provisions of state law, including the California Building Standards Code. The Ordinance and associated checklists provide many opportunities to achieve required points and credits that do not impact areas where the state has established building standards.
- h. The Architectural Site & Control Commission considered the Ordinance at a noticed meeting on March 14, 2016 and recommended minor modifications. The Planning Commission considered the Ordinance with the modifications at a duly noticed public hearing on June 1, 2016 and adopted a resolution recommending approval by the Town Council.

- i. Because the design, restoration, construction and maintenance of buildings and structures within the town can have a significant impact on the Town's environment, greenhouse gas emissions, resource usage, energy efficiency, waste management, and health and productivity of residents, workers, and visitors over the life of the building, requiring commercial, institutional and residential projects to incorporate green building measures is necessary and appropriate to achieve the public health and welfare benefits of green building. The proposed amendments are designed to achieve the following goals:
 - i. Increase energy and water efficiency in buildings;
 - ii. Increase resource conservation;
 - iii. Provide durable buildings that are efficient and economical to own and operate;
 - iv. Promote the health and productivity of residents, workers, and visitors to the town;
 - v. Recognize and conserve the energy embodied in existing buildings; and
 - vi. Reduce disturbance of natural ecosystems, vegetation and environments.
2. Amendment of Code. Chapter 15.10 [Green Building] of Title 15 [Buildings and Construction] of the Portola Valley Municipal Code is hereby amended to read as follows:

CHAPTER 15.10 - GREEN BUILDING

Sections:

- | | |
|-----------|--|
| 15.10.010 | Purpose |
| 15.10.020 | Applicability |
| 15.10.030 | Definitions |
| 15.10.040 | Standards for Compliance |
| 15.10.050 | Administrative Procedures and Implementing Regulations |
| 15.10.060 | Hardship or Infeasibility Exemption |
| 15.10.070 | Appeal |

15.10.010 - Purpose.

The purpose of this chapter is to enhance the public health and welfare by promoting the environmental health of the town through the incorporation of green building practices in the design, construction, maintenance, operation and deconstruction of buildings and other site development. The green building provisions in this chapter are designed to achieve the following goals:

- (a) Encourage the conservation of natural resources and reduction of greenhouse gas emissions;
- (b) Increase energy efficiency and lower energy usage;
- (c) Increase water efficiency and lower water usage;
- (d) Reduce waste generated by construction projects;
- (e) Provide durable buildings that are efficient and economical to own and operate;
- (f) Recognize and conserve the energy embodied in existing buildings; and
- (g) Promote the health of residents, workers, and visitors to the town.

15.10.020 - Applicability.

This chapter applies to all projects defined as "covered projects," as defined in Section 15.10.030, except that it shall not apply to any project for which a planning entitlement application (except preliminary architectural review applications) or building permit application has been submitted prior to the effective date of this chapter.

15.10.030 - Definitions.

For purposes of this chapter, the following terms are defined as follows:

- (a) "Addition" means new construction square footage added to an existing structure.
- (b) "Applicant" means anyone that applies to the town for the applicable permits or approvals to undertake any covered project within the town, or any subsequent owner of the site.
- (c) "Applied Water for Turf Calculator" is a tool that uses data and methodology from the California Department of Water Resources to estimate the irrigation water requirements for turf minus any water supplied by effective rainfall and effective ground water seepage. The calculator uses the evapotranspiration of applied water (ETaw) for cool-season and warm-season turf that was calculated based on a six-year period of climate data specific to a 4x4 km grid spacing within the town.

- (d) "Build It Green" is a non-profit membership organization whose mission is to promote healthy, energy- and resource-efficient building practices in California. Build It Green created Green Building Guidelines that are a comprehensive resource of best practices for green building. The Build It Green Checklists are tools used to assess how environmentally friendly a proposed building project will be via the use of a point system.
- (e) "CALGreen" is the California Green Building Standards Code.
- (f) "Compliance threshold" means the minimum number of points or rating level of a green building rating system that must be attained for a particular covered project, as outlined in the standards for compliance in Section 15.10.040.
- (g) "Covered project" means any planning entitlement application(s) or building permit application(s) for new non-residential construction, or for any new residential construction, addition or remodel subject to the standards for compliance outlined in Section 15.10.040.
- (h) "Elements" means a project where a portion of the home is undergoing a remodel or addition (e.g., a kitchen remodel or master bedroom addition).
- (i) "Good faith effort" means a project that has not met the required compliance threshold, but for extenuating reasons or reasons beyond the control of the applicant, the planning director or his/her designee has found that the project meets the good faith effort provisions of Section 15.10.060.
- (j) "Graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.
- (k) "Green building" means a whole systems approach to the design, construction and operation of buildings that substantially mitigates the environmental, economic, and social impacts of buildings. Green building practices recognize the relationship between the natural and built environments and seek to minimize the use of energy, water and other natural resources and provide a healthy, productive indoor environment.
- (l) "Green building project checklist" means a checklist or scorecard developed for the purpose of calculating a green building rating.
- (m) "Green building rating system" means the rating system associated with specific green building criteria and used to determine compliance thresholds, as outlined in the standards for compliance in Section 15.10.040. Examples of rating systems include, but are not limited to, the GreenPoint Rated systems.
- (n) "GreenPoint Rated" means a residential green building rating system developed by the "Build It Green" organization.

- (o) "GreenPoint Rated verification" means verification of compliance by a certified GreenPoint Rater, resulting in green building certification by Build It Green.
- (p) "Multi-family residential" means a building containing three or more attached dwelling units.
- (q) "New non-residential construction" means the construction of a new or replacement retail, office, institutional, semi-institutional or similar building(s), or additions to such building(s).
- (r) "New residential construction" means the construction of a new or replacement single-family or two-family dwelling unit or new or replacement multi-family residential building(s), or additions to such building(s).
- (s) "Qualified green building professional" means a person trained through Build It Green as a certified green building professional, or similar qualifications if acceptable to the planning director or his/her designee. For projects requiring self-certification, the project architect or designer is considered a qualified green building professional.
- (t) "Rainwater catchment system" means the collected precipitation from rooftops and other above-ground impervious surfaces that is stored in catchment tanks for later use.
- (u) "Remodel" means any rehabilitation, repair, renovation, change, or modification to an existing building, where changes to floor area and the footprint of the building are negligible.
- (v) "Self verification" means verification by the project architect, designer or a qualified green building professional certifying that the project has met the standards and has attained the compliance threshold as indicated for the covered project type as set forth in the standards for compliance outlined in Section 15.10.040.
- (w) "Single-family or two-family residential" means a single detached dwelling unit or two units in a single building or two separate buildings on a single parcel, such as a main residence and second unit.
- (x) "Solar zone" means an allocated space that is unshaded, un-penetrated, and free of obstructions. It serves as a suitable place that solar panels can be installed at a future date.
- (y) "Square footage" means all new and replacement square footage, including basement areas (seven feet or greater in height) and garages, except that unconditioned garage space shall only count as fifty percent of that square footage. Areas demolished shall not be deducted from the total new construction square footage.
- (z) "Turf" means a ground cover surface of mowed grass. All of the following qualify as turf: annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and tall fescue (cool-season grasses). Bermuda grass, Kikuyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, and Buffalo (warm-season grasses).

(aa)“Whole House” project means the homeowner is completing a gut remodel and replacing all of the systems. A gut remodel incorporates stripping less than 90% of the walls to the studs (leaving the foundation framing and exterior finish), which enables one to replace all systems and address the thermal envelope and insulate. If a home has removed significant framing and the exterior cladding, leaving very little of the original home, it shall apply under the new residential construction.

15.10.040 - Standards for Compliance.

The standards for compliance are as follows:

1. New Residential Construction. New homes shall demonstrate GreenPoint Rated certification using certified professional raters. The number of Build It Green points required pursuant to this section shall be calculated in accordance with the GreenPoint Rated Single Family Checklist, with the exception that if California Building Code Title 24, Part 6 is updated after the effective date of this chapter to be more stringent, item J.5. in the GreenPoint Rated Single Family Checklist shall not be included in calculating the number of points required until such time as the appropriate cost effectiveness study has been completed.
 - A. For projects up to and including 3,000 sf. A minimum threshold of 75 Build It Green points, with GreenPoint Rated certification prior to building permit sign-off/occupancy.
 - B. For projects over 3,000 sf. A minimum threshold of 75 Build It Green points with one additional point for each 50 sf over 3,000 sf, and with GreenPoint Rated certification prior to building permit sign-off/occupancy.
 - C. Basement floor area. Basement floor area must be included in the total floor area for point calculations.
 - D. Solar Photovoltaic and Solar Thermal “Ready” Infrastructure. “Section 110.10 Mandatory Requirements for Solar Ready Buildings” of the California Energy Code is added as mandatory and amended to read:
 - (1) Solar zone. The solar zone shall be located on the roof or overhang of the building and have a total area of no less than 500 square feet. If the project applicant determines that the entire energy needs of the project can be met with a solar photovoltaic system that occupies less than 500 square feet, the project applicant can demonstrate this with the Title 24 Calculation and solar photovoltaic system plans.
 - (2) Interconnection pathways. New residential construction projects shall provide a pathway for conduit and plumbing to support the installation of future solar photovoltaic and solar thermal infrastructure. The

pathway for conduit and plumbing shall be routed from the attic space (or equivalent) to the point of interconnection with the electrical service panel and the water-heating system.

- E. Electric Vehicle “Ready” Infrastructure. “Section 4.106.4 Electric vehicle (EV) charging for new construction” of the California Green Building Standards Code is added as mandatory and amended with the additional requirements as outlined below.
- (1) Service panel and/or subpanel shall provide, at minimum, capacity to install a 208/240v, 50 amperes grounded AC outlet and dedicated branch circuit.
 - (2) Raceway or wiring with capacity to accommodate a 100 ampere circuit; terminating in a listed cabinet box, enclosure, or NEMA receptacle.
 - (3) The raceway shall be installed so that minimal removal of materials is necessary to complete the final installation.
- F. Graywater “Ready” Infrastructure. Install graywater “ready” systems as outlined below. Additional plumbing piping is installed to permit the discharge from all clothes washers and all applicable fixtures from bathrooms located above grade to allow for future installation of a distributed irrigation system. All graywater “ready” systems must be installed in compliance with Chapter 16 of the California Plumbing Code.
- (1) Identify an appropriate location for future installation of a graywater treatment system, including storage tanks.
 - (2) Include either a separate multiple pipe outlet or a diverter valve and an outside “stub-out” installation on clothes washing machine hook-ups, to allow separate discharge of graywater direct for irrigation.
 - (3) Include a building drain(s) for lavatories, showers, and bathtubs, segregated from drains for all other plumbing fixtures, connected to the black water pipe a minimum of three (3) feet from the building foundation.
 - (4) Provide power supply for future graywater treatment system.
 - (5) The graywater system shall be comprised of purple piping. The diverter valve on the clothes washing machine system shall be labeled as “LAUNDRY-TO-LANDSCAPE CAPABLE.”
- G. Reduction of Potable Water Use on Turf. For all projects with landscapes that include the use of turf, install rainwater catchment system. Irrigation needs of turf should be calculated using the Applied Water for Turf Calculator. All rainwater catchment systems must be installed in compliance

with Chapter 17 of the California Plumbing Code.

- (1) Rainwater Catchment System Size. The rainwater catchment system size shall be determined by using the Applied Water for Turf Calculator. The rainwater catchment system will need to be sized in order to satisfy 50 percent of the estimated annual water demands for the first 500 square feet of turf installed on the project. The rainwater catchment system will need to be sized in order to satisfy 100 percent of the estimated annual water demands for installed turf that is greater than 500 square feet.
 - (2) Alternative. A fully installed graywater system connected to an irrigation system that can satisfy all of the annual water demands of turf as identified in the Applied Water for Turf Calculator can be used as an alternative to installing a rainwater catchment system.
2. Residential construction additions and/or remodel projects 400 square feet or greater. The number of Build It Green points required pursuant to this section shall be calculated in accordance with the GreenPoint Rated Existing Home Single Family Checklist.
 - A. For whole house projects. A minimum threshold of 50 Build It Green points, with GreenPoint Rated certification prior to building permit sign-off/occupancy.
 - B. For elements projects. A minimum threshold of 25 Build It Green points, with self-certification allowed.
 - C. Basement floor area. Basement floor area must be included in the total floor area for point calculations.
 3. Small residential additions or remodels. For small residential addition or remodel projects, which are projects less than 400 square feet, completion of the Build It Green GreenPoint Rated Existing Home Single Family Checklist shall be required as a working/learning document, but no minimum points are required and self-certification is permitted.
 4. Non-residential projects. New, non-residential projects shall comply with all mandatory CALGreen measures. The mandatory measures shall be verified by a third party approved by the Town for which the applicant will pay for the review.
 - A. Electric Vehicle “Ready” Infrastructure. “Section 5.106.5.3 Electric vehicle (EV) charging for new construction” of the California Green Building Standards Code is added as mandatory and amended with the additional requirements as outlined below.
 - (1) Service panel and/or subpanel shall provide, at minimum, capacity to

install a 208/240v, 50 amperes grounded AC outlet and dedicated branch circuit.

- (2) Raceway or wiring with capacity to accommodate a 100 ampere circuit; terminating in a listed cabinet box, enclosure, or NEMA receptacle.
- (3) The raceway shall be installed so that minimal removal of materials is necessary to complete the final installation.

15.10.050 - Administrative Procedures and Implementing Regulations.

(a) The planning director shall promulgate any rules and regulations necessary or appropriate to achieve compliance with the requirements of this chapter. The rules and regulations shall provide, at a minimum, for the incorporation of green building requirements of this chapter into checklist submittals with planning entitlement and building permit applications, and supporting design, construction, or development documents to demonstrate compliance with this chapter.

(b) The procedures for compliance documentation shall include, but not be limited to, the following:

- (1) Preliminary documentation. Applicants for a covered project are encouraged, but not required, to meet with the planning director or his/her designee, in advance of submittal of an application, to determine required green building thresholds for compliance and to review the proposed green building program and details to achieve compliance.
- (2) Discretionary planning entitlements. Upon submittal of an application for any discretionary planning entitlement for any covered project, including, but not limited to, architectural review, site development permit, conditional use permit, or variance requests, application materials shall include the appropriate completed checklists, as required by the standards for compliance specified in Section 15.10.040, accompanied by a text description of the proposed green building program and expected measures and milestones for compliance.
- (3) Building plan check review. Upon submittal of an application for a building permit, building plans for any covered project shall include a checklist and green building program description, reflecting any changes proposed since the planning entitlement phase (if a planning entitlement was required). The checklist shall be incorporated onto a separate plan sheet included with the building plans. A qualified green building professional shall provide evidence of adequate green building compliance or documentation to the planning director or his/her designee to satisfy the requirements of the standards for compliance outlined in Section 15.10.040, prior to issuance of a building permit.
- (4) Final building inspection, verification, and occupancy. Prior to final building inspection and occupancy for any covered project, a qualified building professional shall provide evidence of adequate green building compliance or documentation to the director or his/her designee to satisfy the requirements of

the standards for compliance outlined in Section 15.10.040. This information shall include, but is not limited to:

- (i) Documentation that verifies incorporation of the design and construction related credits specified in the project approval for the covered project;
 - (ii) A letter from the qualified green building professional that certifies that the covered project has been constructed in accordance with the approved green building project checklist;
 - (iii) Any additional documentation that would be required by the GreenPoint rated manuals for GreenPoint rated certification (if required); and
 - (iv) Any additional information that the applicant believes is relevant to determining that a good faith effort has been made to comply with this chapter.
- (5) Final determination of compliance and good faith effort to comply. Prior to the scheduling of a final building inspection for a covered project, the planning director or his/her designee shall review the documentation submitted by the applicant, and determine whether the applicant has achieved the required compliance threshold as set forth in the standards for compliance outlined in Section 15.10.040 and/or demonstrate that measures are in place to assure compliance not later than one year after approval of final building inspection. If the planning director or his/her designee determines that the applicant has met the requirements of Section 15.10.040 for the project, the final building inspection may proceed, provided the covered project has received approval of all other inspections required by the chief building official. If the planning director or his/her designee determines that the required green building rating has not been achieved, the planning director or his/her designee shall find one of the following:
- (i) Good faith effort to comply: When an applicant submits a request in writing to the planning director or his/her designee for approval of a good faith effort to comply, the planning director or his/her designee shall determine that the applicant has made a good faith effort to comply with this chapter when finding that either a) the cost for providing green building documentation or assuring compliance is disproportionate to the overall cost of the project, or b) the green building materials and technologies on the green building checklist are no longer available or not yet commercially available, or c) at least eighty percent of the required green point credits have been achieved, and measures are in place to assure full compliance not later than one year after approval of the final building inspection. Determination of a good faith effort to comply shall be made separately for each item on the green building project checklist. Granting of a good faith effort to comply for one item does not preclude the need for the applicant to comply with the other items on the green building checklist.
 - (ii) Non-compliant project. If the planning director or his/her designee determines that the applicant has not made a good faith effort to comply with this chapter, or if the applicant fails to submit the documentation

required within the required time period, then the project shall be determined to be non-compliant, and the final inspection and approval for the project shall be withheld. A final inspection shall not take place until the applicant has implemented equivalent alternate measures approved by the planning director or his/her.

- (6) Non-compliance. If, upon inspection, the building official or planning director determines that the covered project does not comply with the approved plans or green building checklist, a stop order shall be issued if the planning director or his/her designee determines that continuation of construction activities will jeopardize the project's ability to meet the required compliance threshold. The stop order shall remain in effect until project has been brought into compliance with the approved plans and/or checklist.

(c) The planning director or his/her designee shall have the responsibility to administer and monitor compliance with the green building requirements set forth in this chapter and with any rules and regulations promulgated.

(d) Compliance with the provisions of this chapter shall be listed as a condition of approval on any architectural and site control review or other discretionary permit approval, and on the building plans for building permit approval, for any covered project.

15.10.060- Hardship or Infeasibility Exemption.

If an applicant for a covered project believes that circumstances exist that make it a hardship or infeasible to meet the requirements of this chapter, the applicant may request an exemption as set forth below. In applying for an exemption, the burden is on the applicant to show hardship or infeasibility.

- (a) Application. Any request for an exemption must be included at the time of application submittal. The applicant shall indicate the maximum threshold of compliance he or she believes is feasible for the covered project and the circumstances that he or she believes create a hardship or make it infeasible to fully comply with this chapter. Circumstances that constitute hardship or infeasibility include, but are not limited to, the following:
- (1) There is conflict with the compatibility of the green building rating system with other town goals, such as those requiring historic preservation;
 - (2) There is conflict with the compatibility of the green building rating system and the California Building Standards Code;
 - (3) There is conflict with the compatibility of the green building rating system and the town's zoning ordinance and/or architectural review criteria;
 - (4) The green building compliance standards do not include enough green building measures that are compatible with the scope of the covered project; and/or
 - (5) There is a lack of commercially available green building materials and technologies to comply with the green building rating system.

- (b) Review by Architectural and Site Control Commission. For any covered project for which an exemption is requested and architectural and site control review is required, the Architectural and Site Control Commission shall provide a recommendation to the planning director or his/her designee regarding whether the exemption shall be granted, conditionally granted or denied, along with its recommendation on the project. For any project for which an exemption is requested based on the historic character of the building or site, the town historian shall provide a recommendation to the planning director or his/her designee regarding whether the exemption shall be granted or denied and shall determine whether the project is consistent with the Secretary of the Interior's Standards for Historic Rehabilitation.
- (c) Decision by Planning Director (or his/her designee). The planning director or his/her designee shall make a determination based on the information provided. The planning director or his/her designee shall determine the maximum feasible threshold of compliance reasonably achievable for the project. The decision of the planning director or his/her designee shall be provided to the applicant in writing.
 - (1) If the planning director or his/her designee determines that it is a hardship or is infeasible for the applicant to meet the requirements of this chapter, the request shall be granted. Notwithstanding, the applicant shall be required to comply with this chapter in all other respects and shall be required to achieve, in accordance with this chapter, the threshold of compliance determined to be reasonably achievable by planning director or his/her designee.
 - (2) If the planning director or his/her designee determines that it is reasonably possible for the applicant to fully meet the requirements of this chapter, the request shall be denied. The project and compliance documentation shall be modified to comply with this chapter prior to further review of any pending planning or building application.

15.10.070 - Appeal.

- (a) Any aggrieved applicant may appeal the determination of the planning director or his/her designee regarding: (1) the granting or denial of an exemption pursuant to Section 15.10.070; or (2) compliance with any other provision of this chapter.
- (b) Any appeal must be filed in writing with the planning director or his/her designee not later than fourteen days after the date of the determination by the planning director or his/her designee. The appeal shall state the alleged error or reason for the appeal.
- (c) The appeal shall be processed and considered by the planning commission de novo in accordance with the criteria outlined in this chapter.

3. Severability. If any part of this ordinance is held to be invalid or inapplicable to any situation by a court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this ordinance or the applicability of this ordinance to other situations.

4. Effective Date; Posting. This ordinance is subject to review and approval by the California Energy Commission (CEC). This ordinance shall become effective immediately upon full CEC approval. This ordinance be posted within the Town in three public places.

INTRODUCED:

PASSED:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

ATTEST:

Town Clerk

By: _____
Mayor

APPROVED AS TO FORM:

Town Attorney

CHAPTER 15.10 - GREEN BUILDING

Sections:

- 15.10.010 Purpose
- 15.10.020 Applicability
- 15.10.030 Definitions
- 15.10.040 Standards for Compliance
- ~~15.10.050 Incentives for Compliance~~
- 15.10.06050 Administrative Procedures and Implementing Regulations
- 15.10.070060 Hardship or Infeasibility Exemption
- 15.10.080070 Appeal
- ~~15.10.100 Environmental Review~~
- ~~15.10.110 Effective Date, Posting~~

15.10.010 - Purpose.

The purpose of this chapter is to enhance the public health and welfare by promoting the environmental health of the town through the incorporation of green building practices in the design, construction, maintenance, operation and deconstruction of buildings and other site development. The green building provisions in this chapter are designed to achieve the following goals:

- (a) Encourage the conservation of natural resources and reduction of greenhouse gas emissions;
- (b) Increase energy efficiency and lower energy usage;
- (c) Increase water efficiency and lower water usage;
- (ed) Reduce waste generated by construction projects;
- (de) Provide durable buildings that are efficient and economical to own and operate;
- (ef) Recognize and conserve the energy embodied in existing buildings; and
- (fg) Promote the health of residents, workers, and visitors to the town.

15.10.020 - Applicability.

This chapter applies to all projects defined as "covered projects," as defined in Section 15.10.030, except that it shall not apply to any project for which a planning entitlement

application (except ~~for a~~ preliminary architectural review applications) or building permit application has been submitted prior to the effective date of this chapter.

15.10.030 - Definitions.

For purposes of this chapter, the following terms are defined as follows~~The following terms shall have the ascribed definition for the purposes of applying the criteria of this chapter:~~

- (a) "Addition" means new construction square footage added to an existing structure.
- (b) "Applicant" means anyone that applies to the town for the applicable permits or approvals to undertake any covered project within the town, or any subsequent owner of the site.
- (c) "Applied Water for Turf Calculator" is a tool that uses data and methodology from the California Department of Water Resources to estimate the irrigation water requirements for turf minus any water supplied by effective rainfall and effective ground water seepage. The calculator uses the evapotranspiration of applied water (ETaw) for cool-season and warm-season turf that was calculated based on a six-year period of climate data specific to a 4x4 km grid spacing within the town.
- (d) "Build It Green" is a non-profit membership organization whose mission is to promote healthy, energy- and resource-efficient building practices in California. Build It Green created Green Building Guidelines that are a comprehensive resource of best practices for green building. The Build It Green Checklists are tools used to assess how environmentally friendly a proposed building project will be via the use of a point system.
- (e) "CALGreen" is the California Green Building Standards Code.
- ~~(e) "Compliance official" means the town planner or his/her designee.~~
- ~~(ef)~~ "Compliance threshold" means the minimum number of points or rating level of a green building rating system that must be attained for a particular covered project, as outlined in the standards for compliance in Section 15.10.040.
- ~~(eg)~~ "Covered project" means any planning entitlement application(s) or building permit application(s) for ~~commercial~~ new ~~non-residential~~ construction ~~or renovations~~, or for any new residential ~~new~~ construction, addition or ~~renovation~~ remodel subject to the standards for compliance outlined in Section 15.10.040.
- ~~(h)~~ "Elements" means a project where a portion of the home is undergoing a remodel or addition (e.g., a kitchen remodel or master bedroom addition).
- ~~(fi)~~ "Good faith effort" means a project that has not met the required compliance threshold, but for extenuating reasons or reasons beyond the control of the applicant, the ~~compliance official~~ planning director or his/her designee has found that the project meets the good faith effort provisions of Section 15.10.060.
- (j) "Graywater" means untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily

wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. "Graywater" includes, but is not limited to, wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers.

- (~~gk~~) "Green building" means a whole systems approach to the design, construction and operation of buildings that substantially mitigates the environmental, economic, and social impacts of buildings. Green building practices recognize the relationship between the natural and built environments and seek to minimize the use of energy, water and other natural resources and provide a healthy, productive indoor environment.
- (~~hl~~) "Green building project checklist" means a checklist or scorecard developed for the purpose of calculating a green building rating.
- (~~im~~) "Green building rating system" means the rating system associated with specific green building criteria and used to determine compliance thresholds, as outlined in the standards ~~of for compliance in Section 15.10.040 adopted by town council resolution.~~ Examples of rating systems include, but are not limited to, the ~~LEED and~~ GreenPoint Rated systems.
- (~~jn~~) "GreenPoint Rated" means a residential green building rating system developed by the "Build It Green" organization.
- (~~ko~~) "GreenPoint Rated verification" means verification of compliance by a certified GreenPoint Rater, resulting in green building certification by Build It Green.
- ~~(l) "LEED®" means the "Leadership in Energy and Environmental Design" green building rating system developed by the U.S. Green Building Council.~~
- ~~(m) "LEED®/USGBC verification" means verification to meet the standards of the U.S. Green Building Council ("USGBC") and resulting in LEED certification of the project by the USGBC.~~
- (~~np~~) "Multi-family residential" means a building containing three or more attached dwelling units.
- ~~(o) "New building" means a new structure or a substantial addition/remodel to an existing structure where the remodel combined with any additions to the structure affects fifty percent or more of the exterior wall plane surface or affects fifty percent or more of the floor area as more particularly defined in section 15.04.010 of this Code.~~
- (~~pq~~) "New ~~non-residential~~ construction, ~~commercial~~" means the construction of a new or replacement retail, office, institutional, semi-institutional or similar building(s), or additions to such building(s).
- (~~qr~~) "New ~~residential~~ construction, ~~residential~~" means the construction of a new or replacement single-family or two-family dwelling unit or of new or replacement multi-family residential building(s), or additions to such building(s).
- (s) "Qualified green building professional" means a person trained ~~through the USGBC as a LEED accredited professional or~~ through "Build It Green" as a certified green building professional, or similar qualifications if acceptable to the ~~compliance~~

~~official~~planning director or his/her designee. For projects requiring "self-certification," the project architect or designer is considered a qualified green building professional.

- (t) "Rainwater catchment system" means the collected precipitation from rooftops and other above-ground impervious surfaces that is stored in catchment tanks for later use.
- (su) "~~Renovation~~Remodel" means any rehabilitation, repair, ~~remodeling~~renovation, change, or modification to an existing building, where changes to floor area and the footprint of the building are negligible. ~~The valuation of renovation improvements shall be determined by the town planner, upon recommendation of the chief building official. The chief building official may exclude from such valuation the cost of (1) seismic upgrades, (2) accessibility upgrades, or (3) photovoltaic panels or other solar energy or similar devices exterior to the building. Renovation valuation thresholds identified in the standards for compliance shall be adjusted annually to reflect changes in the town's valuation per square foot for new construction in town, using valuations in effect as of July 1, 2008, as the base index.~~
- (tv) "Self verification" means verification by the project architect, designer or a qualified green building professional certifying that the project has met the standards and has attained the compliance threshold as indicated for the covered project type as set forth in the standards for compliance outlined in Section 15.10.040.
- (tw) "Single-family or two-family residential" means a single detached dwelling unit or two units in a single building or two separate buildings on a single parcel, such as a main residence and second unit.
- (x) "Solar zone" means an allocated space that is unshaded, un-penetrated, and free of obstructions. It serves as a suitable place that solar panels can be installed at a future date.
- (vy) "Square footage" means all new and replacement square footage, including basement areas (seven feet or greater in height) and garages, except that unconditioned garage space shall only count as fifty percent of that square footage. Areas demolished shall not be deducted from the total new construction square footage.
- (w) "~~Threshold verification by LEED AP~~" means verification by a LEED-accredited professional certifying that each LEED checklist point listed was verified to meet the requirements to achieve that point. ~~The LEED AP shall provide supporting information from qualified professionals (e.g., civil engineer, electrical engineer, Title 24 consultant, commissioning agent, etc.) to certify compliance with each point on the checklist. Documentation of construction consistent with building plans calculated to achieve energy compliance is sufficient verification in lieu of post construction commissioning.~~
- (z) "Turf" means a ground cover surface of mowed grass. All of the following qualify as turf: annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and tall fescue (cool-season grasses). Bermuda grass, Kikuyu grass, Seashore Paspalum, St. Augustine grass, Zoysia grass, and Buffalo (warm-season grasses).
- (aa) "Whole House" project means the homeowner is completing a gut remodel and replacing all of the systems. A gut remodel incorporates stripping less than 90% of the walls to the studs (leaving the foundation framing and exterior finish), which enables one to replace all systems and address the thermal envelope and insulate. If a home has

removed significant framing and the exterior cladding, leaving very little of the original home, it shall apply under the new residential construction.

15.10.040 - Standards for Compliance.

~~The Town Council shall establish by resolution, and shall periodically review and update as necessary, green building standards for compliance. The standards for compliance shall include, but are not limited to, the following:~~

- ~~(a) The types of projects subject to regulation (covered projects);~~
- ~~(b) The green building rating system to be applied to the various types of projects;~~
- ~~(c) Minimum thresholds of compliance for various types of projects; and~~
- ~~(d) Timing and methods of verification of compliance with these regulations.~~

The standards for compliance are as follows:

1. New Residential Construction. New homes shall demonstrate GreenPoint Rated certification using certified professional raters. The number of Build It Green points required pursuant to this section shall be calculated in accordance with the GreenPoint Rated Single Family Checklist, with the exception that if California Building Code Title 24, Part 6 is updated after the effective date of this chapter to be more stringent, item J.5. in the GreenPoint Rated Single Family Checklist shall not be included in calculating the number of points required until such time as the appropriate cost effectiveness study has been completed.
 - A. For projects up to and including 3,000 sf. A minimum threshold of 75 Build It Green points, with GreenPoint Rated certification prior to building permit sign-off/occupancy.
 - B. For projects over 3,000 sf. A minimum threshold of 75 Build It Green points with one additional point for each ~~30-sf~~ 50 sf over 3,000 sf, and with GreenPoint Rated certification prior to building permit sign-off/occupancy.
 - C. Basement floor area. Basement floor area must be included in the total floor area for point calculations.
 - ~~D. LEED option. At the option of an applicant, the LEED for homes program may be used with a minimum threshold of silver LEED certification. Because LEED certification typically takes more time than is associated with BIG certification, the planning manager or his/her designee may as appropriate and in his/her sole discretion allow for some interim certification for occupancy prior to formal completion of the LEED process.~~

D. Solar Photovoltaic and Solar Thermal “Ready” Infrastructure. “Section 110.10 Mandatory Requirements for Solar Ready Buildings” of the California Energy Code is added as mandatory and amended to read:

- (1) Solar zone. The solar zone shall be located on the roof or overhang of the building and have a total area of no less than 500 square feet. If the project applicant determines that the entire energy needs of the project can be met with a solar photovoltaic system that occupies less than 500 square feet, the project applicant can demonstrate this with the Title 24 Calculation and solar photovoltaic system plans.
- (2) Interconnection pathways. New residential construction projects shall provide a pathway for conduit and plumbing to support the installation of future solar photovoltaic and solar thermal infrastructure. The pathway for conduit and plumbing shall be routed from the attic space (or equivalent) to the point of interconnection with the electrical service panel and the water-heating system.

E. Electric Vehicle “Ready” Infrastructure. “Section 4.106.4 Electric vehicle (EV) charging for new construction” of the California Green Building Standards Code is added as mandatory and amended with the additional requirements as outlined below.

- (1) Service panel and/or subpanel shall provide, at minimum, capacity to install a 208/240v, 50 amperes grounded AC outlet and dedicated branch circuit.
- (2) Raceway or wiring with capacity to accommodate a 100 ampere circuit; terminating in a listed cabinet box, enclosure, or NEMA receptacle.
- (3) The raceway shall be installed so that minimal removal of materials is necessary to complete the final installation.

F. Graywater “Ready” Infrastructure. Install graywater “ready” systems as outlined below. Additional plumbing piping is installed to permit the discharge from all clothes washers and all applicable fixtures from bathrooms located above grade to allow for future installation of a distributed irrigation system. All graywater “ready” systems must be installed in compliance with Chapter 16 of the California Plumbing Code.

- (1) Identify an appropriate location for future installation of a graywater treatment system, including storage tanks.
- (2) Include either a separate multiple pipe outlet or a diverter valve and an outside “stub-out” installation on clothes washing machine hook-ups, to allow separate discharge of graywater direct for irrigation.
- (3) Include a building drain(s) for lavatories, showers, and bathtubs, segregated from drains for all other plumbing fixtures, connected to the black water pipe a minimum of three (3) feet from the building foundation.

- (4) Provide power supply for future graywater treatment system.
- (5) The graywater system shall be comprised of purple piping. The diverter valve on the clothes washing machine system shall be labeled as "LAUNDRY-TO-LANDSCAPE CAPABLE."

G. Reduction of Potable Water Use on Turf. For all projects with landscapes that include the use of turf, install rainwater catchment system. Irrigation needs of turf should be calculated using the Applied Water for Turf Calculator. All rainwater catchment systems must be installed in compliance with Chapter 17 of the California Plumbing Code.

- (1) Rainwater Catchment System Size. The rainwater catchment system size shall be determined by using the Applied Water for Turf Calculator. The rainwater catchment system will need to be sized in order to satisfy 50 percent of the estimated annual water demands for the first 500 square feet of turf installed on the project. The rainwater catchment system will need to be sized in order to satisfy 100 percent of the estimated annual water demands for installed turf that is greater than 500 square feet.
- (2) Alternative. A fully installed graywater system connected to an irrigation system that can satisfy all of the annual water demands of turf as identified in the Applied Water for Turf Calculator can be used as an alternative to installing a rainwater catchment system.

2. ~~Substantial Residential construction additions and/or rebuilding remodel projects 400 square feet or greater.~~ The number of Build It Green points required pursuant to this section shall be calculated in accordance with the GreenPoint Rated Existing Home Single Family Checklist. ~~For such projects make use of the BIG GreenPoint rated program for existing homes, with the threshold being the BIG minimum for a "whole house" project of 50 points and 25 points for a smaller "elements" project, both as defined by BIG. For a "whole house project" GreenPoint rated certification using certified professional raters shall be required and for an elements project, self-certification is allowed. In all cases, new basement area would be counted as provided for above for "new construction" projects.~~

- A. For whole house projects. A minimum threshold of 50 Build It Green points, with GreenPoint Rated certification prior to building permit sign-off/occupancy.
- B. For elements projects. A minimum threshold of 25 Build It Green points, with self-certification allowed.
- C. Basement floor area. Basement floor area must be included in the total floor area for point calculations.

3. Small residential additions or remodels. For ~~such~~ small residential addition or remodel projects, which are projects less than 400 square feet, completion of the ~~BIG~~ Build It Green GreenPoint Rated Existing Home Single Family Checklist shall be

required as a working/learning document, but no minimum points are required and self-certification is permitted. ~~This would be for projects less than 400 sf in area, i.e. below the threshold for Architectural and Site Control Commission review.~~

4. ~~Institutional and Non-residential projects.~~ New, non-residential projects shall comply with all mandatory CALGreen measures. The mandatory measures shall be verified by a third party approved by the Town for which the applicant will pay for the review. ~~The threshold for institutional and non-residential projects shall be the appropriate LEED program and formal LEED certification. The minimum LEED levels shall be as follows:~~
- ~~A. For projects less than 2,000 sf the appropriate LEED or BIG checklist should be used and the points proposed verified through the self certification process.~~
 - ~~B. For new buildings between 2,000 sf and 3,000 sf LEED certification with no minimum level.~~
 - ~~C. For new buildings between 3,000 and 5,000 sf, LEED silver certification.~~
 - ~~D. For new buildings over 5,000 sf LEED gold certification.~~
- A. Electric Vehicle “Ready” Infrastructure. “Section 5.106.5.3 Electric vehicle (EV) charging for new construction” of the California Green Building Standards Code is added as mandatory and amended with the additional requirements as outlined below.
- (1) Service panel and/or subpanel shall provide, at minimum, capacity to install a 208/240v, 50 amperes grounded AC outlet and dedicated branch circuit.
 - (2) Raceway or wiring with capacity to accommodate a 100 ampere circuit; terminating in a listed cabinet box, enclosure, or NEMA receptacle.
 - (3) The raceway shall be installed so that minimal removal of materials is necessary to complete the final installation.

~~15.10.050—Incentives for Compliance.~~

- ~~(a) In addition to the required standards for compliance, the town council may, through ordinance or resolution, enact financial, permit review process, or zoning incentives and/or award or recognition programs to further encourage higher levels of green building compliance for a project.~~
- ~~(b) For residential projects, the number of GreenPoint checklist points required shall be reduced by:~~
- ~~(1) Five points for maintaining a minimum of seventy five percent of existing walls, floors, and roof of a structure;~~

- ~~(2) Five points (in addition to [subsection] (1) above) for maintaining a minimum of ninety-five percent of existing walls, floors, and roof of a structure; and/or~~
- ~~(3) Ten points (in addition to [subsections(s)] (1) and/or (2) above) when applied to a structure that is designated on the town's historic inventory or any contributing structure located within a designated historic district, subject to determination by the architectural and site control commission that such additions and/or renovations are consistent with the Secretary of the Interior's standards for rehabilitation.~~

15.10.060050 - Administrative Procedures and Implementing Regulations.

(a) The ~~town planner~~ **planning director** shall promulgate any rules and regulations necessary or appropriate to achieve compliance with the requirements of this chapter. The rules and regulations shall provide, at a minimum, for the incorporation of green building requirements of this chapter into checklist submittals with planning entitlement and building permit applications, and supporting design, construction, or development documents to demonstrate compliance with this chapter.

(b) The procedures for compliance documentation shall include, but not be limited to, the following:

- (1) Preliminary documentation. Applicants for a covered project are encouraged, but not required, to meet with the ~~compliance official~~ **planning director** or his/her ~~designated staff~~**designee**, in advance of submittal of an application, to determine required green building thresholds for compliance and to review the proposed green building program and details to achieve compliance.
- (2) Discretionary planning entitlements. Upon submittal of an application for any discretionary planning entitlement for any covered project, including, but not limited to, architectural review, site development permit, conditional use permit, or variance requests, application materials shall include the appropriate completed checklists, as required by the standards for compliance specified in Section 15.10.040, accompanied by a text description of the proposed green building program and expected measures and milestones for compliance. ~~The compliance official may allow the use of alternative checklists for historic buildings or for buildings that retain or re-use substantial portions of the existing structure.~~
- (3) Building plan check review. Upon submittal of an application for a building permit, building plans for any covered project shall include a checklist and green building program description, reflecting any changes proposed since the planning entitlement phase (if a planning entitlement was required). The checklist shall be incorporated onto a separate plan sheet included with the building plans. A qualified green building professional shall provide evidence of adequate green building compliance or documentation to the ~~compliance official~~ **planning director** or his/her **designee** to satisfy the requirements of the standards for compliance outlined in Section 15.10.040, prior to issuance of a building permit.

- (4) Final building inspection, verification, and occupancy. Prior to final building inspection and occupancy for any covered project, a qualified building professional shall provide evidence of adequate green building compliance or documentation to the ~~compliance official~~ ~~planning director or his/her designee~~ to satisfy the requirements of the standards for compliance outlined in Section 15.10.040. This information shall include, but is not limited to:
- (i) Documentation that verifies incorporation of the design and construction related credits specified in the project approval for the covered project;
 - (ii) A letter from the qualified green building professional that certifies that the covered project has been constructed in accordance with the approved green building project checklist;
 - (iii) Any additional documentation that would be required ~~by the LEED reference guide for LEED certification (if required), or~~ by the GreenPoint rated manuals for GreenPoint rated certification (if required); and
 - (iv) Any additional information that the applicant believes is relevant to determining that a good faith effort has been made to comply with this chapter.
- (5) Final determination of compliance and good faith effort to comply. Prior to the scheduling of a final building inspection for a covered project, the ~~compliance official~~ ~~planning director or his/her designee~~ shall review the documentation submitted by the applicant, and determine whether the applicant has achieved the required compliance threshold as set forth in the standards for compliance outlined in Section 15.10.040 and/or demonstrate that measures are in place to assure compliance not later than one year after approval of final building inspection. If the ~~compliance official~~ ~~planning director or his/her designee~~ determines that the applicant has met the requirements of Section 15.10.040 for the project, the final building inspection may proceed, provided the covered project has received approval of all other inspections required by the chief building official. If the ~~compliance official~~ ~~planning director or his/her designee~~ determines that the required green building rating has not been achieved, the ~~compliance official~~ ~~planning director or his/her designee~~ shall find one of the following:
- (i) Good faith effort to comply: When an applicant submits a request in writing to the ~~compliance official~~ ~~planning director or his/her designee~~ for approval of a good faith effort to comply, the ~~compliance official~~ ~~planning director or his/her designee~~ shall determine that the applicant has made a good faith effort to comply with this chapter when finding that either a) the cost for providing green building documentation or assuring compliance is disproportionate to the overall cost of the project, or b) the green building materials and technologies on the green building checklist are no longer available or not yet commercially available, or c) at least eighty percent of the required green point credits have been achieved, and measures are in place to assure full compliance not later than one year after approval of the final building inspection. Determination of a good faith effort to comply shall be made separately for each item on the green building project checklist. Granting of a good faith effort to comply for one item does not preclude the need for the applicant to comply with the other items on the green building checklist.

- (ii) Non-compliant project. If the ~~compliance official~~ planning director or his/her designee determines that the applicant has not made a good faith effort to comply with this chapter, or if the applicant fails to submit the documentation required within the required time period, then the project shall be determined to be non-compliant, and the final inspection and approval for the project shall be withheld. A final inspection shall not take place until the applicant has implemented equivalent alternate measures approved by the ~~compliance official~~ planning director or his/her designee ~~or unless an exemption is granted for the project.~~
- ~~(6) Post final inspection requirement. Not later than one year after approval of the final building inspection, the applicant or current owner shall submit to the compliance official documentation detailing compliance with the operation, efficiency, and conservation related credits from the approved checklist documentation for any covered project, if required by the compliance official. The applicant may also provide any additional information the applicant believes is relevant to determining its good faith efforts to comply with this chapter.~~
- ~~(76) Non-compliance. If, as a result of any upon inspection, the town building official or compliance officer planning director determines that the covered project does not or is unlikely to comply with the approved plans or green building checklist, a stop order shall be issued if the compliance official planning director or his/her designee determines that continuation of construction activities will jeopardize the project's ability to meet the required compliance threshold. The stop order shall remain in effect until the compliance official determines that the project will be has been brought into compliance with the approved plans and/or checklist.~~
- ~~(87) Interim compliance effort. For residential projects initiating construction not later than two years after the effective date of this chapter, a good faith effort shall be deemed to have been made when at least seventy five percent of the required minimum green points have been achieved prior to final building inspection, and adequate remaining checklist points are outlined to demonstrate that at least ninety percent of the minimum points and GreenPoint certification will be achieved not later than one year after final inspection. For purposes of this subsection "initiating construction" shall mean the date when a building permit is issued. If seventy five percent of the required minimum green points are not achieved prior to the request for final building inspection, the final inspection shall be withheld unless an exemption is granted by the compliance official. Residential projects initiating construction more than two years after the effective date of this chapter shall comply in full with the requirements of this chapter.~~
- ~~(98) Lack of inspectors. If the compliance official determines that there is a lack of third-party or town inspectors available to perform green building inspections within a timely manner, the compliance official may allow self-verification of the project and determine that green building requirements have been met.~~
- (c) The ~~compliance official~~ planning director or his/her designee shall have the responsibility to administer and monitor compliance with the green building requirements set forth in this chapter and with any rules and regulations promulgated ~~thereunder, and to grant exemptions from the requirements, where so authorized.~~

(d) Compliance with the provisions of this chapter shall be listed as a condition of approval on any architectural and site control review or other discretionary permit approval, and on the building plans for building permit approval, for any covered project.

15.10.070060- Hardship or Infeasibility Exemption.

~~(a) Exemption.~~ If an applicant for a covered project believes that circumstances exist that make it a hardship or infeasible to meet the requirements of this chapter, the applicant may request an exemption as set forth below. In applying for an exemption, the burden is on the applicant to show hardship or infeasibility.

~~(ba) Application. Any request If an applicant for a covered project believes such circumstances exist, the applicant may apply~~ for an exemption ~~must be included~~ at the time of application submittal. The applicant shall indicate the maximum threshold of compliance he or she believes is feasible for the covered project and the circumstances that he or she believes create a hardship or make it infeasible to fully comply with this chapter. Circumstances that constitute hardship or infeasibility include, but are not limited to, the following:

- (1) There is conflict with the compatibility of the green building rating system with other town goals, such as those requiring historic preservation;
- (2) There is conflict with the compatibility of the green building rating system and the California Building Standards Code;
- (3) There is conflict with the compatibility of the green building rating system and the town's zoning ordinance and/or architectural review criteria;
- (4) The green building compliance standards do not include enough green building measures that are compatible with the scope of the covered project; and/or
- (5) There is a lack of commercially available green building materials and technologies to comply with the green building rating system.

~~(eb) Review by Architectural and Site Control Commission(ASCC).~~ For any covered project for which an exemption is requested and architectural and site control review is required ~~by the ASCC~~, the ~~ASCC—Architectural and Site Control Commission~~ shall provide a recommendation to the ~~compliance official~~ planning director or his/her designee regarding whether the exemption shall be granted, ~~conditionally granted~~ or denied, along with its recommendation on the project. For any project for which an exemption is requested based on the historic character of the building or site, the town historian shall provide a recommendation to the ~~compliance official~~ planning director or his/her designee regarding whether the exemption shall be granted or denied and shall determine whether the project is consistent with the Secretary of the Interior's Standards for Historic Rehabilitation.

~~(dc) Granting of exemption~~ Decision by Planning Director (or his/her designee). ~~The If the compliance official~~ planning director or his/her designee shall make a determination ~~determines that it is a hardship or is infeasible for the applicant to fully meet the requirements of this chapter~~ based on the information provided. ~~The compliance official~~ planning director or his/her designee shall determine the maximum feasible threshold of

compliance reasonably achievable for the project. The decision of the ~~compliance official~~ **planning director or his/her designee** shall be provided to the applicant in writing.

(1) If the ~~compliance official~~ **planning director or his/her designee** determines that it is a hardship or is infeasible for the applicant to meet the requirements of this chapter, the request shall be ~~an exemption is~~ granted. Notwithstanding, the applicant shall be required to comply with this chapter in all other respects and shall be required to achieve, in accordance with this chapter, the threshold of compliance determined to be **reasonably achievable** by ~~compliance official~~ **planning director or his/her designee**.

(e2) ~~Denial of Exemption.~~ If the ~~compliance official~~ **planning director or his/her designee** determines that it is reasonably possible for the applicant to fully meet the requirements of this chapter, the request shall be denied ~~and the compliance official shall so notify the applicant in writing.~~ The project and compliance documentation shall be modified to comply with this chapter prior to further review of any pending planning or building application.

~~(f) Council Review of Exemption. For any covered project that requires review and action by the town council, the council shall act to grant or deny the exemption, based on the criteria outlined above, after recommendation by the manager.~~

15.10.08070 - Appeal.

(a) Any aggrieved applicant may appeal the determination of the ~~compliance official~~ **planning director or his/her designee** regarding: (1) the granting or denial of an exemption pursuant to Section 15.10.070; or (2) compliance with any other provision of this chapter.

(b) Any appeal must be filed in writing with the ~~planning manager~~ **planning director or his/her designee** not later than fourteen days after the date of the determination by the ~~compliance official~~ **planning director or his/her designee**. The appeal shall state the alleged error or reason for the appeal.

(c) The appeal shall be processed and considered by the ~~planning commission town council~~ **de novo in accordance with the criteria outlined in this chapter.**

demonstrated that exceeding State Building Energy Efficiency Standards as mandated by GreenPoint Rated checklist is achievable in a cost effective manner.

K. On March 10, 2010, at a publicly noticed meeting, the Town Council accepted the recommendations of the Planning Commission and Architectural and Site Control Commission subgroup for implementation of local Green Building Regulations as set forth in the March 4, 2010 report from the Deputy Town Planner.

L. On May 12, 2010, the Town Council held a duly noticed public hearing and heard testimony regarding the proposed Green Building Ordinance.

M. Because the design, restoration, construction and maintenance of buildings and structures within the Town can have a significant impact on the Town's environment, greenhouse gas emissions, resource usage, energy efficiency, waste management, and health and productivity of residents, workers, and visitors over the life of the building, requiring commercial, institutional and residential projects to incorporate green building measures is necessary and appropriate to achieve the public health and welfare benefits of green building.

2. Addition of Code. Chapter 15.10 [Green Building] is hereby added to Title 15 [Buildings and Construction] of the Portola Valley Municipal Code to read as follows:

CHAPTER 15.10 GREEN BUILDING

- 15.10.010 Purpose**
- 15.10.020 Applicability**
- 15.10.030 Definitions**
- 15.10.040 Standards for Compliance**
- 15.10.050 Incentives for Compliance**
- 15.10.060 Administrative Procedures and Implementing Regulations**
- 15.10.070 Hardship or Infeasibility Exemption**
- 15.10.080 Appeal**

15.10.010 Purpose.

The purpose of this chapter is to enhance the public health and welfare by promoting the environmental health of the town through the incorporation of green building practices in the design, construction, maintenance, operation and deconstruction of buildings and other site development. The green building provisions in this chapter are designed to achieve the following goals:

- (a) Encourage the conservation of natural resources and reduction of greenhouse gas emissions;
- (b) Increase energy efficiency and lower energy usage;
- (c) Reduce waste generated by construction projects;
- (d) Provide durable buildings that are efficient and economical to own and operate;
- (e) Recognize and conserve the energy embodied in existing buildings; and
- (e) Promote the health of residents, workers, and visitors to the town.

15.10.020 Applicability

This chapter applies to all projects defined as "covered projects," as defined in Section 15.10.030, except that it shall not apply to any project for which a planning entitlement application (except for a preliminary architectural review application) or building permit application has been submitted prior to the effective date of this chapter.

15.10.030 Definitions

The following terms shall have the ascribed definition for the purposes of applying the criteria of this chapter.

- (a) "Addition" means new construction square footage added to an existing structure.
- (b) "Applicant" means anyone that applies to the town for the applicable permits or approvals to undertake any covered project within the town, or any subsequent owner of the site.
- (c) "Compliance official" means the town planner or his/her designee.
- (d) "Compliance threshold" means the minimum number of points or rating level of a green building rating system that must be attained for a particular covered project, as outlined in the standards for compliance in Section 15.10.040.
- (e) "Covered project" means any planning entitlement application(s) or building permit application(s) for commercial new construction or renovations, or for any residential new construction or renovation subject to the standards for compliance outlined in Section 15.10.040.
- (f) "Good faith effort" means a project that has not met the required compliance threshold, but for extenuating reasons or reasons beyond the control of the applicant, the compliance official has found the project meets the good faith effort provisions of Section 15.10.060.

- (g) "Green building" means a whole systems approach to the design, construction and operation of buildings that substantially mitigates the environmental, economic, and social impacts of buildings. Green building practices recognize the relationship between the natural and built environments and seek to minimize the use of energy, water and other natural resources and provide a healthy, productive indoor environment.
- (h) "Green building project checklist" means a checklist or scorecard developed for the purpose of calculating a green building rating.
- (i) "Green building rating system" means the rating system associated with specific green building criteria and used to determine compliance thresholds, as outlined in the standards of compliance adopted by town council resolution. Examples of rating systems include, but are not limited to, the LEED and GreenPoint Rated systems.
- (j) "GreenPoint Rated" means a residential green building rating system developed by the Build It Green organization.
- (k) "GreenPoint Rated Verification" means verification of compliance by a certified GreenPoint Rater, resulting in green building certification by Build It Green.
- (l) "LEED®" means the "Leadership in Energy and Environmental Design" green building rating system developed by the U.S. Green Building Council.
- (m) "LEED®/USGBC Verification" means verification to meet the standards of the U.S. Green Building Council ("USGBC") and resulting in LEED certification of the project by the USGBC.
- (n) "Multi-family residential" means a building containing three or more attached dwelling units.
- (o) "New building" means a new structure or a substantial addition/remodel to an existing structure where the remodel combined with any additions to the structure affects 50% or more of the exterior wall plane surface or affects 50% or more of the floor area as more particularly defined in section 15.04.010 of this code.
- (p) "New construction, commercial" means the construction of a new or replacement retail, office, institutional, semi-institutional or similar building(s), or additions to such building(s).
- (q) "New construction, residential" means the construction of a new or replacement single-family or two-family dwelling unit or of new or replacement multi-family residential building(s), or additions to such building(s).
- (r) "Qualified green building professional" means a person trained through the USGBC as a LEED accredited professional or through Build It Green as a certified green

building professional, or similar qualifications if acceptable to the compliance official. For projects requiring "self-verification," the project architect or designer is considered a qualified green building professional.

(s) "Renovation" means any rehabilitation, repair, remodeling, change, or modification to an existing building, where changes to floor area and the footprint of the building are negligible. The valuation of renovation improvements shall be determined by the town planner, upon recommendation of the chief building official. The chief building official may exclude from such valuation the cost of (a) seismic upgrades, (b) accessibility upgrades, or (c) photovoltaic panels or other solar energy or similar devices exterior to the building. Renovation valuation thresholds identified in the standards for compliance shall be adjusted annually to reflect changes in the town's valuation per square foot for new construction in town, using valuations in effect as of July 1, 2008, as the base index.

(t) "Self verification" means verification by the project architect, designer or a qualified green building professional certifying that the project has met the standards and has attained the compliance threshold as indicated for the covered project type as set forth in the standards for compliance outlined in Section 15.10.040.

(u) "Single-family or two-family residential" means a single detached dwelling unit or two units in a single building or two separate buildings on a single parcel, such as a main residence and second unit.

(v) "Square footage" means all new and replacement square footage, including basement areas (seven feet or greater in height) and garages, except that unconditioned garage space shall only count as 50% of that square footage. Areas demolished shall not be deducted from the total new construction square footage.

(w) "Threshold verification by LEED AP" means verification by a LEED accredited professional certifying that each LEED checklist point listed was verified to meet the requirements to achieve that point. The LEED AP shall provide supporting information from qualified professionals (e.g. civil engineer, electrical engineer, Title 24 consultant, commissioning agent, etc.) to certify compliance with each point on the checklist. Documentation of construction consistent with building plans calculated to achieve energy compliance is sufficient verification in lieu of post-construction commissioning.

15.10.040 Standards for Compliance.

The town council shall establish by resolution, and shall periodically review and update as necessary, green building standards for compliance. The standards for compliance shall include, but are not limited to, the following:

- (a) The types of projects subject to regulation (covered projects);
- (b) The green building rating system to be applied to the various types of projects;
- (c) Minimum thresholds of compliance for various types of projects; and
- (d) Timing and methods of verification of compliance with these regulations.

The standards for compliance shall be approved after recommendation from the town planner, who shall refer the standards for recommendation by the architectural and site control commission, prior to council action.

15.10.050 Incentives for Compliance.

(a) In addition to the required standards for compliance, the town council may, through ordinance or resolution, enact financial, permit review process, or zoning incentives and/or award or recognition programs to further encourage higher levels of green building compliance for a project.

(b) For residential projects, the number of GreenPoint checklist points required shall be reduced by:

(1) Five points for maintaining a minimum of 75% of existing walls, floors, and roof of a structure;

(2) Five points (in addition to (1) above) for maintaining a minimum of 95% of existing walls, floors, and roof of a structure; and/or

(3) Ten points (in addition to (1) and/or (2) above) when applied to a structure that is designated on the town's historic inventory or any contributing structure located within a designated historic district, subject to determination by the architectural and site control commission that such additions and/or renovations are consistent with the Secretary of the Interior's Standards for Rehabilitation.

15.10.060 Administrative Procedures and Implementing Regulations.

(a) The town planner shall promulgate any rules and regulations necessary or appropriate to achieve compliance with the requirements of this chapter. The rules and regulations shall provide, at a minimum, for the incorporation of green building requirements of this chapter into checklist submittals with planning entitlement and building permit applications, and supporting design, construction, or development documents to demonstrate compliance with this chapter.

(b) The procedures for compliance documentation shall include, but not be limited to, the following:

(1) Preliminary documentation. Applicants for a covered project are encouraged, but not required, to meet with the compliance official or his/her designated staff, in advance of submittal of an application, to determine required green building thresholds for compliance and to review the proposed green building program and details to achieve compliance.

(2) Discretionary planning entitlements. Upon submittal of an application for any discretionary planning entitlement for any covered project, including, but not limited to, architectural review, site development permit, conditional use permit, or variance requests, application materials shall include the appropriate completed checklists, as required by the standards for compliance specified in Section 15.10.040, accompanied by a text description of the proposed green building program and expected measures and milestones for compliance. The compliance official may allow the use of alternative checklists for historic buildings or for buildings that retain or re-use substantial portions of the existing structure.

(3) Building plan check review. Upon submittal of an application for a building permit, building plans for any covered project shall include a checklist and green building program description, reflecting any changes proposed since the planning entitlement phase (if a planning entitlement was required). The checklist shall be incorporated onto a separate plan sheet included with the building plans. A qualified green building professional shall provide evidence of adequate green building compliance or documentation to the compliance official to satisfy the requirements of the standards for compliance outlined in Section 15.10.040, prior to issuance of a building permit.

(4) Final building inspection, verification, and occupancy. Prior to final building inspection and occupancy for any covered project, a qualified building professional shall provide evidence of adequate green building compliance or documentation to the compliance official to satisfy the requirements of the standards for compliance outlined in Section 15.10.040. This information shall include, but is not limited to:

i. Documentation that verifies incorporation of the design and construction related credits specified in the project approval for the covered project;

ii. A letter from the qualified green building professional that certifies that the covered project has been constructed in accordance with the approved green building project checklist;

iii. Any additional documentation that would be required by the LEED reference guide for LEED certification (if required), or by the GreenPoint Rated manuals for GreenPoint Rated certification (if required); and

iv. Any additional information that the applicant believes is relevant to determining that a good faith effort has been made to comply with this chapter.

(5) Final determination of compliance and good faith effort to comply. Prior to the scheduling of a final building inspection for a covered project, the compliance official shall review the documentation submitted by the applicant, and determine whether the applicant has achieved the required compliance threshold as set forth in the standards for compliance outlined in Section 15.10.040 and/or demonstrate that measures are in place to assure compliance not later than one year after approval of final building inspection. If the compliance official determines that the applicant has met the requirements of Section 15.10.040 for the project, the final building inspection may proceed, provided the covered project has received approval of all other inspections required by the chief building official. If the compliance official determines that the required green building rating has not been achieved, the compliance official shall find one of the following:

i. Good faith effort to comply: When an applicant submits a request in writing to the compliance official for approval of a good faith effort to comply, the compliance official shall determine that the applicant has made a good faith effort to comply with this chapter when finding that either a) the cost for providing green building documentation or assuring compliance is disproportionate to the overall cost of the project, or b) the green building materials and technologies on the green building checklist are no longer available or not yet commercially available, or c) at least 80% of the required green point credits have been achieved, and measures are in place to assure full compliance not later than one year after approval of the final building inspection. Determination of a good faith effort to comply shall be made separately for each item on the green building project checklist. Granting of a good faith effort to comply for one item does not preclude the need for the applicant to comply with the other items on the green building checklist.

ii. Non-compliant project. If the compliance official determines that the applicant has not made a good faith effort to comply with this chapter, or if the applicant fails to submit the documentation required within the required time period, then the project shall be determined to be non-compliant, and the final inspection and approval for the project shall be withheld. A final inspection shall not take place until the applicant has implemented equivalent alternate measures approved by the compliance official or unless an exemption is granted for the project.

(6) Post final inspection requirement. Not later than one year after approval of the final building inspection, the applicant or current owner shall submit to the

compliance official documentation detailing compliance with the operation, efficiency, and conservation related credits from the approved checklist documentation for any covered project, if required by the compliance official. The applicant may also provide any additional information the applicant believes is relevant to determining its good faith efforts to comply with this chapter.

(7) Non-compliance. If, as a result of any inspection, the town determines that the covered project does not or is unlikely to comply with the approved plans or green building checklist, a stop order shall be issued if the compliance official determines that continuation of construction activities will jeopardize the project's ability to meet the required compliance threshold. The stop order shall remain in effect until the compliance official determines that the project will be brought into compliance with the approved plans and/or checklist.

(8) Interim compliance effort. For residential projects initiating construction not later than two years after the effective date of this chapter, a good faith effort shall be deemed to have been made when at least 75% of the required minimum green points have been achieved prior to final building inspection, and adequate remaining checklist points are outlined to demonstrate that at least 90% of the minimum points and GreenPoint certification will be achieved not later than one year after final inspection. For purposes of this subsection "initiating construction" shall mean the date when a building permit is issued. If 75% of the required minimum green points are not achieved prior to the request for final building inspection, the final inspection shall be withheld unless an exemption is granted by the compliance official. Residential projects initiating construction more than two years after the effective date of this chapter shall comply in full with the requirements of this chapter.

(9) Lack of inspectors. If the compliance official determines that there is a lack of third party or town inspectors available to perform green building inspections within a timely manner, the compliance official may allow self-verification of the project and determine that green building requirements have been met.

(c) The compliance official shall have the responsibility to administer and monitor compliance with the green building requirements set forth in this chapter and with any rules and regulations promulgated thereunder, and to grant exemptions from the requirements, where so authorized.

(d) Compliance with the provisions of this chapter shall be listed as a condition of approval on any architectural and site control review or other discretionary permit approval, and on the building plans for building permit approval, for any covered project.

15.10.070 Hardship or Infeasibility Exemption.

(a) Exemption. If an applicant for a covered project believes that circumstances exist that make it a hardship or infeasible to meet the requirements of this chapter, the applicant may request an exemption as set forth below. In applying for an exemption, the burden is on the applicant to show hardship or infeasibility.

(b) Application. If an applicant for a covered project believes such circumstances exist, the applicant may apply for an exemption at the time of application submittal. The applicant shall indicate the maximum threshold of compliance he or she believes is feasible for the covered project and the circumstances that he or she believes create a hardship or make it infeasible to fully comply with this chapter. Circumstances that constitute hardship or infeasibility include, but are not limited to the following:

(1) There is conflict with the compatibility of the green building rating system with other town goals, such as those requiring historic preservation;

(2) There is conflict with the compatibility of the green building rating system and the California Building Standards Code;

(3) There is conflict with the compatibility of the green building rating system and the town's zoning ordinance and/or architectural review criteria;

(4) The green building compliance standards do not include enough green building measures that are compatible with the scope of the covered project; and/or

(5) There is a lack of commercially available green building materials and technologies to comply with the green building rating system.

(c) Review by Architectural & Site Control Commission (ASCC). For any covered project for which an exemption is requested and architectural and site control review is required by the ASCC, the ASCC shall provide a recommendation to the compliance official regarding whether the exemption shall be granted or denied, along with its recommendation on the project. For any project for which an exemption is requested based on the historic character of the building or site, the town historian shall provide a recommendation to the compliance official regarding whether the exemption shall be granted or denied and shall determine whether the project is consistent with the Secretary of the Interior's Standards for Historic Rehabilitation.

(d) Granting of Exemption. If the compliance official determines that it is a hardship or is infeasible for the applicant to fully meet the requirements of this chapter based on the information provided, the compliance official shall determine the maximum feasible threshold of compliance reasonably achievable for the project. The decision of the compliance official shall be provided to the applicant in writing. If an exemption is granted, the applicant shall be required to comply with this chapter in all other respects

and shall be required to achieve, in accordance with this chapter, the threshold of compliance determined to be achievable by the compliance official.

(e) Denial of Exemption. If the compliance official determines that it is reasonably possible for the applicant to fully meet the requirements of this chapter, the request shall be denied and the compliance official shall so notify the applicant in writing. The project and compliance documentation shall be modified to comply with this chapter prior to further review of any pending planning or building application.

(f) Council Review of Exemption. For any covered project that requires review and action by the town council, the council shall act to grant or deny the exemption, based on the criteria outlined above, after recommendation by the manager.

15.10.080 Appeal.

(a) Any aggrieved applicant may appeal the determination of the compliance official regarding: (1) the granting or denial of an exemption pursuant to section 15.10.070; or (2) compliance with any other provision of this chapter.

(b) Any appeal must be filed in writing with the planning manager not later than fourteen days after the date of the determination by the compliance official. The appeal shall state the alleged error or reason for the appeal.

(c) The appeal shall be processed and considered by the town council.

3. Environmental Review. This ordinance is exempt from the California Environmental Quality Act pursuant to Section 15309 because it is an action taken by a regulatory agency for the protection of the environment.

4. Effective Date; Posting. This ordinance shall become effective thirty (30) days after the date of its adoption and shall be posted within the Town of Portola Valley in three (3) public places.

INTRODUCED:

PASSED:

AYES:

NOES:

ABSTENTIONS:

ABSENT:

RESOLUTION NO. 2490 -2010

**A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF
PORTOLA VALLEY ADOPTING GREEN BUILDING STANDARDS FOR
COMPLIANCE**

WHEREAS, the Town Council of the Town of Portola Valley adopted Ordinance No. 2010-_____ adding Chapter 15.10 [Green Building] to Title 15 [Buildings and Construction] of the Portola Valley Municipal Code; and

WHEREAS, Section 15.10.040 requires the Town Council to establish by resolution, green building standards for compliance;

WHEREAS, the Town Council received and reviewed the recommendations of the Planning Commission and the Architectural & Site Control Commission subgroup regarding green building standards.

NOW THEREFORE, The Town Council of the Town of Portola Valley does hereby **RESOLVE** as follows:

The Town adopts the following green building standards for compliance:

1. New residential construction. New homes shall demonstrate GreenPoint rated certification using certified professional raters.
 - A. For projects up to and including 3,000 sf. A minimum threshold of 75 BIG points, with GreenPoint rated certification prior to building permit sign-off/occupancy.
 - B. For projects over 3,000 sf. A minimum threshold of 75 BIG points with one additional point for each 30 sf over 3,000 sf, and with GreenPoint rated certification prior to building permit sign-off/occupancy.
 - C. Basement floor area. Basement floor area must be included in the total floor area for point calculations.
 - D. LEED option. At the option of an applicant, the LEED for homes program may be used with a minimum threshold of silver LEED certification. Because LEED certification typically takes more time than is associated with BIG certification, the planning manager or his/her designee may as appropriate and in his/her sole discretion allow for some interim certification for occupancy prior to formal completion of the LEED process.
2. Substantial residential additions and/or rebuilding. For such projects make use of the BIG GreenPoint rated program for existing homes, with the threshold being the BIG minimum for a "whole house" project of 50 points and 25 points for a smaller "elements" project, both as defined by BIG. For a "whole house project" GreenPoint rated certification using certified professional raters shall be required and for an elements

project, self-certification is allowed. In all cases, new basement area would be counted as provided for above for "new construction" projects.

- 3. Small residential additions or remodels. For such projects completion of the BIG existing home checklist shall be required as a working/learning document, but no minimum points are required and self-certification is permitted. This would be for projects less than 400 sf in area, i.e. below the threshold for Architectural and Site Control Commission review.
- 4. Institutional and non-residential projects. The threshold for institutional and non-residential projects shall be the appropriate LEED program and formal LEED certification. The minimum LEED levels shall be as follows:
 - A. For projects less than 2,000 sf the appropriate LEED or BIG checklist should be used and the points proposed verified though the self-certification process.
 - B. For new buildings between 2,000 sf and 3,000 sf LEED certification with no minimum level.
 - C. For new buildings between 3,000 and 5,000 sf, LEED silver certification.
 - D. For new buildings over 5,000 sf LEED gold certification.

PASSED AND ADOPTED this ____ day of _____, 2010.

By: _____
Mayor

ATTEST:

Town Clerk



NEW HOME RATING SYSTEM, VERSION 7.0 DRAFT
SINGLE FAMILY CHECKLIST

The GreenPoint Rated checklist tracks green features incorporated into the home. GreenPoint Rated is administered by Build It Green, a non-profit whose mission is to promote healthy, energy and resource efficient buildings in California.

The minimum requirements of GreenPoint Rated are: verification of 50 or more points; Earn the following minimum points per category: Community (2), Energy (25), Indoor Air Quality/Health (6), Resources (6), and Water (6); and meet the prerequisites CALGreen Mandatory, H6.1, J5.1, O1, O7.

The criteria for the green building practices listed below are described in the GreenPoint Rated Single Family Rating Manual. For more information please visit www.builditgreen.org/greenpointrated
 Build It Green is not a code enforcement agency.

Points Achieved: **0**

Certification Level: **None**

POINTS REQUIRED



■ Minimum Points
 ■ Achieved Points

A home is only GreenPoint Rated if all features are verified by a Certified GreenPoint Rater through Build It Green.

Single Family New Version 7 DRAFT

PROJECT NAME		Points Achieved	Possible Points					Status	NOTES
MEASURES			Community	Energy	IAQ/Health	Resources	Water		
CALGreen									
TBD	CALGreen Res (REQUIRED)	0	1	1	1	1	Revised	Updated with 2016 CALGreen. Minor changes.	
A. SITE									
TBD	A1. Construction Footprint				1				
A2. Job Site Construction Waste Diversion									
TBD	A2.1 75% C&D Waste Diversion(Including Alternative Daily Cover)				2		Revised	Increase threshold to 75% to exceed CALGreen, which is 65%.	
TBD	A2.2 65% C&D Waste Diversion (Excluding Alternative Daily Cover)				2				
TBD	A2.3 Recycling Rates from Third-Party Verified Mixed-Use Waste Facility				1		Revised	Add criteria that report from facility must be within the timeframe of submission.	
TBD	A3. Recycled Content Base Material				1				
TBD	A4. Heat Island Effect Reduction (Non-Roof)		1						
TBD	A5. Construction Environmental Quality Management Plan Including Flush-Out			1					
A6. Stormwater Control: Prescriptive Path									
TBD	A6.1 Permeable Paving Material					1			
TBD	A6.2 Filtration and/or Bio-Retention Features					1			
TBD	A6.3 Non-Leaching Roofing Materials					1			
TBD	A6.4 Smart Stormwater Street Design		1						
TBD	A7. Stormwater Control: Performance Path					3	Revised	Update criteria for qualification with design storm.	
B. FOUNDATION									
TBD	B1. Fly Ash and/or Slag in Concrete				1				
TBD	B2. Radon-Resistant Construction			2				Add n/a as an option to accommodate compliance with EPA IAP when measure does not apply.	
TBD	B3. Foundation Drainage System				2				
TBD	B4. Moisture Controlled Crawlspace			1				Add n/a as an option to accommodate compliance with EPA IAP when measure does not apply.	
B5. Structural Pest Controls									
TBD	B5.1 Termite Shields and Separated Exterior Wood-to-Concrete Connections				1				
TBD	B5.2 Plant Trunks, Bases, or Stems at Least 36 Inches from the Foundation				1			Provide clarification that this measure applies to planters on podiums with modified criteria.	
C. LANDSCAPE									
Enter the landscape area percentage									
TBD	C1. Plants Grouped by Water Needs (Hydrozoning)					1			
TBD	C2. Three Inches of Mulch in Planting Beds					1			
C3. Resource Efficient Landscapes									
TBD	C3.1 No Invasive Species Listed by Cal-IPC				1				
TBD	C3.2 Plants Chosen and Located to Grow to Natural Size				1				
TBD	C3.3 Drought Tolerant, California Native, Mediterranean Species, or Other Appropriate Species					3			
C4. Minimal Turf in Landscape									
TBD	C4.1 No Turf on Slopes Exceeding 10% and No Overhead Sprinklers Installed in Areas Less Than Eight Feet Wide					2			
TBD	C4.2 Turf on a Small Percentage of Landscaped Area					2			
TBD	C5. Trees to Moderate Building Temperature						Revised	Move 1 point to IAQ/ Health. Trees should be climatically appropriate to encourage survival.	
TBD	C6. High-Efficiency Irrigation System		1	1		1			
TBD	C7. One Inch of Compost in the Top Six to Twelve Inches of Soil					2			

Single Family New Version 7 DRAFT

TBD	C8. Rainwater Harvesting System				2	Revised	Revise criteria to use water for indoor water use to supply toilets.
TBD	C9. Recycled Wastewater Irrigation System				1	Revised	Update criteria to limit application based on availability of recycled water.
TBD	C10. Submeter or Dedicated Meter for Landscape Irrigation				2		
TBD	C11. Landscape Meets Water Budget				2	Revised	Include 0.50, which is more stringent than the MWEL0 ordinance of 0.55 ETAF. Maintain prerequisites. Reduced points to 1 point.
D. STRUCTURAL FRAME AND BUILDING ENVELOPE							
D1. Optimal Value Engineering							
TBD	D1.1 Joists, Rafter, and Studs at 24 Inches on Center			1	2		
TBD	D1.2 Non-Load Bearing Door and Window Headers Sized for Load				1		
TBD	D1.3 Advanced Framing Measures				2		
TBD	D2. Construction Material Efficiencies				1		
D3. Engineered Lumber							
TBD	D3.1 Engineered Beams and Headers				1		
TBD	D3.2 Wood I-Joists or Web Trusses for Floors				1		
TBD	D3.3 Engineered Lumber for Roof Rafters				1		
TBD	D3.4 Engineered or Finger-Jointed Studs for Vertical Applications				1		
TBD	D3.5 OSB for Subfloor				0.5		
TBD	D3.6 OSB for Wall and Roof Sheathing				0.5		
TBD	D4. Insulated Headers			1			
D5. FSC-Certified Wood							
TBD	D5.1 Dimensional Lumber, Studs, and Timber				6		
TBD	D5.2 Panel Products				3		
D6. Solid Wall Systems							
TBD	D6.1 At Least 90% of Floors				1		
TBD	D6.2 At Least 90% of Exterior Walls			1	1		
TBD	D6.3 At Least 90% of Roofs			1	1		
TBD	D7. Energy Heels on Roof Trusses			1			
TBD	D8. Overhangs and Gutters			1	1		
D9. Reduced Pollution Entering the Home from the Garage							
TBD	D9.1 Detached Garage				2		
TBD	D9.2 Mitigation Strategies for Attached Garage				1		
D10. Structural Pest and Rot Controls							
TBD	D10.1 All Wood Located At Least 12 Inches Above the Soil				1		
TBD	D10.2 Wood Framing Treated With Borates or Factory-Impregnated, or Wall Materials Other Than Wood				1		
TBD	D11. Moisture-Resistant Materials in Wet Areas (such as Kitchen, Bathrooms, Utility Rooms, and Basements)			1	1		
E. EXTERIOR							
TBD	E1. Environmentally Preferable Decking				1	Revised	Criteria clarifies that measure does not apply to patios.
TBD	E2. Flashing Installation Third-Party Verified				2		
TBD	E3. Rain Screen Wall System				2		
TBD	E4. Durable and Non-Combustible Cladding Materials				1		
E5. Durable Roofing Materials							
TBD	E5.1 Durable and Fire Resistant Roofing Materials or Assembly				1		
TBD	E6. Vegetated Roof	2	2				
F. INSULATION							
F1. Insulation with 30% Post-Consumer or 60% Post-Industrial Recycled Content							
TBD	F1.1 Walls and Floors				1		
TBD	F1.2 Ceilings				1		
F2. Insulation that Meets the CDPH Standard Method—Residential for Low Emissions							
TBD	F2.1 Walls and Floors			1			
TBD	F2.2 Ceilings			1			
F3. Insulation That Does Not Contain Fire Retardants							
TBD	F3.1 Cavity Walls and Floors			1			
TBD	F3.2 Ceilings			1			
TBD	F3.3 Interior and Exterior			1			
G. PLUMBING							
G1. Efficient Distribution of Domestic Hot Water							
TBD	G1.1 Insulated Hot Water Pipes			1			
TBD	G1.2 WaterSense Volume Limit for Hot Water Distribution				1		
TBD	G1.3 Increased Efficiency in Hot Water Distribution				2		
G2. Install Water-Efficient Fixtures							

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TBD	G2.1 WaterSense Showerheads 1.8gpm with Matching Compensation Valve						2	Revised	Changed threshold 1.8gpm or less flow rate.	
TBD	G2.2 WaterSense Bathroom Faucets 1.0 gpm						1	Revised	Changed threshold to to 1.0gpm.	
TBD	G2.3 WaterSense Toilets									
	G2.3.1. WaterSense Toilets- 1.28 gpf with a Maximum Performance (MaP) Threshold of No Less Than 500 Grams						1			
	G2.3.2. WaterSense Toilets- 1.1 gpf with a Maximum Performance (MaP) Threshold of No Less Than 500 Grams						1	New	Add new measure for lower flow toilets that are still high performing.	
TBD	G3. Pre-Plumbing for Graywater System						1			
TBD	G4. Operational Graywater System						3	Revised	Allow for indoor and outdoor. Focus on outdoor water use.	
	G6. Thermostatic Shower valve or tubspout						1	New	Add thermostatic shower valve and/or anto-diversion tub spout with TSV.	
H. HEATING, VENTILATION, AND AIR CONDITIONING										
	H1. Sealed Combustion Units									
TBD	H1.1 Sealed Combustion Furnace						1			
TBD	H1.2 Sealed Combustion Water Heater						2			
TBD	H2. High Performing Zoned Hydronic Radiant Heating System					1	1			
	H3. Effective Ductwork									
TBD	H3.1 Duct Mastic on Duct Joints and Seams					1				
TBD	H3.2 Pressure Balance the Ductwork System					1				
TBD	H4. ENERGY STAR® Bathroom Fans Per HVI Standards with Air Flow Verified						1			
	H5. Advanced Practices for Cooling									
TBD	H5.1 ENERGY STAR Ceiling Fans in Living Areas and Bedrooms					1				
	H6. Whole House Mechanical Ventilation Practices to Improve Indoor Air Quality									
TBD	H6.1 Meet ASHRAE 62.2-2016 Ventilation Residential Standards	N	R	R	R	R	R	Revised	Updated to 2016 standard.	
TBD	H6.2 Advanced Ventilation Standards						1	Revised	Revised to included outdoor air ducted to Bedroom and Living Areas. Includes requirements for filter and efficiency.	
TBD	H6.3 Outdoor Air Ducted to Bedroom and Living Areas						2	Deleted	Accounted for in Advanced Ventilation Standards.	
	H7. Effective Range Hood Design and Installation									
TBD	H7.1 Effective Range Hood Ducting and Design						1			
TBD	H7.2 Automatic Range Hood Control						1			
TBD	H8. High Efficiency HVAC Filter (MERV 13+)						1	Revised	MERV 13 filter with static pressure test to meet manufacturers listing. Supply resident with 4 extra for change out.	
TBD	H9 Low Global Warming Potential Refrigerants						1	New	Provide credit for CO2 refrigerants that have a low GWP. This will also be accounted for in climate calculator.	
TBD	H10. No Fireplace or Sealed Gas Fireplace						1			
TBD	H11. Humidity Control Systems						1			
TBD	H12. Register Design Per ACCA Manual T					1				
I. RENEWABLE ENERGY										
TBD	I1. Pre-Plumbing for Solar Water Heating						1			
TBD	I2. Preparation for Future Photovoltaic Installation						1	Revised	Update to reflect 2016 Code and best practices for panel and breaker capacity and fall arrest anchors.	
	I3. Onsite Renewable Generation (Solar PV, Solar Thermal, and Wind)						25			
	I4. Net Zero Energy Home									
TBD	I4.1 Near Zero Energy Home						2			
TBD	I4.2 Net Zero Electric						4			
TBD	I7. Energy Storage System						1	2	New	Install energy storage system to address loads to support loads when PV production is not available.
J. BUILDING PERFORMANCE AND TESTING										
TBD	J1. Third-Party Verification of Quality of Insulation Installation						1			
TBD	J2. Supply and Return Air Flow Testing					1	1			
TBD	J3. Mechanical Ventilation Testing						1	Revised	Removed low leakage requirement	
TBD	J4. Combustion Appliance Safety Testing						1			
	J5. Building Energy Performance									
0.00%	J5.1 Home Meets or Exceeds Energy Compliance Pathway	0				60		Revised	Update threshold and pathways to reflect 2016 code, all electric pathway, Whole ebuilding energy reduction pathway and Energy Design Rating.	
TBD	J6. Title 24 Prepared and Signed by a CABEC Certified Energy Analyst						1			
TBD	J7. Participation in Utility Program with Third-Party Plan Review						1			
	J8. ENERGY STAR for Homes						1			
No	J9. EPA Indoor airPlus Certification	0					1	Revised	For all IAP measures included in the checklist n/a will be included as an option.	
TBD	J10. Blower Door Testing						2	Revised	Adding 3rd tier for 1.5 for unbalanced and 0.6 for balanced.	

Single Family New Version 7 DRAFT

K. FINISHES						
	K1. Entryways Designed to Reduce Tracked-In Contaminants					
TBD	K1.1 Individual Entryways			1		
TBD	K2. Zero-VOC Interior Wall and Ceiling Paints					
TBD	K3. Low-VOC Caulks and Adhesives					
	K4. Environmentally Preferable Materials for Interior Finish					
TBD	K4.1 Cabinets				2	
TBD	K4.2 Interior Trim				2	
TBD	K4.3 Shelving				2	
TBD	K4.4 Doors				2	
TBD	K4.5 Countertops				1	
	K5. Formaldehyde Emissions in Interior Finish Exceed CARB					
TBD	K5.1 Doors			1		
TBD	K5.2 Cabinets and Countertops			2		
TBD	K5.3 Interior Trim and Shelving			2		
TBD	K6. Products That Comply With the Health Product Declaration Open Standard					
TBD	K7. Indoor Air Formaldehyde Level Less Than 27 Parts Per Billion					
No	K8. Comprehensive Inclusion of Low Emitting Finishes					
		0		1		
L. FLOORING						
TBD	L1. Environmentally Preferable Flooring					
TBD	L2. Low-Emitting Flooring Meets CDPH 2010 Standard Method—Residential					
TBD	L3. Durable Flooring					
TBD	L4. Thermal Mass Flooring					
			1			
M. APPLIANCES AND LIGHTING						
TBD	M1. ENERGY STAR® Dishwasher					
	M2. Laundry Appliances					
TBD	M2.1 CEE-Rated Clothes Washer					
TBD	M2.2 Energy Star Dryer					
TBD	M2.3 Solar Dryer					
TBD	M3. Size-Efficient ENERGY STAR Refrigerator					
	M4. Permanent Centers for Waste Reduction Strategies					
TBD	M4.1 Built-In Recycling Center					
TBD	M4.2 Built-In Composting Center					
	M5. Lighting Efficiency					
TBD	M5.1 High-Efficacy Lighting					
TBD	M5.2 Lighting System Designed to IESNA Footcandle Standards or Designed by Lighting Consultant					
	M6. Electric Vehicle Charging Stations and Infrastructure					
			1			New Fully installed circuit for single family .
N. COMMUNITY						
	N1. Smart Development					
TBD	N1.1 Infill Site					
TBD	N1.2 Designated Brownfield Site					
TBD	N1.3 Conserve Resources by Increasing Density					
TBD	N1.4 Cluster Homes for Land Preservation					
	N1.5 Home Size Efficiency					
	Enter the area of the home, in square feet					
	Enter the number of bedrooms					
	N2. Home(s)/Development Located Near Transit					
TBD	Within 1/2 Mile of a Major Transit Stop					
TBD	Within 1 mile of a Major Transit Stop					
	N3. Pedestrian and Bicycle Access					
	N3.1 Pedestrian Access to Services Within 1/2 Mile of Community Services					
	Enter the number of Tier 1 services					
	Enter the number of Tier 2 services					
TBD	N3.2 Connection to Pedestrian Pathways					
TBD	N3.3 Traffic Calming Strategies					
	N4. Outdoor Gathering Places					
TBD	N4.1 Public or Semi-Public Outdoor Gathering Places for Residents					
TBD	N4.2 Public Outdoor Gathering Places with Direct Access to Tier 1 Community Services					
	N5. Social Interaction					
TBD	N5.1 Residence Entries with Views to Callers					
TBD	N5.2 Entrances Visible from Street and/or Other Front Doors					
TBD	N5.3 Porches Oriented to Street and Public Space					
	N6. Passive Solar Design					
TBD	N6.1 Heating Load					
TBD	N6.2 Cooling Load					
	N7. Adaptable Building					
TBD	N7.1 Universal Design Principles in Units					
TBD	N7.2 Full-Function Independent Rental Unit					
	N8. Resiliency					

Single Family New Version 7 DRAFT

TBD	N8.1 Assessment		1		1	1			New	Complete assessment protocol to evaluate vulnerability to climate change impacts.
TBD	N8.2 Strategies to Address Assessment Findings		1		1	1			New	Implement strategies that address findings from assessment to improve durability and resiliency of buildings.
TBD	N9. Social Equity		1						New	Based on community engagement outreach efforts, implement community services or workforce development to support local community.
O. OTHER										
TBD	O1. GreenPoint Rated Checklist in Blueprints	N	R	R	R	R	R			
TBD	O2. Pre-Construction Kickoff Meeting with Rater and Subcontractors			0.5		1	0.5			
TBD	O3. Orientation and Training to Occupants—Conduct Educational Walkthroughs			0.5	0.5	0.5	0.5			
TBD	O4. Builder's or Developer's Management Staff are Certified Green Building Professionals			0.5	0.5	0.5	0.5			
	O5. Home System Monitors							1		
TBD	O5.1 Energy Home System Monitors			1					Revised	Separate out energy and water.
TBD	O5.2. Water Home System Monitors			1					Revised	Separate out energy and water.
	O6. Green Building Education									
TBD	O6.1 Marketing Green Building		2							
TBD	O6.2 Green Building Signage			0.5				0.5		
TBD	O7. Green Appraisal Addendum	N	R	R	R	R	R			
TBD	O8. Detailed Durability Plan and Third-Party Verification of Plan Implementation					1				
Summary										
Total Available Points in Specific Categories		357.5	29	136.5	57	86	49			
Minimum Points Required in Specific Categories		50	2	25	6	6	6			
Total Points Achieved		0.0	0.0	0.0	0.0	0.0	0.0			



Executive Summary

Proposed Updates to GreenPoint Rated Version 7.0

New Single Family and Multifamily Programs

Introduction

With more than 43,000 certified units, GreenPoint Rated has emerged as the most trusted home rating system in California. Now that California has updated California Codes and Regulations and Building Energy Efficiency Standards (Title 24, Part 6) with stronger minimum standards, GreenPoint Rated is being updated in tandem. With Version 7.0, GreenPoint Rated will continue to reflect the leading edge of green building practices and certify buildings that go above and beyond CALGreen code.

As California sets its sights on net zero energy and low carbon homes, GreenPoint Rated provides a pathway for the market to achieve these goals. Public comment from a diversity of stakeholders is critical to ensuring the success of Version 7.0. This Executive Summary provides an overview of the changes and updates to help commenters more easily review the materials. Public comment will take place September 14–29. Version 7.0 will be finalized and released in October 2016, and will go into effect on Jan. 1, 2017, in conjunction with the updated state codes.

Version 7.0 presents the opportunity to add new measures to support our low carbon goals for building in California, as well as respond to climate change issues. Overall, Version 7.0 represents minor updates that build upon the significant update completed for Version 6.0. Updates include revised measures and energy compliance pathways to align with the 2016 California Code of Regulations (California Building Code), which will be effective January 1, 2017.

While the Existing Home Rating Systems for both single family and multifamily need to be updated, this update process is focused on the New Home Rating Systems. Comments are welcome on all rating systems, but the existing home systems will undergo a separate review process at a later date.

Program Checklists

The current checklists, GreenPoint Rated New Home Single Family (NHSF) and New Home Multifamily (NHMF) Version 6.1, are appropriate for projects permitted under the 2013 California Building Code.

This update process will result in the New Home Rating Systems advancing to Version 7.0. A project permitted under the 2016 Code will use the New Home Single Family Version 7.0 or New Home Multifamily Version 7.0 system.

The update process reviews measures on the checklists, current trends, future codes, and input from the public sector, building professionals, and selected stakeholder groups. This analysis has resulted in the following revisions to the program:

- Deleting measures that have become code-required
- Addressing CALGreen mandatory measures
- Adding new measures for current best practices
- Improving and clarifying definitions of current measures
- Clarifying criteria for qualification of current measures

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The entire update process includes extensive stakeholder outreach and input from subject matter experts, as well as public comment periods. The process consists of two public comment periods of the proposed Version 7.0 GreenPoint Rated program for the New Home rating systems only. Build It Green has completed an annotated draft checklist for both single family and multifamily new homes rating systems to correspond with the 2016 California Green Building and Energy Efficiency Standards.

This second comment period includes the draft version 7.0 checklist for both Single Family and Multifamily New Homes and the summary of the new measures.

GreenPoint Rated Proposed Design Changes

- **Energy evaluation.** GreenPoint Rated establishes the energy performance threshold based on a cost-benefit analysis to meet and exceed code, as well as alignment with the program criteria of various stakeholders. Historically, the threshold has aligned with the energy performance thresholds of the Investor Owned Utilities. That said, as we move toward lower energy use and lower carbon homes, GreenPoint Rated is evolving and has developed four energy compliance pathways. Each of the four pathways will earn at least the minimum 25 points for compliance.
 1. GreenPoint Rated, as historically done, has a compliance pathway using a percentage compliance margin over the current, or in this case, 2016 Energy Code. This is for dual fuel homes.
 - Single Family: 10% compliance margin over 2016 Title 24
 - Multifamily:
 - Low rise – 10% compliance margin over 2016 Title 24
 - High rise - 10% compliance margin over 2016 Title 24
 - Photovoltaics cannot be used to meet compliance. Photovoltaics may be used to exceed the Energy Code budget
 2. In addition to the compliance margin, GreenPoint Rated will continue to provide a pathway for an all-electric home. The approach for compliance, for **both single family and multifamily**, is as follows:
 - 2% - 5% compliance margin (pending analysis)
 - Prescriptive requirements: water heating that includes either the installation of a HPWH with an energy factor of 3.2 or greater or a solar thermal system with a minimum 30% solar fraction
 - All electric homes must a photovoltaic system
 - Photovoltaics may be used to meet compliance
 3. Whole Building Energy Use Reduction
 - GreenPoint Rated will provide a pathway to zero net energy as a third alternative for program compliance. This alternative will conceptually require a project to demonstrate a percentage reduction over whole building use based on the GreenPoint Rated Energy and Water Calculator. It is anticipated that the percentage will be in the range of 25%.
 4. Energy Design Rating (EDR)
 - GreenPoint Rated will work to develop a compliance pathway using Energy Design Rating (EDR) provided through the compliance software. The EDR is the sum of the annual TDV energy consumption for energy use components included in the

Executive Summary



performance compliance approach for the Standard Design Energy Provisions of the California Green Building Standards Code and the annual TDV energy consumption for lighting and components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics) and accounting for the annual TDV energy offset by an on-site renewable energy system. The Design Rating is calculated by Compliance Software certified by the Energy Commission. This metric moves towards a whole building metric as well as the above option.

- **CALGreen.** CALGreen residential and non-residential mandatory measures will still be prerequisites for GreenPoint Rated. The CALGreen checklists have been updated to reflect the 2016 California Green Building Code. For New Home projects, points will continue to be allocated for CALGreen compliance as follows: four points (one in each Energy, IEQ/Health, Resources, and Water). Although GreenPoint Rated is a residential rating system, the non-residential standards have been included in the prerequisites for buildings where required, whereby the GreenPoint Rater will verify CALGreen Measures to facilitate verification of CALGreen compliance. The commercial portion of the building is not part of the GreenPoint Rated certification. This verification is not intended to replace code inspection (enforcement), unless authorized by the authority having jurisdiction. There are very minor changes to CALGreen from the 2013 standards. Some of the changes include reduction in flow rater for lavatory faucets, increase in recycling rate for C&D waste to 65%. Please see updated CALGreen checklists for Residential and Non-Residential.
- **Prerequisites.** Below is a summary of the prerequisites for New Home rating systems. There is no change in prerequisite measures, with the exception of changes within the CALGreen mandatory measures for code compliance. ASHRAE 62.2 - 2016 applies to all residential occupancies.

Table 1. Summary of Prerequisites

Measure Category	New Home Single Family	New Home Multifamily
CALGreen Residential	X	X
CALGreen Non Residential		If required
Energy Performance	See above	See above
GreenPoint Rated Checklist on Blueprints	X	X
ASHRAE 62.2-2016	X	X
Durable Roofing		X
Green Appraisal Addendum	X	X
Minimum points in each category	X	X
Minimum Total Points	50	50

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- **Other Measures.** The annotated checklist identifies anticipated changes to specific measures for both Single Family and Multifamily. These changes have been vetted with subject matter experts and informed by the appropriate codes and standards.

Below is a brief description of new measures that are being proposed for the version 7 checklist. Please see the pdf of Single Family and Multifamily Checklists.

- **G2.3.2. WaterSense Toilets- 1.1 gpf with a Maximum Performance (MaP) Threshold of No Less Than 500 Grams.** An additional point for a high performance 1.1 gpf toilet.
- **G6. Thermostatic Shower valve or tubspout.** One point for installation of thermostatic shower valves or anto-diverting tubspout with TSV in all bathrooms. This technology helps reduce water wasted after hot water arrives at the fixture (behavioral waste).
- **H9. Low Global Warming Potential Refrigerants.** One point for low-GWp refrigerants in cooling equipment. Current refrigerants include HCFs which have no ozone depletion potential, but have global warming potential when released into the atmosphere. Ideal refrigerants have zero ODP, zero GWP, non-toxic, non-flammable, acceptable operating pressures, and volumetric capacity appropriate to the application.
- **J11. Compartmentalization of units.** Two points are available for minimizing leakage between units by minimizing the uncontrolled pathways for indoor air pollutants between units. This includes prescriptive sealing requirements and performance testing using a blower door.
- **I7. Energy Storage.** Credit awarded to providing on site energy storage to support a portion of household energy use when solar production is not viable. This includes both thermal and electrochemical storage. This measure may be moved to the innovation list to allow for further evaluation.
- **M2.2 Energy Star Dryer.** One point is available for an Energy Star Dryer. Dryers have become an increasing portion of residential energy use as standards for heating, cooling and domestic hot water have increased and efficiencies have improved.
- **M2.3 Solar Dryer.** Half a point will be awarded for providing a laundry line to support solar drying. The laundry line must be a minimum of 70 feet to support a load of laundry. This measure may be moved to the innovations list.
- **M6. Electric Vehicle Charging Stations and Infrastructure.** One point will be awarded for installation of a full circuit for a single family home. Current code requires the raceway to be installed. For multifamily projects, one point of credit is available for installing infrastructure to support the future installation of charging stations to meet Tier 2 thresholds OR two points are available for installing the full circuit to support the Tier 2 thresholds.
- **N2.1 Within 1 mile of a Major Transit Stop.** One additional point is available for developments within 1 mile of a major transit stop with reasonable access to encourage walking or biking to the transit point. This is to further encourage alternatives to driving.
- **N8.1 Vulnerability Assessment.** Three points are available for conducting a vulnerability assessment for a project to understand implications from climate change. While this measure may evolve over time, it is important that we would like to include it on the main checklist.
- **N8.2. Strategies to Address Assessment Findings.** Three points will be awarded to implement strategies that address the high potential impacts from the assessment findings to improve the resiliency and durability of buildings.
- **N9. Social Equity.** Two points are available for projects that complete a community outreach effort to engage with local community and provide a percentage of jobs for the project to local residents or provide a service to meet local needs.
- **O11. Tobacco free buildings.** One point is awarded for properties with a no smoking policy in the building to reduce the exposure of second hand smoke.

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- **O12. IPM Management Plan.** One point is available for developing an IPM Management Plan and entering into a 5 year contract to fulfill those services as defined in the plan. A well-defined Integrated Pest Management (IPM) is a program that should be based on prevention, monitoring, and control which offers the opportunity to eliminate or drastically reduce the use of pesticides, and to minimize the toxicity of and exposure to any products which are used. IPM does this by utilizing a variety of methods and techniques, including cultural, biological and structural strategies to control a multitude of pest problems.
- **Innovation Measures.** There are several measures that Build It Green is investigating but will not be included on the main checklist at this time; they will be available through the innovations list. These measures are being developed and will evolve over time. Therefore, the innovation measure list affords this flexibility.

Interested parties are welcome to contact Build It Green to engage in these discussions to support the evaluation of the measures below. Some of the measures that are being evaluated are:

- **Decarbonization prescriptive approach by building type.** While GreenPoint Rated does capture and quantify the greenhouse gas emissions of green building with a code baseline, there is no set carbon footprint. In the long term, we will be evaluating the definition of the decarbonized/ low carbon home and look to align with research being undertaken by Air Resources Board. In the short term, we will be evaluating the opportunity to define a prescriptive approach to the fuel use for heating, cooling and domestic hot water for a low carbon home.
- **Performance metric for dampness in home.** Dampness in a home has implications on durability as well as creating an environment for mold which can adversely affect health. We are evaluating the opportunity to provide a performance metric on the dampness of a home to support more durable and healthier homes.
- **Encapsulation of spray foam in sealed attic conditions.** Studies have been completed on occupational hazards with application of spray foam. There are initial investigations on the conditions that may impact occupants.

Executive Summary

CA Statewide Codes and Standards Program

Title 24, Part 11
Local Energy Efficiency Ordinances

CALGreen Cost Effectiveness Study

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Last Modified: September 2, 2016

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1 Introduction

The California Building Energy Efficiency Standards Title 24, Part 6 (Title 24) (CEC, 2016b) is maintained and updated every three years by two state agencies, the California Energy Commission (CEC) and the Building Standards Commission (BSC). In addition to enforcing the code, local jurisdictions have the authority to adopt local energy efficiency ordinances, or reach codes, that exceed the minimum standards defined by Title 24 (as established by Public Resources Code Section 25402.1(h)2 and Section 10-106 of the Building Energy Efficiency Standards). Local jurisdictions must demonstrate that the requirements of the proposed ordinance are cost effective and do not result in buildings consuming more energy than is permitted by Title 24. In addition, the jurisdiction must obtain approval from the CEC and file the ordinance with the BSC for the ordinance to be legally enforceable.

This report presents the results from analysis of the feasibility and cost-effectiveness of requiring new low-rise single family and multifamily residential construction to exceed the 2016 Building Energy Efficiency Standards, which become effective January 1, 2017. The analysis includes scenarios of compliance packages options and cost effectiveness analysis for all sixteen California climate zones. Four levels of building energy performance were examined:

- (1) exceeding the minimum requirements by at least 15%, consistent with the voluntary Tier 1 Performance Standard in Title 24, Part 11 (CALGreen),
- (2) exceeding minimum requirement by at least 30%, consistent with the voluntary Tier 2 Performance Standard in CALGreen,
- (3) meeting minimum Title 24 efficiency performance targets plus on-site renewable energy generation sufficient to achieve an Energy Design Rating of zero (TDV-Zero), consistent with the voluntary Zero Net Energy Design tier in CALGreen,
- (4) meeting minimum Title 24 efficiency performance targets plus on-site renewable energy generation sized to offset a portion of the total TDV loads of the building without risking sizing of the PV system larger than the estimated electrical energy use of the building.

2 Methodology and Assumptions

2.1 *Building Prototypes*

The CEC defines building prototypes which it uses to evaluate the cost-effectiveness of proposed changes to Title 24 requirements. There exist two single family prototypes and one multifamily prototype, all three of which are used in this analysis in development of the above-code efficiency packages. Table 1 describes the basic characteristics of each prototype. Additional details on the prototypes can be found in the ACM Approval Manual (CEC, 2016a).

Table 1: Prototype Characteristics

	<u>Single Family One-Story</u>	<u>Single Family Two-Story</u>	<u>Multifamily</u>
Conditioned Floor Area	2,100 ft ²	2,700 ft ²	6,960 ft ² : (4) 780 ft ² & (4) 960 ft ² units
Num. of Stories	1	2	2
Num. of Bedrooms	3	3	(4) 1-bed & (4) 2-bed units
Window-to-Floor Area Ratio	20%	20%	15%

Additionally, each prototype building has the following features:

- Slab-on-grade foundation
- Vented attic. High performance attic in climates where prescriptively assigned (CZ 4, 8-16) with insulation installed below roof deck. Refer to Table 150.1-A in Appendix A.
- Ductwork located in the attic for single family homes and in conditioned space for multifamily.
- Split-system gas furnace with air conditioner that meet the minimum federal guidelines for efficiency
- Tankless gas water heater that meets the minimum federal guidelines for efficiency; individual water heaters in each multifamily apartment.

Other features are defined consistent with the Standard Design in the Alternative Calculation Method Reference Manual (CEC, 2016d), designed to meet, but not exceed, the minimum requirements.

The CEC's standard protocol for the single family prototypes is to weight the simulated energy impacts by a factor that represents the distribution of single-story and two-story homes being built statewide, assuming 45% single-story homes and 55% two-story homes. Simulation results in this study are therefore characterized according to this ratio, which is approximately equivalent to a 2,430 ft² house¹.

2.2 Efficiency Measures & Package Development

The CBECC-RES 2016.2.0 ALPHA2² (833) compliance simulation tool was used to evaluate energy impacts using the 2016 prescriptive standards as the benchmark and the 2016 time dependent valuation (TDV) values. TDV is the energy metric used by the CEC since the 2005 Title 24 energy code to evaluate compliance with the Title 24 standards. TDV values energy use differently depending on the fuel source (gas, electricity, and propane), time of day, and season. TDV was developed to reflect the “societal value or cost” of energy including long-term projected costs of energy such as the cost of providing energy during peak periods of demand and other societal costs such as projected costs for carbon emissions. Electricity used (or saved) during peak periods of the summer has a much higher value than electricity used (or saved) during off-peak periods (Horii et al, 2014).

The methodology used in the analyses for each of the prototypical building types begins with a design that precisely meets the minimum 2016 prescriptive requirements (0% compliance margin). A table of prescriptive measures used in each base design by climate zone is located in Appendix A. Using the 2016 baseline as the starting point, prospective energy efficiency measures were identified and modeled in each of the prototypes to determine the projected energy (Therm and kWh) and compliance impacts. A large set of parametric runs³ were conducted to develop packages of measures that exceed the minimum code performance level by 15% (CALGreen Tier 1), and 30% (Tier 2). The consultants authoring this study selected packages and measures based on decades of experience with residential architects, builders, and engineers along with general knowledge of the relative acceptance and preferences of many measures, as well as their incremental costs.

¹ 2,430 ft² = 45% * 2,100 ft² + 55% * 2,700 ft²

² On June 14, 2016 the CEC approved CBECC-Res 2016.2.0 Version of the software. The version used for this study is nearly identical to the approved version with the exception of minor changes that do not affect the cost effective analysis of the measures evaluated.

³ Using the “quick” simulation speed option.

Evaluation results for the selected packages show that meeting the performance targets for both single family and multifamily prototypes is feasible in most climate zones. In climates where it was not feasible, targets were relaxed to an appropriate level. It is important to note that the packages contained in this report are examples only; any project meeting requirements of a local ordinance, both single family and multifamily, must independently evaluate and identify the most cost effective approach based on project-specific factors.

Following are descriptions of each of the efficiency measures applied in this analysis.

Quality Insulation Installation (QII): HERS rater verification of insulation quality according to the procedures outlined in the 2016 Reference Appendices RA3.5 (CEC, 2016c). QII is included in all cases since it is a pre-requisite for all the voluntary tiers in 2016 CALGreen.

Reduced Infiltration (ACH50): HERS rater field verification and diagnostic testing of building air leakage according to the procedures outlined in the 2016 Reference Appendices RA3.8 (CEC, 2016c). The default infiltration assumption for single family homes is 5 air changes per hour at 50 Pascals (ACH50)⁴ and the reduced level applied in this analysis is 3 ACH50. This measure was not applied to multifamily homes because the modeling software does not allow this credit unless each unit is modeled individually, which is not typical in the compliance process for multifamily buildings.

Window Performance: Reduce window U-value from the prescriptive value of 0.32 to 0.30 in all climates and reduce the solar heat gain coefficient (SHGC) from the prescriptive value of 0.25 to 0.23 in climate zone 2, 4, 6 through 16. In climate zones 1, 3, and 5 there is no prescriptive SHGC requirement and the default value of 0.50 is left as is.

Door Performance: Install insulated doors that meet a U-value of 0.20 at the front entry and doors between the house and garage. It's assumed there is a single 3' x 6'8" entry door per single family home and multifamily unit as well as a second 3' x 6'8" door to the garage per single family home.

Cool Roof: Install a roofing product that's rated by the Cool Roof Rating Council to have an aged solar reflectance of 0.20. This measure only applies to climates zones where this is not already required prescriptively.

Exterior Wall Insulation: Increase wall cavity insulation from R-19 to R-21 in 2x6 walls.

High Performance Attics (HPA): For climates where HPA is not already prescriptive under the 2016 code (CZ 1-3, 5-7), increase attic ceiling insulation to R-38 and add insulation under the roof deck between framing (R-13 for roof with air space, R-18 for roof without air space).

High Efficiency Furnace: Upgrade furnace to a condensing unit with an efficiency of 92% AFUE.

High Efficiency Air Conditioner: Upgrade air conditioner efficiency beyond federal efficiency minimum to either SEER 15 / EER 12.5 or SEER 16 / EER 13.

High Efficacy Fan: Upgrade the fan in the furnace or air handler using an electronically commutated motor (ECM) that meets an efficacy of 0.3 Watts / cfm or lower operating at full speed. Fan watt draw is verified by a HERS rater according to the procedures outlined in the 2016 Reference Appendices RA3.3 (CEC, 2016c). New federal regulations that go into effect July 3, 2019 are expected to result in equivalent performance for all newly manufactured furnaces provided that the ducts are sized properly.

⁴ Whole house leakage tested at a pressure difference of 50 Pascals between indoors and outdoors.

Refrigerant Charge Verification: HERS rater verification of proper air conditioner refrigerant charge according to the procedures outlined in the 2016 Reference Appendices RA3.2 (CEC, 2016c). This measure only applies to climates zones where this is not already required prescriptively.

R-8 Duct Insulation: Increase duct insulation to R-8. This measure only applies to climates zones where R-8 ducts are not already required prescriptively.

High Efficiency Water Heater: Upgrade tankless water heater to a condensing unit with a rated Energy Factor (EF) of either 0.94 or 0.96.

Hot Water Pipe Insulation: Beginning in January 1, 2017 the 2016 California Plumbing Code will require pipe insulation levels that are close to that required if taking the Title-24 pipe insulation credit. This credit will be obsolete under the 2016 energy code, however, the HERS-Verified Pipe Insulation Credit, as defined in the 2016 Reference Appendices RA3.6.3 (CEC, 2016c), will remain. While CBECC-Res has not yet been updated to reflect this, for this analysis it was assumed that the revised HERS verified credit would be equivalent to the current credit for pipe insulation without HERS verification. This was determined based on simulations that demonstrated the HERS credit to be valued at roughly twice that for pipe insulation without verification in terms of TDV energy. This credit was only applied to single family residences. For costing purposes, 120 linear feet of 1/2in insulated pipe is assumed to be insulated.

Hot Water Compact Distribution: HERS rater verification of compact distribution system requirements according to the procedures outlined in the 2016 Reference Appendices RA3.6.5 (CEC, 2016c). This measure was applied to multifamily buildings only. Many multifamily buildings with individual water heaters are expected to easily meet this credit with little or no alteration to plumbing design. This measure also requires verification of pipe insulation per the HERS-Verified Pipe Insulation Credit. Assumption is 60 linear feet per dwelling unit of 1/2in insulated pipe.

PV Compliance Credit: To be eligible for this compliance credit a PV system with a minimum capacity of 2 kW DC per single family home with no more than 2,000 ft² of conditioned floor area and 1 kW DC per multifamily unit with no more than 1,000 ft² of conditioned floor area is required. For the single family 2,430 ft² prototype the minimum capacity as calculated by CBECC-Res is 2.0 kW to 2.4 kW depending on the climate zone. The multifamily apartment units in the prototype are all under 1,000 ft² and therefore require a 1 kW system. The credit was developed to give builders an option with which to trade-off High Performance Attics and Walls, and to begin preparing for ZNE requirements.

Table 2 below summarizes the measures evaluated along with cost assumptions.

Table 2: Measure Descriptions & Cost Assumptions

Measure	Performance Level	Incremental Cost		Source & Notes
		Single Family	MF – Per Unit	
QII	Yes	\$519	\$133	City of Palo Alto 2016 Reach Code Ordinance: http://www.cityofpaloalto.org/civicax/filebank/documents/52054
ACH50	3.0	\$379	n/a	NREL measure cost database (\$0.115/ft ² for sealing) + HERS rater verification (\$100).
Wall Insulation	R-21	\$164	n/a	2016 CASE Report: Residential High Performance Walls and QII, 2016-RES-ENV2-F
Cool Roof	Aged Reflect = 0.20	\$523	\$131	\$0-\$0.50 / ft ² of roof area per local industry expert at LBNL. Used average of \$0.25/ft ² .
Window U-factor/ SHGC	0.30/0.23	\$73	\$20	EnerComp (\$0.15/ft ² of window area)
Doors	0.20 U-factor	\$210	\$140	NREL measure cost database (\$3.50/ft ²) for doors between house and garage. Double cost (\$7/ft ²) for front door assuming a premium product.
High Performance Attics (HPA)	R-15 under roof deck	\$878	\$219	For climate zones 1-3, & 5-7 only where HPA is not prescriptive. 2016 CASE Report: Residential Ducts in Conditioned Space / High Performance Attics, 2016-RES-ENV1-F
Furnace	92%	\$389	\$351	Local HVAC contractor, MF reduction for smaller capacity.
Air Conditioning	15/12.5	\$78	\$46	Local HVAC contractor, MF reduction for smaller capacity.
	16/13	\$839	\$699	Average of local HVAC contractor & NREL database costs. MF reduction for smaller capacity.
Fan Efficacy	0.3 Watts/cfm	\$143	\$104	Local HVAC contractor, MF reduction for smaller capacity.
Refrigerant Charge	HERS verified	n/a	\$75	Local HERS rater.
Duct Insulation	R-8	\$164	n/a	For climate zones 3, 6, & 7 where not prescriptive. 2016 CASE Report: Residential Ducts in Conditioned Space / High Performance Attics, 2016-RES-ENV1-F
Water heater	0.94 EF	\$0	\$0	Internet pricing and plumbing contractor input. Minimal incremental equip cost and lower cost to install PVC venting (condensing) vs stainless venting (standard). Slight premium going from 0.94 to 0.96.
	0.96 EF	\$100	\$100	
Hot water pipe insulation	HERS verified	\$146	n/a	Roughly equivalent to code requirements effective Jan. 2017. 10% of \$3.87 per ft (2013 SF DHW CASE study) for additional labor to pass HERS inspection. \$100 for HERS verification per local HERS raters.
Hot water compact distribution	HERS verified	n/a	\$112	Assume compact design already or easily achieved in MF units – no added cost. \$100 HERS verification fee per local HERS rater. Pipe insulation cost per the pipe insulation measure assumptions.
PV	System size varies	\$3.53 / kW DC	\$3.21 / kW DC	Avg. system cost for systems < 10kW (for the last 12 months) of \$5.29/Watt for single family (http://www.gosolarcalifornia.ca.gov/). For multi-family systems, an average of the < 10 kW and > 10kW system cost (\$4.37/Watt) was used; systems are expected to be typically greater than 10 kW, although not as large as some commercial systems reported on in the database. In both cases cost was reduced by \$0.25/Watt for the NSHP incentive & 30% for the solar investment tax credit.

2.3 Efficiency Packages

Three efficiency packages were developed for each climate zone where feasible, as described below. Since the federal government does not allow local or state government agencies to require the use of federally-regulated equipment that exceeds the minimum standard requirement, this analysis includes at least one package for each climate zone that does not require installing equipment with higher efficiencies than federally mandated. In climates where the PV Compliance Credit (PVCC) is available (all climates except 6 and 7) a package that includes the PVCC in addition to efficiency measures was evaluated to achieve Tier 2 performance levels.

- 1) **Envelope:** These packages focus on building envelope measures but also include efficient hot water pipe distribution and cooling fan efficiency measures that don't trigger federal preemption issues.
- 2) **Equipment:** Use of HVAC and water heating equipment that are more efficient than federal standards combined with efficient envelope measures if necessary.
- 3) **PV Credit:** Utilize the PV compliance credit (PVCC) available in all climate zones except 6 and 7.

2.4 PV Performance Packages

Using the Tier 2 efficiency package (or Tier 1 in cases where reaching Tier 2 wasn't feasible), the PV system was evaluated and sized to offset TDV loads for the following two conditions:

- 1) **PV-Plus:** Install a PV system sized to offset a portion of the total household energy use based on TDV energy. PV sizing is consistent with the methodology included in the California Energy Commission's proposed Solar PV Ordinance being developed by the CEC, and PV sizing calculations were developed such that PV size is to be equivalent to offsetting approximately 80% of total estimated building electricity use for a gas/electric home built to the 2016 Title 24. Table 3 summarizes the prescriptive PV sizing based on Climate Zone and home size.
- 2) **TDV-Zero:** Install a PV system sized to offset 100% of building energy use based on TDV energy, including appliances and plug loads. This is consistent with the requirements of the CALGreen Zero Net Energy Design tier.

In both these cases PV is evaluated in CBECC-Res according to the California Flexible Installation (CFI).

Table 3: Minimum PV System Size (kW_{DC}) required to meet Solar PV Ordinance by Climate Zone

Conditioned Space (ft ²)	CZ1	CZ2	CZ3	CZ4	CZ5	CZ6	CZ7	CZ8	CZ9	CZ10	CZ11	CZ12	CZ13	CZ14	CZ15	CZ16
Less than 1000	1.6	1.4	1.5	1.3	1.4	1.5	1.3	1.5	1.4	1.4	1.7	1.5	1.8	1.3	2.1	1.3
1000 - 1499	2.0	1.7	1.7	1.5	1.6	1.7	1.5	1.8	1.7	1.7	2.2	1.9	2.3	1.6	2.8	1.6
1500 - 1999	2.4	2.0	2.1	1.8	1.9	2.0	1.8	2.1	2.0	2.0	2.7	2.3	2.8	2.0	3.5	1.9
2000 - 2499	2.8	2.3	2.4	2.1	2.1	2.3	2.0	2.4	2.3	2.3	3.2	2.7	3.4	2.3	4.2	2.3
2500 - 2999	3.2	2.6	2.7	2.4	2.4	2.6	2.3	2.7	2.6	2.7	3.7	3.1	3.9	2.7	4.9	2.6
3000 - 3499	3.6	2.9	3.0	2.6	2.7	2.9	2.5	3.0	2.9	3.0	4.2	3.4	4.4	3.0	5.6	3.0
3500 - 3999	3.9	3.2	3.2	2.9	2.9	3.2	2.7	3.3	3.2	3.3	4.7	3.8	4.9	3.4	6.3	3.3
4000 - 4499	4.3	3.5	3.5	3.2	3.1	3.4	2.9	3.6	3.5	3.6	5.1	4.2	5.4	3.7	7.0	3.6

2.5 Cost Effectiveness

A customer based approach to evaluating cost effectiveness was used based on past experience with Reach Code adoption by local governments. The current residential utility rates at the time of the analysis were used to calculate utility costs for all cases and determine cost effectiveness for the proposed packages. Annual utility costs were calculated using hourly electricity and gas output from CBECC-Res and applying the utility tariffs summarized in Table 4. Appendix C includes the utility rate schedules used for this study. The standard residential rate (E1 in PG&E territory, D in SCE territory, & DR in SDG&E) was applied to the base case and all cases without PV systems. The applicable residential time-of-use (TOU) rate was applied to all cases with PV systems.⁵ Any annual electricity production in excess of annual electricity consumption is credited to the utility account at the applicable wholesale rate based on the approved NEM tariffs for that utility. The net surplus compensation rates for the different utilities are as follows:

- PG&E: \$0.043 / kWh
- SCE: \$0.0298 / kWh⁶
- SDG&E: \$0.0321 / kWh⁷

Table 4: IOU Utility Tariffs used based on Climate Zone

Climate Zones	Electric / Gas Utility	Electricity (Standard)	Electricity (Time-of-use)	Natural Gas
1-5, 11-13, 16	PG&E	E1	E-TOU, Option A	G1
6, 8-10, 14, 15	SCE / SoCal Gas	D	TOU-D-T	GR
7	SDG&E	DR	DR-SES	GR

Cost effectiveness was evaluated for all sixteen climate zones and is presented according to lifecycle customer benefit-to-cost ratio. The benefit-to-cost ratio is a metric which represents the cost effectiveness of energy efficiency over a 30-year lifetime taking into account discounting of future savings and financing of incremental costs. A value of one indicates the savings over the life of the measure are equivalent to the incremental cost of that measure. A value greater than one represents a positive return on investment. The ratio is calculated as follows:

Lifecycle Customer Benefit-Cost Ratio =

$$(Annual\ utility\ cost\ savings * Lifecycle\ cost\ factor) / (First\ incremental\ cost * Financing\ factor)$$

The lifecycle cost factor is 19.6 and includes the following assumptions:

- 30-year measure life & utility cost savings
- 3% real discount rate
- No utility rate escalation (conservative assumption)

⁵ Under NEM rulings by the CPUC (D-16-01-144, 1/28/16), all new PV customers shall be in an approved TOU rate structure. As of March 2016, all new PG&E net energy metering (NEM) customers are enrolled in a time-of-use rate.

(<http://www.pge.com/en/myhome/saveenergymoney/plans/tou/index.page?>).

⁶ SCE net surplus compensation rate based on 1-year average September 2015 – August 2016.

⁷ SDG&E net surplus compensation rate based on 1-year average August 2015 – July 2016.

The financing factor is 1.068 and includes the following assumptions:

- 30-year financing term
- 4.5% loan interest rate
- 3% real discount rate
- 20% average tax rate (to account for tax savings due to loan interest deductions)

Simple payback is also presented and is calculated using the equation below. Based on the terms described above the lifecycle cost-to-benefit ratio threshold of one is roughly equivalent to a simple payback of 18 years.

$$\text{Simple payback} = \text{First incremental cost} / \text{Annual customer utility cost savings}$$

2.6 Greenhouse Gas Emissions

Equivalent CO₂ emission savings were calculated using the following emission factors. Electricity factors are specific to California electricity production.

Table 5: Equivalent CO₂ Emissions Factors

		<i>Source</i>
Electricity	0.724 lb. CO ₂ -e / kWh	U.S. Environmental Protection agency's 2007 eGRID data. ⁸
Natural Gas	11.7 lb. CO ₂ -e / Therm	Emission rates for natural gas combustion as reported by the U.S. Environmental Protection agency's GHG Equivalencies Calculator. ⁹

⁸ <https://www.epa.gov/energy/ghg-equivalencies-calculator-calculations-and-references>

⁹ <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

3 Results

Cost effective analysis including evaluating three efficiency packages and two PV performance packages was completed for all sixteen climate zones. Evaluations looked to identify cost effective Tier 1 and Tier 2 packages for both single family and multifamily prototypes at the CALGreen performance targets of 15% and 30%. When initial proposed packages were found to not be cost effective, multiple iterations were conducted to identify a cost effective package. In certain climates it was not feasible, and targets were subsequently relaxed to something more appropriate. In other climates no cost effective package could be identified. In almost every climate there was no cost effective way to achieve Tier 2 efficiency levels without the PV compliance credit, therefore all Tier 2 packages include PV. Because the PVCC is not available in climate zones 6 and 7, no Tier 2 packages were developed for those climates.

Since the results from this analysis are intended to support mandatory energy efficiency requirements, the authors intentionally selected proven cost-effective measures with wide market acceptance in typical residential construction. Achieving greater performance is feasible using advanced design strategies and measures.

3.1 Single Family Results

3.1.1 Single Family Cost Effectiveness Analysis

A comparison of cost effectiveness for each climate zone and five cases is presented in Figure 1. Table 6 and Table 7 provide the results in tabular form along with energy and greenhouse gas (GHG) savings for each efficiency and PV performance tier. Cost effectiveness results are presented for all three efficiency packages described previously (Envelope, Equipment, and PV Credit) as well as for the two PV performance packages (PV-Plus and TDV-Zero). A summary of measures included in each package is listed in Appendix B.1. The lifecycle benefit-to-cost ratio threshold of one is roughly equivalent to a simple payback of 18 years. Shaded rows in the tables reflect those cases which are not cost effective. While using high efficiency equipment is shown to result in the highest return on investment in many climates, it was necessary to find cost effective packages that do not require specification of equipment with efficiencies better than federally mandated values to avoid federal preemption prohibitions.

Tier 1 Envelope packages were found to be cost effective in climate zones 1 through 5 and 9 through 16. The Tier 1 threshold in climate zone 4 was reduced to 10% to meet the cost effectiveness criteria without installing equipment more efficient than federally mandated. No cost effective Tier 1 efficiency packages were identified in climate zones 6 through 8.

Table 7 presents results for the two PV performance packages including the PV capacity necessary to offset the specified TDV energy. The PV system capacity for the PV-Plus packages is sized based upon the values in Table 3 to provide approximately 80% of estimated annual kWh consumption. The required TDV-Zero PV capacity (as required to generate a TDV=0 compliance simulation result) ranges from 3.1 kW DC in the mild climates (CZ5 and 7) to 7.7 kW DC in hot climates (CZ15). In all cases the measures in these packages reflect those in the Tier 2 package, with the exception of climate zones 6 & 7 where they are based on the Tier 1 envelope package.

The PV-Plus cases demonstrate cost effectiveness with a benefit-to-cost ratio ranging from 1.08 to 1.49. Adding PV beyond the amount needed to offset electricity use reduces cost effectiveness in all cases. The Zero-TDV cases are cost effective in only four climate zones and benefit-cost ratios are consistently lower in all climates. This is impacted by the fact that the compliance model is based upon a home with natural gas space and water heating, thus when sizing PV to offset total house TDV, PV electricity generation is offsetting natural gas consumption. The customer is paid for excess electricity generation beyond what is consumed by the dwelling but only at the wholesale rate which is substantially lower than the retail rate.

Greenhouse gas (GHG) savings range from 4.1% to 12.7% for the envelope and equipment Tier 1 packages. Including the PV compliance credit increases GHG reductions to 39% on average. GHG reductions for the two PV packages average 50% and 77% for the PV-Plus and TDV-ZERO cases, respectively.

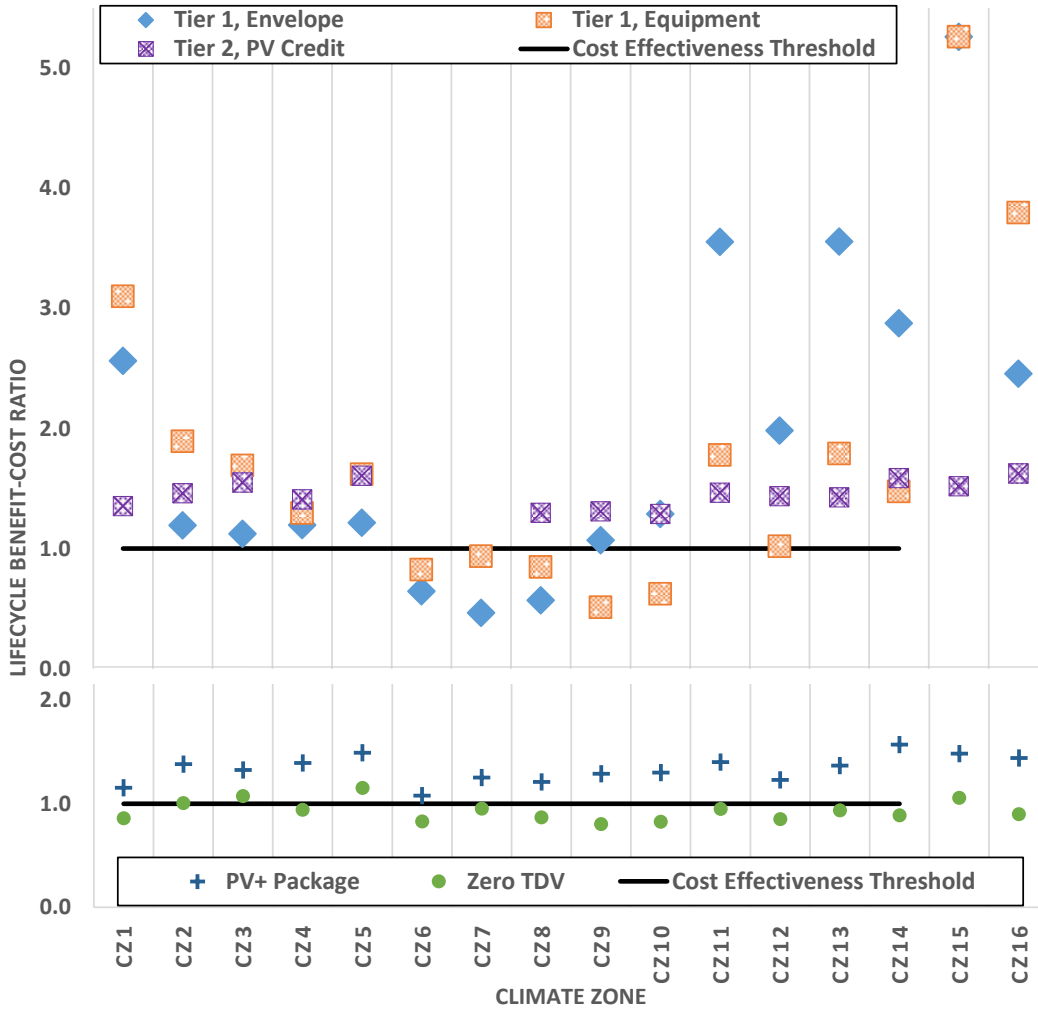


Figure 1: Single family cost effectiveness comparison

Table 6: Single Family Efficiency Package Cost Effectiveness Results¹

Climate Zone	T-24 Comp. Margin	Elec Savings (kWh)	Gas Savings (therms)	% GHG Savings ²	Package Cost ³	Utility Cost Savings	Simple Payback	Lifecycle Benefit-Cost Ratio
Tier 1, Envelope Cases								
CZ1	16.1%	67	83.7	10.7%	\$1,043	\$146	7.2	2.56
CZ2	15.8%	146	49.1	8.2%	\$1,617	\$105	15.4	1.20
CZ3	15.5%	32	43.6	7.7%	\$1,043	\$64	16.3	1.13
CZ4	12.0%	114	18.8	4.1%	\$808	\$53	15.3	1.20
CZ5	15.2%	27	39.3	7.3%	\$812	\$54	15.1	1.22
CZ6	8.7%	20	17.1	3.6%	\$571	\$20	28.4	0.65
CZ7	7.0%	9	9.7	2.3%	\$571	\$15	39.3	0.47
CZ8	8.9%	37	10.2	2.6%	\$571	\$18	32.1	0.57
CZ9	17.2%	169	11.1	4.1%	\$808	\$47	17.2	1.07
CZ10	17.2%	213	12.9	4.7%	\$808	\$57	14.2	1.29
CZ11	16.9%	460	25.9	7.1%	\$808	\$156	5.2	3.55
CZ12	16.4%	222	24.2	5.4%	\$808	\$87	9.3	1.98
CZ13	17.4%	485	22.1	7.0%	\$808	\$157	5.2	3.56
CZ14	16.4%	441	24.4	6.9%	\$808	\$127	6.4	2.88
CZ15	15.2%	896	4.7	8.1%	\$728	\$209	3.5	5.26
CZ16	15.8%	296	80.4	9.8%	\$1,456	\$195	7.5	2.46
Tier 1, Equipment Cases								
CZ1	19.3%	47	101.7	12.7%	\$999	\$169	5.9	3.10
CZ2	16.8%	34	67.0	9.7%	\$999	\$103	9.7	1.89
CZ3	15.3%	23	45.4	8.0%	\$681	\$63	10.8	1.69
CZ4	17.0%	103	45.4	8.3%	\$1,156	\$82	14.2	1.30
CZ5	16.9%	22	46.0	8.4%	\$681	\$60	11.3	1.62
CZ6	15.5%	20	36.2	7.3%	\$842	\$38	22.2	0.83
CZ7	15.6%	9	25.7	5.8%	\$681	\$35	19.6	0.94
CZ8	17.4%	68	25.1	6.0%	\$838	\$39	21.6	0.85
CZ9	16.9%	159	12.2	4.2%	\$1,650	\$46	35.8	0.51
CZ10	16.6%	203	14.2	4.9%	\$1,650	\$56	29.4	0.62
CZ11	17.3%	473	26.0	7.2%	\$1,650	\$160	10.3	1.78
CZ12	16.0%	247	22.7	5.4%	\$1,650	\$92	18.0	1.02
CZ13	17.9%	507	21.5	7.1%	\$1,650	\$161	10.2	1.79
CZ14	17.1%	458	26.4	7.3%	\$1,650	\$133	12.4	1.48
CZ15	15.2%	896	4.7	8.1%	\$728	\$209	3.5	5.26
CZ16	17.6%	58	123.7	12.6%	\$999	\$207	4.8	3.80

Climate Zone	T-24 Comp. Margin	Elec Savings (kWh)	Gas Savings (therms)	% GHG Savings ²	Package Cost ³	Utility Cost Savings	Simple Payback	Lifecycle Benefit-Cost Ratio
Tier 2, Cases with PV Credit								
CZ1	32.2%	2,947	111.8	35.7%	\$10,576	\$781	13.5	1.36
CZ2	31.4%	3,227	132.7	46.9%	\$10,158	\$809	12.6	1.46
CZ3	21.8%	3,190	40.1	40.3%	\$8,644	\$731	11.8	1.55
CZ4	30.4%	3,353	21.8	36.6%	\$8,801	\$677	13.0	1.41
CZ5	22.0%	3,392	35.6	43.7%	\$8,413	\$737	11.4	1.61
CZ6	N/A - No PV Credit							
CZ7	N/A - No PV Credit							
CZ8	36.4%	3,290	10.2	44.0%	\$8,721	\$617	14.1	1.30
CZ9	35.0%	3,333	13.2	41.5%	\$8,333	\$595	14.0	1.31
CZ10	32.2%	3,517	15.4	42.3%	\$8,721	\$612	14.2	1.29
CZ11	31.2%	3,698	35.8	34.7%	\$9,420	\$752	12.5	1.47
CZ12	32.4%	3,386	27.9	33.8%	\$8,721	\$684	12.8	1.44
CZ13	31.3%	3,584	25.4	33.2%	\$9,189	\$715	12.9	1.43
CZ14	30.9%	4,366	26.4	39.4%	\$9,265	\$801	11.6	1.59
CZ15	32.2%	4,610	4.7	39.0%	\$9,265	\$767	12.1	1.52
CZ16	31.5%	3,881	80.4	31.8%	\$9,606	\$852	11.3	1.63
¹ Shaded rows reflect those cases which are not cost effective.								
² Based on CA electricity production and equivalent CO ₂ emission rates of 0.724 lbCO ₂ e / kWh & 11.7 lb-CO ₂ e / therm.								
³ Includes 10% markup for builder profit and overhead.								

Table 7: Single Family PV Performance Package Cost Effectiveness Results¹

Climate Zone	Compliance Margin	PV Capacity (kW)	Elec Savings (kWh)	Gas Savings (therms)	GHG % Savings ²	Package Cost ³	Utility Cost Savings	Simple Payback	Lifecycle Benefit-Cost Ratio
PV-Plus Package									
CZ1	32.2%	3.0	4,178	111.8	45.0%	\$14,146	\$889	15.9	1.15
CZ2	31.4%	2.5	3,798	132.7	51.9%	\$11,575	\$872	13.3	1.38
CZ3	21.8%	2.6	4,082	40.1	49.7%	\$10,836	\$784	13.8	1.33
CZ4	30.4%	2.3	3,619	21.8	39.2%	\$9,441	\$716	13.2	1.39
CZ5	22.0%	2.3	3,838	35.6	48.6%	\$9,441	\$768	12.3	1.49
CZ6	10.8%	2.5	3,912	17.1	48.9%	\$10,294	\$604	17.0	1.08
CZ7	10.6%	2.2	3,556	9.7	51.5%	\$9,602	\$655	14.7	1.25
CZ8	36.4%	2.6	4,026	10.2	53.4%	\$10,525	\$693	15.2	1.21
CZ9	35.0%	2.5	4,092	13.2	50.3%	\$10,137	\$713	14.2	1.29
CZ10	32.2%	2.5	4,202	15.4	50.0%	\$10,351	\$733	14.1	1.30
CZ11	31.2%	3.5	5,728	35.8	51.1%	\$14,368	\$1,097	13.1	1.40
CZ12	32.4%	2.9	4,673	27.9	45.2%	\$11,903	\$799	14.9	1.23
CZ13	31.3%	3.7	5,863	25.4	52.1%	\$14,913	\$1,111	13.4	1.37
CZ14	30.9%	2.5	4,941	26.4	44.1%	\$10,507	\$900	11.7	1.57
CZ15	32.2%	4.6	8,600	4.7	72.2%	\$18,521	\$1,497	12.4	1.48
CZ16	31.5%	2.5	4,501	80.4	35.6%	\$11,022	\$866	12.7	1.44
Zero-TDV Package									
CZ1	32.2%	4.8	6,560	111.8	62.9%	\$21,054	\$987	21.3	0.86
CZ2	31.4%	4.0	6,200	132.7	72.9%	\$17,532	\$960	18.3	1.01
CZ3	21.8%	3.5	5,557	40.1	65.2%	\$14,465	\$845	17.1	1.07
CZ4	30.4%	3.9	6,252	21.8	65.3%	\$15,786	\$808	19.5	0.94
CZ5	22.0%	3.2	5,411	35.6	65.9%	\$13,070	\$821	15.9	1.15
CZ6	10.8%	3.5	5,530	17.1	68.3%	\$14,271	\$644	22.2	0.83
CZ7	10.6%	3.1	5,083	9.7	72.4%	\$13,221	\$686	19.3	0.95
CZ8	36.4%	3.7	5,821	10.2	76.3%	\$14,930	\$705	21.2	0.87
CZ9	35.0%	4.3	7,090	13.2	85.4%	\$17,258	\$756	22.8	0.80
CZ10	32.2%	4.3	7,103	15.4	82.5%	\$17,258	\$776	22.2	0.83
CZ11	31.2%	6.1	9,908	35.8	85.0%	\$24,555	\$1,269	19.3	0.95
CZ12	32.4%	5.1	8,094	27.9	75.4%	\$20,363	\$944	21.6	0.85
CZ13	31.3%	6.4	10,075	25.4	87.1%	\$25,488	\$1,299	19.6	0.94
CZ14	30.9%	5.5	10,295	26.4	88.0%	\$22,072	\$1,068	20.7	0.89
CZ15	32.2%	7.7	13,811	4.7	115.5%	\$30,610	\$1,762	17.4	1.06
CZ16	31.5%	5.2	9,147	80.4	64.2%	\$21,636	\$1,061	20.4	0.90
¹ Shaded rows reflect those cases which are not cost effective. ² Based on CA electricity production and equivalent CO ₂ emission rates of 0.724 lbCO ₂ e / kWh & 11.7 lb-CO ₂ e / therm. ³ Includes 10% markup for builder profit and overhead.									

3.1.2 Single Family Package Recommendations

Based on the single family cost effective analysis, two reach code packages were developed, an efficiency package and a PV package as described below. Table 8 and Table 9 summarize the measures used to cost effectively meet the performance targets for each package.

Tier 1 Efficiency only: Where cost effective packages were identified, the 15% compliance margin target, consistent with CALGreen Tier 1 were used. As stated earlier, a cost effective 15% package was not identified for climate zone 4, so a 10% compliance margin target was used. No cost effective efficiency only packages were identified for climate zones 6 through 8.

Table 8: Single Family Efficiency Only: Cost Effective Measures Summary

Climate Zone	Compliance Margin Target	OII	ACH50	Window U-value / SHGC	Door U-value	AH Fan W/cfm	HW Pipe Insul.
CZ1	15%	Y		.30/.50	0.20		Y
CZ2	15%	Y	3	.30/.23	0.20	0.30	Y
CZ3	15%	Y		.30/.50	0.20		Y
CZ4	10%	Y		.30/.23		0.30	
CZ5	15%	Y		.30/.50			Y
CZ6				No package			
CZ7				No package			
CZ8				No package			
CZ9	15%	Y		.30/.23		0.30	
CZ10	15%	Y		.30/.23		0.30	
CZ11	15%	Y		.30/.23		0.30	
CZ12	15%	Y		.30/.23		0.30	
CZ13	15%	Y		.30/.23		0.30	
CZ14	15%	Y		.30/.23		0.30	
CZ15	15%	Y				0.30	
CZ16	15%	Y	3	.30/.23	0.20	0.3	

PV-Plus: Cost effective packages with efficiency and PV were identified in all 16 climate zones, but the compliance margin targets were lowered to 20% for climates 3 and 5, and to 10% for 6 and 7. Table 9 summarizes the measures used in each climate zone to cost effectively meet the targets. It is assumed that the PV compliance credit can be used to meet all these targets, except in climate zones 6 and 7. It is also assumed that a PV system is installed per the methodology described in Table 3 and consistent with the CEC Solar PV Ordinance.

Table 9: Single Family PV-Plus: Cost Effective Measures Summary

Climate Zone	Compliance Margin Target	QII	ACH50	Window U-value / SHGC	Door U-value	HPA	AH Fan W/cfm	HW Pipe Insul.	PV Capacity (kW)
CZ1	30%	Y	3	.30/.50	0.20	Y		Y	3.0
CZ2	30%	Y		.30/.50	0.20	Y		Y	2.5
CZ3	20%	Y		.30/.50	0.20				2.6
CZ4	30%	Y		.30/.23					2.3
CZ5	20%	Y		.30/.50					2.3
CZ6	10%	Y					0.30		2.5
CZ7	10%	Y		.30/.23	0.20		0.30	Y	2.2
CZ8	30%	Y							2.6
CZ9	30%	Y							2.5
CZ10	30%	Y							2.5
CZ11	30%	Y		.30/.23	0.20				3.5
CZ12	30%	Y							2.9
CZ13	30%	Y		.30/.23					3.7
CZ14	30%	Y					0.30		2.5
CZ15	30%	Y					0.30		4.6
CZ16	30%	Y	3	.30/.23	0.20		0.30		2.5

3.2 Multifamily Results

It is generally more challenging to achieve equivalent savings targets for the multifamily cases than for the single family cases. With less exterior surface area per floor area the impact of envelope measures is diminished in multifamily buildings. The PV credit is also much smaller because it is offsetting only high performance walls; high performance attic is not applied to the multifamily prescriptive design because ducts are already assumed to be within conditioned space. Shaded rows in the tables below indicate cases that don't meet the 15% target for Tier 1 or don't have feasible Tier 2 packages.

3.2.1 Multifamily Cost Effectiveness Analysis

A comparison of cost effectiveness for the multi-family prototype is presented in Figure 2. Table 10 and Table 11 provide the results in tabular form, along with energy and greenhouse gas savings for the efficiency and PV performance tiers, respectively. *All multifamily results are presented on a per dwelling unit basis.* Cost effectiveness results are presented for all of the three efficiency packages described previously (envelope, equipment, and PV compliance credit) as well as for the two PV performance packages (PV-Plus and TDV-Zero). A summary of measures included in each package is listed in Appendix B.2. The lifecycle benefit-to-cost ratio threshold of one is roughly equivalent to a simple payback of 18 years. Shaded rows in the tables reflect those cases which aren't cost effective. While using high efficiency equipment is shown to result in an improved return on investment in many climates, it was necessary to find cost effective packages that do not require specification of equipment with efficiencies better than federally mandated values. It can be noted that since rental rates are determined primarily by location, tenants may not experience increased rents due to the cost of efficiency measures. If this is the case, the tenants have no costs and only the benefit of lower energy utility costs.

Tier 1, Envelope packages were found to be cost effective in climate zones 1, and 10 through 16, although the threshold for climate zone 10 was lowered to 10% to meet the cost effectiveness criteria. QII alone was found to be cost effective in climate zone 2 but a cost effective 10% package requires using the PV

compliance credit. No cost effective Tier 1, Envelope efficiency packages were identified in climate zones 3 through 9 without the addition of high efficiency equipment or PV.

Table 11 summarizes the cost effectiveness of the PV performance packages. PV capacity required to meet the required TDV energy offset for each case is also included. The PV capacity for the PV-Plus packages are sized the same as for the single family analysis and based upon the values in Table 3. The required TDV-Zero PV capacity per apartment ranges from 1.9 kW DC in the mild climates to 3.7 kW DC in hot climates (CZ15). For the multifamily prototype 8-unit apartment building, this is equivalent to 15.2 to 29.6 kW for the building. In all cases the measures in these packages reflect those in the Tier 2 package, with the exception of climate zones 6 & 7 where they are based on the Tier 1 envelope package.

The PV-Plus cases demonstrate cost effectiveness with a benefit-to-cost ratio ranging from 1.01 to 1.66. Similar to the single family analysis, while PV is cost effective in offsetting electricity use, adding PV to meet a zero TDV design reduces cost effectiveness in all cases with only two climates having a value greater than 1.

Greenhouse gas (GHG) savings range from 2.2% to 8.6% for the envelope and equipment Tier 1 packages. Including the PV compliance credit increases GHG reductions to 34% on average. GHG reductions for the two PV packages average 49% and 78% for the PV-Plus and ZN-TDV cases, respectively.

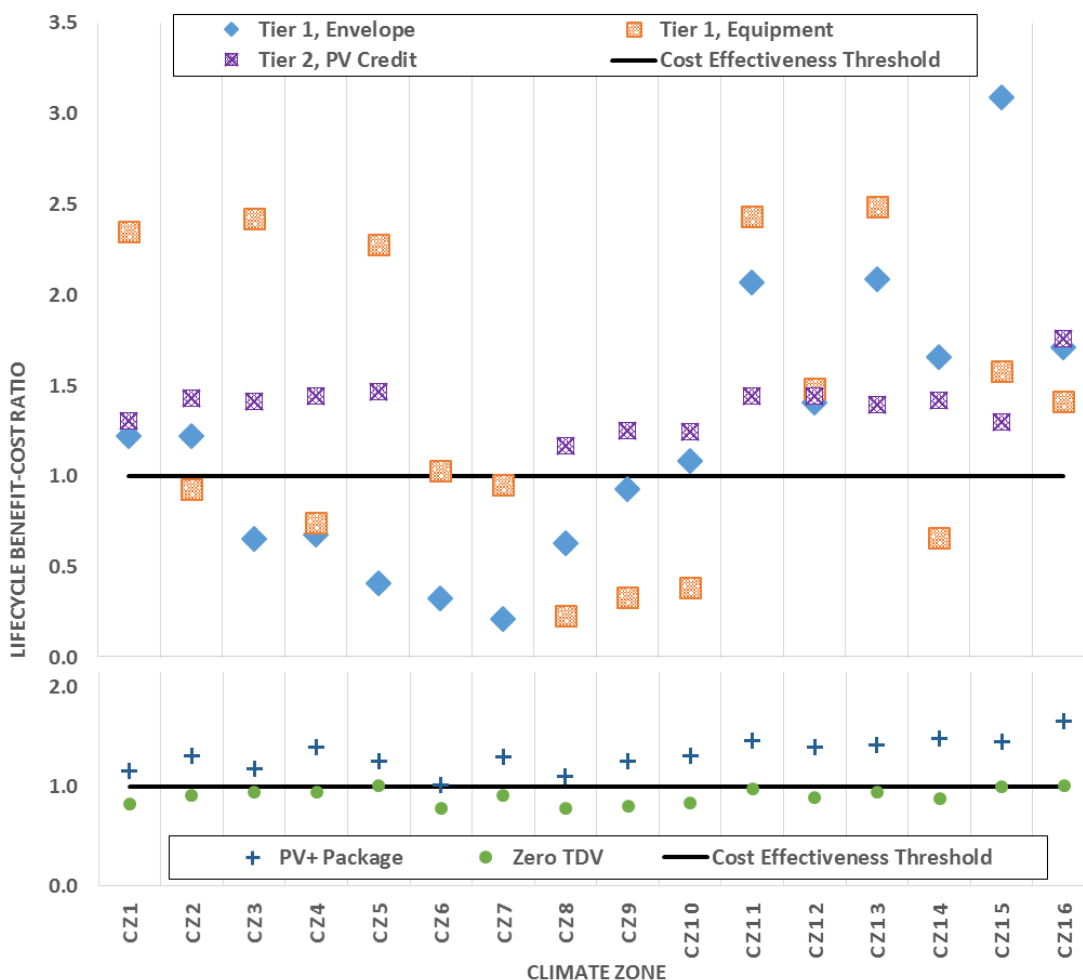


Figure 2: Multifamily cost effectiveness comparison

Table 10: Multifamily Efficiency Cost Effectiveness Results¹

Climate Zone	T-24 Comp. Margin	Elec Savings (kWh)	Gas Savings (therms)	% GHG Savings ²	Package Cost ³	Utility Cost Savings	Simple Payback	Lifecycle Benefit-Cost Ratio
Tier 1, Envelope Cases								
CZ1	16.5%	31	28.0	8.0%	\$559	\$37	15.0	1.22
CZ2	4.8%	7	7.3	2.2%	\$146	\$10	15.0	1.22
CZ3	10.9%	-3	14.3	4.5%	\$444	\$16	28.1	0.65
CZ4	10.9%	45	4.6	2.3%	\$364	\$14	26.9	0.68
CZ5	10.2%	-4	13.3	4.2%	\$641	\$14	45.1	0.41
CZ6	11.7%	19	7.7	3.0%	\$559	\$10	55.7	0.33
CZ7	10.2%	10	4.3	1.7%	\$641	\$7	87.3	0.21
CZ8	10.5%	55	1.2	1.5%	\$282	\$10	29.0	0.63
CZ9	12.3%	79	2.0	2.2%	\$282	\$14	19.7	0.93
CZ10	10.1%	92	2.5	2.6%	\$282	\$17	16.9	1.08
CZ11	17.7%	186	13.2	6.5%	\$436	\$49	8.9	2.07
CZ12	17.1%	103	12.6	5.4%	\$436	\$33	13.1	1.41
CZ13	18.1%	200	11.3	6.3%	\$436	\$50	8.8	2.09
CZ14	17.8%	176	12.9	6.3%	\$436	\$39	11.1	1.66
CZ15	17.7%	426	0.6	6.8%	\$436	\$73	5.9	3.09
CZ16	16.3%	91	29.9	8.0%	\$559	\$52	10.7	1.71
Tier 1, Equipment Cases								
CZ1	16.7%	8	31.7	8.6%	\$290	\$37	7.8	2.35
CZ2	15.0%	7	27.3	8.0%	\$642	\$32	19.8	0.93
CZ3	12.4%	1	16.9	5.4%	\$146	\$19	7.6	2.42
CZ4	16.3%	11	25.5	8.0%	\$765	\$31	24.8	0.74
CZ5	11.8%	-3	16.6	5.3%	\$146	\$18	8.1	2.28
CZ6	12.1%	1	16.4	5.6%	\$269	\$15	17.8	1.03
CZ7	12.5%	-1	15.9	5.5%	\$379	\$20	19.3	0.95
CZ8	15.2%	83	1.2	2.1%	\$1,133	\$14	80.4	0.23
CZ9	15.7%	106	2.0	2.8%	\$1,029	\$19	55.4	0.33
CZ10	15.5%	124	2.5	3.2%	\$1,029	\$22	47.2	0.39
CZ11	16.5%	202	6.3	5.0%	\$333	\$44	7.5	2.43
CZ12	15.0%	109	6.1	3.6%	\$333	\$27	12.4	1.48
CZ13	15.4%	199	5.1	4.6%	\$311	\$42	7.4	2.48
CZ14	16.5%	201	6.1	4.9%	\$1,029	\$37	27.7	0.66
CZ15	20.4%	515	0.4	8.2%	\$1,029	\$89	11.6	1.58
CZ16	15.7%	86	29.8	7.9%	\$668	\$51	13.0	1.41

Climate Zone	T-24 Comp. Margin	Elec Savings (kWh)	Gas Savings (therms)	% GHG Savings ²	Package Cost ³	Utility Cost Savings	Simple Payback	Lifecycle Benefit-Cost Ratio
Tier 2, Cases with PV Credit								
CZ1	21.0%	1,370	28.0	30.2%	\$4,085	\$291	14.1	1.31
CZ2	20.4%	1,608	17.2	33.7%	\$4,085	\$318	12.8	1.43
CZ3	15.3%	1,585	14.1	35.7%	\$4,085	\$315	13.0	1.41
CZ4	26.9%	1,654	13.6	35.6%	\$4,085	\$321	12.7	1.44
CZ5	12.4%	1,677	13.3	37.7%	\$4,085	\$326	12.5	1.46
CZ6	N/A - No PV credit							
CZ7	N/A - No PV credit							
CZ8	21.0%	1,622	5.7	35.3%	\$4,085	\$260	15.7	1.17
CZ9	26.8%	1,719	4.0	35.4%	\$3,963	\$270	14.7	1.25
CZ10	26.2%	1,734	4.9	35.2%	\$3,963	\$269	14.7	1.25
CZ11	26.5%	1,778	13.2	32.6%	\$3,963	\$311	12.7	1.44
CZ12	26.5%	1,673	12.6	32.8%	\$3,963	\$312	12.7	1.44
CZ13	27.3%	1,746	11.3	31.8%	\$3,963	\$301	13.2	1.39
CZ14	26.0%	1,973	12.9	36.0%	\$3,963	\$307	12.9	1.42
CZ15	25.4%	2,100	0.6	33.0%	\$3,963	\$281	14.1	1.30
CZ16	25.7%	1,734	42.4	33.8%	\$3,848	\$369	10.4	1.76
¹ Shaded rows reflect those cases which are not cost effective.								
² Based on CA electricity production and equivalent CO ₂ emission rates of 0.724 lbCO ₂ e / kWh & 11.7 lb-CO ₂ e / therm.								
³ Includes 10% markup for builder profit and overhead.								

Table 11: Multifamily PV Performance Cost Effectiveness Results¹

Climate Zone	Compliance Margin	PV Capacity (kW)	Elec Savings (kWh)	Gas Savings (therms)	GHG % Savings ²	Package Cost ³	Utility Cost Savings	Simple Payback	Lifecycle Benefit-Cost Ratio
PV-Plus Package									
CZ1	21.0%	1.6	2,172	28.0	43.5%	\$6,201	\$393	15.8	1.16
CZ2	20.4%	1.4	2,234	17.2	44.9%	\$5,496	\$393	14.0	1.31
CZ3	15.3%	1.5	2,374	14.1	51.2%	\$5,849	\$377	15.5	1.18
CZ4	26.9%	1.3	2,137	13.6	44.8%	\$5,143	\$391	13.1	1.40
CZ5	12.4%	1.4	2,350	13.3	51.1%	\$5,496	\$375	14.7	1.25
CZ6	11.7%	1.5	2,388	7.7	52.5%	\$5,849	\$322	18.1	1.01
CZ7	10.2%	1.3	2,139	4.3	48.0%	\$5,226	\$369	14.2	1.30
CZ8	21.0%	1.5	2,413	5.7	51.6%	\$5,849	\$350	16.7	1.10
CZ9	26.8%	1.4	2,372	4.0	48.4%	\$5,373	\$369	14.6	1.26
CZ10	26.2%	1.4	2,386	4.9	47.9%	\$5,373	\$383	14.0	1.31
CZ11	26.5%	1.7	2,893	13.2	50.8%	\$6,431	\$514	12.5	1.47
CZ12	26.5%	1.5	2,457	12.6	46.5%	\$5,726	\$437	13.1	1.40
CZ13	27.3%	1.8	2,982	11.3	52.2%	\$6,784	\$525	12.9	1.42
CZ14	26.0%	1.3	2,512	12.9	44.9%	\$5,021	\$406	12.4	1.49
CZ15	25.4%	2.1	3,940	0.6	61.8%	\$7,842	\$618	12.7	1.45
CZ16	25.7%	1.3	2,244	42.4	40.9%	\$4,906	\$444	11.1	1.66
Zero-TDV Package									
CZ1	21.0%	2.5	3,415	28.0	64.2%	\$9,476	\$424	22.3	0.82
CZ2	20.4%	2.3	3,674	17.2	70.7%	\$8,741	\$433	20.2	0.91
CZ3	15.3%	2.0	3,233	14.1	68.1%	\$7,767	\$400	19.4	0.94
CZ4	26.9%	2.2	3,587	13.6	72.4%	\$8,320	\$429	19.4	0.95
CZ5	12.4%	1.9	3,189	13.3	67.8%	\$7,254	\$399	18.2	1.01
CZ6	11.7%	2.1	3,356	8.0	72.7%	\$8,011	\$341	23.5	0.78
CZ7	10.2%	2.1	3,383	4.0	75.0%	\$7,903	\$394	20.0	0.92
CZ8	21.0%	2.4	3,768	5.7	79.6%	\$8,869	\$379	23.4	0.78
CZ9	26.8%	2.5	4,124	4.0	83.1%	\$9,154	\$403	22.7	0.81
CZ10	26.2%	2.5	4,115	4.9	81.5%	\$9,115	\$415	22.0	0.84
CZ11	26.5%	3.0	4,979	13.2	84.9%	\$11,052	\$586	18.9	0.97
CZ12	26.5%	2.8	4,509	12.6	82.3%	\$10,336	\$503	20.6	0.89
CZ13	27.3%	3.2	5,129	11.3	87.6%	\$11,681	\$603	19.4	0.95
CZ14	26.0%	2.7	5,056	12.9	86.8%	\$10,014	\$482	20.8	0.88
CZ15	25.4%	3.7	6,571	0.6	102.9%	\$13,389	\$726	18.4	0.99
CZ16	25.7%	2.6	4,398	42.4	71.0%	\$9,379	\$514	18.2	1.01

¹ Shaded rows reflect those cases which are not cost effective.
² Based on CA electricity production and equivalent CO₂ emission rates of 0.724 lbCO₂e / kWh & 11.7 lb-CO₂e / therm.
³ Includes 10% markup for builder profit and overhead.

3.2.2 Multifamily Package Recommendations

Based on the multifamily cost effective analysis, two reach code packages were developed, similar to the single family packages. Table 12 and Table 13 summarize the measures used to cost effectively meet the performance targets for each multifamily package.

Tier 1 Efficiency only: Where cost effective packages were identified, the 15% compliance margin target, consistent with CALGreen Tier 1 were used. As stated earlier, a cost effective 15% package was not identified for climate zone 10, so a 10% compliance margin target was used, and only QII was cost effective in climate zone 2. Additionally, no cost effective efficiency only packages were identified for climate zones 3 through 9.

Table 12: Multifamily Efficiency Only: Cost Effective Measures Summary

Climate Zone	Compliance Margin Target	QII	Window U-value / SHGC	Door U-value	AH Fan W/cfm	Refrigerant Charge	HW Comp. Dist.
CZ1	15%	Y	0.30/0.50	0.20	0.3		Y
CZ2	QII Only	Y					
CZ3		No package					
CZ4		No package					
CZ5		No package					
CZ6		No package					
CZ7		No package					
CZ8		No package					
CZ9		No package					
CZ10	10%	Y	0.30/0.23		0.3		
CZ11	15%	Y	0.30/0.23	0.20	0.3		
CZ12	15%	Y	0.30/0.23	0.20	0.3		
CZ13	15%	Y	0.30/0.23	0.20	0.3		
CZ14	15%	Y	0.30/0.23	0.20	0.3		
CZ15	15%	Y	0.30/0.23	0.20	0.3		
CZ16	15%	Y	0.30/0.23	0.20	0.3		Y

PV-Plus: Cost effective packages with efficiency and PV were identified in all 16 climate zones, but the compliance margin targets in all climates were lowered below 30% in all cases to be cost effective. Table 13 summarizes the compliance margin targets in each climate zone and the measures used to cost effectively meet the targets. As with the single family packages, with the exception of climate zones 6 and 7, it is assumed that the PV compliance credit can be used to meet these targets. It is also assumed that a PV system is installed per the methodology developed for the proposed Solar PV ordinance (Table 3).

Table 13: Multifamily PV-Plus: Cost Effective Measures Summary

Climate Zone	Compliance Margin Target	QII	Window U-value / SHGC	Door U-value	AH Fan W/cfm	HW Comp. Dist.	PV Capacity (kW)
CZ1	20%	Y	0.30/0.50	0.20	0.3	Y	1.6
CZ2	20%	Y	0.30/0.23	0.20	0.3	Y	1.4
CZ3	15%	Y	0.30/0.50	0.20	0.3	Y	1.5
CZ4	25%	Y	0.30/0.23	0.20	0.3	Y	1.3
CZ5	10%	Y	0.30/0.50	0.20	0.3	Y	1.4
CZ6	10%	Y	0.30/0.23	0.20			1.5
CZ7	10%	Y	0.30/0.23	0.20			1.3
CZ8	20%	Y	0.30/0.23	0.20	0.3	Y	1.5
CZ9	25%	Y	0.30/0.23	0.20	0.3		1.4
CZ10	25%	Y	0.30/0.23	0.20	0.3		1.4
CZ11	25%	Y	0.30/0.23	0.20	0.3		1.7
CZ12	25%	Y	0.30/0.23	0.20	0.3		1.5
CZ13	25%	Y	0.30/0.23	0.20	0.3		1.8
CZ14	25%	Y	0.30/0.23	0.20	0.3		1.3
CZ15	25%	Y	0.30/0.23	0.20	0.3		2.1
CZ16	25%	Y	0.30/0.23	0.20			1.3

4 Conclusions & Summary

This report evaluated the feasibility and cost effectiveness of “above code” ordinance performance tiers through the application of both efficiency measures and PV in all 16 California climate zones. For this analysis, PG&E rates were used for gas and electricity in climate zones 1 through 5, 11 through 13, and 16. SCE electricity rates and Southern California Gas rates were used for climate zones 6, 8 through 10, 14 and 15. SDG&E rates were used for electricity and gas for climate zone 7.

The following describes the recommended performance levels for the above-code ordinance packages. The original intent was to develop packages that align with the tiers as defined in the 2016 CALGreen code. Based on the analysis results, performance thresholds were reduced in some climates and eliminated altogether in other climates. Identifying cost effective efficiency (only) packages was particularly challenging in multifamily buildings. Table 14 and Table 15 summarize recommended cost effective ordinance criteria by climate zone for single family and multifamily buildings, respectively. Where cost effective packages exist, there is both a Tier 1 efficiency only package and the efficiency with PV (PV-Plus) package. The tables include the Title 24 compliance target needed to meet the criteria for each package. Tier 1 compliance targets are compliance margins for efficiency measures only and are designed to be met without using the PV Compliance Credit. The PV-Plus compliance targets are for projects that include PV. The efficiency targets are set higher, but assume that the PV compliance credit (PVCC) is used to meet the performance targets. The efficiency targets are set lower for climate zones 6 and 7 because projects built in these climate zones are not eligible to take the PVCC.

Following is a summary of the differences between the two packages defined in this analysis and the tiers defined in CALGreen.

Tier 1 Packages: CALGreen defines Tier 1 as showing a 15% or greater Title 24 compliance margin compared to the Standard Design. The intent of the Efficiency tier in this study was to find cost effective packages of measures that meet the CALGreen Tier 1 criteria without mandating the installation of PV or high efficiency equipment that exceed federal minimum levels. To encourage adoption of efficiency measures in preparation for the 2019 Title-24 code, the authors recommend that PV not be allowed as a means to meet the Tier 1 compliance requirements. Based on the lifecycle benefit-to-cost ratio metric applied in this analysis, cost effectiveness results for the single family and low-rise multifamily homes show that there exist multiple cost effective packages to meet Tier 1. There are several climates where the compliance margin targets are lowered to maintain the cost effectiveness criteria and other climates where no cost effective efficiency packages were identified.

PV-Plus Packages: CALGreen defines both Tier 2 and ZNE Tier performance levels. The ZNE Tier requires that the building meet the required efficiency targets as defined in Section A4.203.1.2.3 of 2016 CALGreen and size a PV system to offset 100% of the TDV energy of the building (achieve an Energy Design Rating of 0). The results of this work, based on dwellings with gas and electricity, found that sizing the PV system to meet the ZNE Tier criteria was generally not cost effective or in some limited cases, marginally cost effective. Instead a PV and efficiency package (PV-Plus) was developed that limited the size of the PV system to no larger than the annual estimated electricity use of the building and combine it with efficiency measures that are cost effective in all climate zones. Lifecycle benefit-to-cost ratio for the PV-Plus cases for both the single family and multifamily prototypes are all above one. In cases where PV capacity in the PV-Plus package is less than the minimum to meet the PV compliance credit, it's recommended that jurisdictions allow the smaller PV capacity be installed and still qualify for the PVCC to avoid sizing the PV systems larger than the estimated electricity use.

Table 14: Single Family Reach Code Package Recommendations

Packages	Climate Zones	T-24 Compliance Target	PVCC Allowed	PV
Tier 1 Efficiency Only Package	1-3, 5, 9-16	15%	No	n/a
	4	10%	No	n/a
PV-Plus Package	1,2,4, 8-16	30%	Yes	Yes
	3,5	20%	Yes	Yes
	6-7	10%	n/a	Yes

Table 15: Multifamily Reach Code Package Recommendations

Packages	Climate Zones	T-24 Compliance Target	PVCC Allowed	PV
Tier 1 Efficiency Only Package	1, 11-16	15%	No	n/a
	10	10%	No	n/a
	2	QII	No	n/a
PV-Plus Package	4, 9-16	25%	Yes	Yes
	1-2, 8	20%	Yes	Yes
	3	15%	Yes	Yes
	5	10%	Yes	Yes
	6-7	10%	n/a	Yes

Consistent with CALGreen, a pre-requisite for all packages includes HERS verification of Quality Insulation Installation (QII).

The recommended packages do not include a TDV-Zero option because these packages were generally not found to be cost effective. Lifecycle benefit-to-cost ratios for the single family TDV-Zero packages are 0.78 to 1.07. Limited cost effectiveness is largely a result of oversizing the PV systems relative to the house electricity load. With mixed fuel homes, PV electricity generation offsets natural gas consumption when sizing relative to zero TDV. The consumer is compensated by the utility for electricity generation in excess of annual consumption, but only at the wholesale rate which is substantially lower than the retail rate. Consideration of dwellings without gas was not in the scope of this study.

In conclusion, this report has identified cost effective options to meet above-code performance levels for dwellings using natural gas and electricity which can be adopted by cities and counties within investor-owned utility territories across California. Including PV to the level of offsetting electricity loads was found to be cost effective in all sixteen climate zones evaluated as summarized above.

5 References

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Appendix A – Prescriptive Package

The following presents the residential prescriptive package as printed in the 2016 Building Energy Efficiency Standards (CEC, 2016b).

TABLE 150.1-A COMPONENT PACKAGE-A STANDARD BUILDING DESIGN

		C																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
Building Envelope Insulation	Roofs/ Ceilings	Option A (meets §150.1(c)(9A))	Continuous Insulation Above Roof Rafter	Roofing Type	No Air Space ¹	NR	NR	NR	R 8	NR	NR	NR	R 8	R 8	R 8	R 8	R 8	R 8	R 8	R 8	
			With Air Space ²		NR	NR	NR	R 6	NR	NR	NR	R 6	R 6	R 6	R 6	R 6	R 6	R 6	R 6	R 6	R 6
			Ceiling Insulation	R 38	R 38	R 30	R 38	R 30	R 30	R 30	R 38	R 38	R 38	R 38	R 38	R 38	R 38	R 38	R 38	R 38	R 38
		Radiant Barrier	NR	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	NR	
		Option B (meets §150.1(c)(9A))	Below Roof Deck Insulation	Roofing Type	No Air Space	NR	NR	NR	R 18	NR	NR	NR	R 18	R 18	R 18	R 18	R 18	R 18	R 18	R 18	R 18
			With Air Space		NR	NR	NR	R 13	NR	NR	NR	R 13	R 13	R 13	R 13	R 13	R 13	R 13	R 13	R 13	R 13
	Ceiling Insulation		R 38	R 38	R 30	R 38	R 30	R 30	R 30	R 38	R 38	R 38	R 38	R 38	R 38	R 38	R 38	R 38	R 38	R 38	
	Radiant Barrier	NR	REQ	REQ	NR	REQ	REQ	REQ	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Option C (meets	Ceiling Insulation	R 38	R 30	R 30	R 30	R 30	R 30	R 30	R 30	R 30	R 30	R 38	R 38	R 38	R 38	R 38	R 38	R 38		
		Radiant Barrier	NR	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	NR		

TABLE 150.1-A COMPONENT PACKAGE-A STANDARD BUILDING DESIGN (CONTINUED)

			Climate Zone																	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Building Envelope Insulation	Walls	Above Grade	Framed ⁴	U 0.051	U 0.051	U 0.051	U 0.051	U 0.051	U 0.065	U 0.065	U 0.051	U 0.051	U 0.051	U 0.051	U 0.051	U 0.051	U 0.051	U 0.051		
			Mass Wall Interior ⁵	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.059 R 17	
			Mass Wall Exterior ⁶	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.125 R 8.0	U 0.1025 R 8.0	U 0.125 R 8.0	U 0.070 R 13	
		Below Grade	Below Grade Interior ⁷	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.070 R 13	U 0.066 R 15	
			Below Grade Exterior	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.200 R 5.0	U 0.100 R 10	U 0.100 R 10	U 0.053 R 19	
	Floors	Slab Perimeter	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	U 0.58 R 7.0		
		Raised	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19	U 0.037 R 19		
		Concrete Raised	U 0.092 R 8.0	U 0.092 R 8.0	U 0.269 R 0	U 0.269 R 0	U 0.269 R 0	U 0.269 R 0	U 0.269 R 0	U 0.269 R 0	U 0.269 R 0	U 0.269 R 0	U 0.269 R 0	U 0.092 R 8.0	U 0.138 R 4.0	U 0.092 R 8.0	U 0.092 R 8.0	U 0.138 R 4.0	U 0.092 R 8.0	
	Building Envelope	Roofing Products	Low-sloped	Aged Solar Reflectance	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.63	NR	0.63	NR
				Thermal Emittance	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.75	NR	0.75
Steep Sloped		Aged Solar Reflectance	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.20	0.20	0.20	0.20	0.20	0.20	NR	
		Thermal Emittance	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.75	0.75	0.75	0.75	0.75	0.75	NR	
Building Envelope	Fenestration	Maximum U-factor	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32		
		Maximum SHGC	NR	0.25	NR	0.25	NR	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	
		Maximum Total Area	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	
		Maximum West Facing Area	NR	5%	NR	5%	NR	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	

TABLE 150.1-A COMPONENT PACKAGE-A STANDARD BUILDING DESIGN (CONTINUED)

			Climate Zone																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
HVAC SYSTEM	Space Heating¹¹	Electric-Resistance Allowed	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	
		If gas, AFUE	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN
		If Heat Pump, HSPF⁹	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN
	Space cooling	SEER	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN	MIN
		Refrigerant Charge Verification or Fault Indicator Display	NR	REQ	NR	NR	NR	NR	NR	NR	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	NR
		Whole House Fan¹⁰	NR	NR	NR	NR	NR	NR	NR	NR	REQ	REQ	REQ	REQ	REQ	REQ	REQ	NR	NR
	Central System Air Handlers	Central Fan Integrated Ventilation System Fan Efficacy	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ
	Ducts¹²	Roof/Ceiling Options A & B	Duct Insulation	R-8	R-8	R-6	R-8	R-6	R-6	R-6	R-8	R-8	R-8	R-8	R-8	R-8	R-8	R-8	R-8
			§150.1(c)9A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Roof/Ceiling	Duct Insulation	R-6	R-6	R-6	R-6	R-6	R-6	R-6	R-6	R-6	R-6	R-6	R-6	R-6	R-6	R-6	R-6
§150.1(c)9B			REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ	REQ
Water Heating	All Buildings		System Shall meet Section 150.1(c)8																

Footnote requirements to TABLE 150.1-A:¹⁰

1. Install the specified R-value with no air space present between the roofing and the roof deck.
2. Install the specified R-value with an air space present between the roofing and the roof deck. Such as standard installation of concrete or clay tile.
3. R-values shown for below roof deck insulation are for wood-frame construction with insulation installed between the framing members.
4. Assembly U-factors can be met with cavity insulation alone or with continuous insulation alone, or with both cavity and continuous insulation that results in an assembly U-factor equal to or less than the U-factor shown. Use Reference Joint Appendices JA4 Table 4.3.1, 4.3.1(a), or Table 4.3.4 to determine alternative insulation products to meet the required maximum U-factor.
5. Mass wall has a thermal heat capacity greater than or equal to 7.0 Btu/h-ft². "Interior" denotes insulation installed on the inside surface of the wall.
6. Mass wall has a thermal heat capacity greater than or equal to 7.0 Btu/h-ft². "Exterior" denotes insulation installed on the exterior surface of the wall.
7. Below grade "interior" denotes insulation installed on the inside surface of the wall.
8. Below grade "exterior" denotes insulation installed on the outside surface of the wall.
9. HSPF means "heating seasonal performance factor."
10. When whole house fans are required (REQ), only those whole house fans that are listed in the Appliance Efficiency Directory may be installed. Compliance requires installation of one or more WHFs whose total airflow CFM is capable of meeting or exceeding a minimum 1.5 cfm/square foot of conditioned floor area as specified by Section 150.1(c)12.
11. A supplemental heating unit may be installed in a space served directly or indirectly by a primary heating system, provided that the unit thermal capacity does not exceed 2 kilowatts or 7,000 Btu/hr and is controlled by a timelimiting device not exceeding 30 minutes.
12. For duct and air handler location: REQ denotes location in conditioned space. When the table indicates ducts and air handlers are in conditioned space, a HERS verification is required as specified by Reference Residential Appendix RA3.1.4.3.8.

¹⁰ Single family buildings are modeled with Option B and multifamily buildings are modeled with Option C.

Appendix B.1 – Single Family Package Summaries

Table 16: Single Family Tier Packages

Climate Zone	QII	ACH50	Window U-value / SHGC	Door U-value	HPA	Furnace AFUE	AC SEER/EER	AH Fan W/cfm	DHW EF	HW Pipe Insul.	PV Credit Size (kW)	T-24 Comp. Margin
Tier 1, Envelope Cases												
CZ1	Y		.30/.50	0.20						Y		16.1%
CZ2	Y	3	.30/.23	0.20				0.30		Y		15.8%
CZ3	Y		.30/.50	0.20						Y		15.5%
CZ4	Y		.30/.23					0.30				12.0%
CZ5	Y		.30/.50							Y		15.2%
CZ6	Y											8.7%
CZ7	Y											7.0%
CZ8	Y											8.9%
CZ9	Y		.30/.23					0.30				17.2%
CZ10	Y		.30/.23					0.30				17.2%
CZ11	Y		.30/.23					0.30				16.9%
CZ12	Y		.30/.23					0.30				16.4%
CZ13	Y		.30/.23					0.30				17.4%
CZ14	Y		.30/.23					0.30				16.4%
CZ15	Y							0.30				15.2%
CZ16	Y	3	.30/.23	0.20				0.30				15.8%
Tier 1, Equipment Cases												
CZ1	Y					0.92						19.3%
CZ2	Y					0.92						16.8%
CZ3	Y							0.94				15.3%
CZ4	Y					0.92		0.30				17.0%
CZ5	Y							0.94				16.9%
CZ6	Y							0.94		Y		15.5%
CZ7	Y							0.94				15.6%
CZ8	Y							0.30	0.94			17.4%
CZ9	Y					15/12.5	0.30					16.9%
CZ10	Y					15/12.5	0.30					16.6%
CZ11	Y					15/12.5	0.30					17.3%
CZ12	Y					15/12.5	0.30					16.0%
CZ13	Y					15/12.5	0.30					17.9%
CZ14	Y					15/12.5	0.30					17.1%
CZ15	Y						0.30					15.2%
CZ16	Y					0.92						17.6%

Climate Zone	QII	ACH50	Window U-value / SHGC	Door U-value	HPA	Furnace AFUE	AC SEER/EER	AH Fan W/cfm	DHW EF	HW Pipe Insul.	PV Credit Size (kW)	T-24 Comp. Margin
Tier 2, Cases with PV Credit												
CZ1	Y	3	.30/.50	0.20	Y					Y	2.1	32.2%
CZ2	Y		.30/.50	0.20	Y					Y	2.1	31.4%
CZ3	Y		.30/.50	0.20							2.0	21.8%
CZ4	Y		.30/.23								2.1	30.4%
CZ5	Y		.30/.50								2.0	22.0%
CZ6						N/A – No PV Credit						
CZ7						N/A – No PV Credit						
CZ8	Y										2.1	36.4%
CZ9	Y										2.0	35.0%
CZ10	Y										2.1	32.2%
CZ11	Y		.30/.23	0.20							2.2	31.2%
CZ12	Y										2.1	32.4%
CZ13	Y		.30/.23								2.2	31.3%
CZ14	Y							0.30			2.2	30.9%
CZ15	Y							0.30			2.2	32.2%
CZ16	Y	3	.30/.23	0.20				0.30			2.1	31.5%

Appendix B.2 – Multifamily Package Summaries

Table 17: Multifamily Tier 1 Packages

Climate Zone	QII	Window U-value / SHGC	Door U-value	Furnace AFUE	AC SEER/EER	AH Fan W/cfm	Refrigerant Charge	DHW EF	HW Comp. Dist.	PV Credit Size (kW)	T-24 Comp. Margin
Tier 1, Envelope Cases											
CZ1	Y	0.30/0.50	0.20			0.3			Y		16.5%
CZ2	Y										4.8%
CZ3	Y	0.30/0.50	0.20						Y		10.9%
CZ4	Y	0.30/0.23				0.3	Y				10.9%
CZ5	Y	0.30/0.50	0.20			0.3	Y		Y		10.2%
CZ6	Y	0.30/0.23	0.20			0.3			Y		11.7%
CZ7	Y	0.30/0.23	0.20			0.3	Y		Y		10.2%
CZ8	Y	0.30/0.23				0.3					10.5%
CZ9	Y	0.30/0.23				0.3					12.3%
CZ10	Y	0.30/0.23				0.3					10.1%
CZ11	Y	0.30/0.23	0.20			0.3					17.7%
CZ12	Y	0.30/0.23	0.20			0.3					17.1%
CZ13	Y	0.30/0.23	0.20			0.3					18.1%
CZ14	Y	0.30/0.23	0.20			0.3					17.8%
CZ15	Y	0.30/0.23	0.20			0.3					17.7%
CZ16	Y	0.30/0.23	0.20			0.3			Y		16.3%
Tier 1, Equipment Cases											
CZ1	Y	0.30/0.50						94	Y		16.7%
CZ2	Y			92				96			15.0%
CZ3	Y							94			12.4%
CZ4	Y			92				96	Y		16.3%
CZ5	Y							94			11.8%
CZ6	Y							94	Y		12.1%
CZ7	Y							96	Y		12.5%
CZ8	Y	0.30/0.23			16/13	0.3	Y				15.2%
CZ9	Y				16/13	0.3					15.7%
CZ10	Y				16/13	0.3					15.5%
CZ11	Y	0.30/0.23			15/12.5	0.3					16.5%
CZ12	Y	0.30/0.23			15/12.5	0.3					15.0%
CZ13	Y				15/12.5	0.3					15.4%
CZ14	Y				16/13	0.3					16.5%
CZ15	Y				16/13	0.3					20.4%
CZ16	Y	0.30/0.23		92		0.3					15.7%

Climate Zone	QII	Window U-value / SHGC	Door U-value	Furnace AFUE	AC SEER/EER	AH Fan W/cfm	Refrigerant Charge	DHW EF	HW Comp. Dist.	PV Credit Size (kW)	T-24 Comp. Margin
Tier 2, Cases with PV Credit											
CZ1	Y	0.30/0.50	0.20			0.3			Y	1.0	21.0%
CZ2	Y	0.30/0.23	0.20			0.3			Y	1.0	20.4%
CZ3	Y	0.30/0.50	0.20			0.3			Y	1.0	15.3%
CZ4	Y	0.30/0.23	0.20			0.3			Y	1.0	26.9%
CZ5	Y	0.30/0.50	0.20			0.3			Y	1.0	12.4%
CZ6					N/A – No PV Credit						
CZ7					N/A – No PV Credit						
CZ8	Y	0.30/0.23	0.20			0.3			Y	1.0	21.0%
CZ9	Y	0.30/0.23	0.20			0.3				1.0	26.8%
CZ10	Y	0.30/0.23	0.20			0.3				1.0	26.2%
CZ11	Y	0.30/0.23	0.20			0.3				1.0	26.5%
CZ12	Y	0.30/0.23	0.20			0.3				1.0	26.5%
CZ13	Y	0.30/0.23	0.20			0.3				1.0	27.3%
CZ14	Y	0.30/0.23	0.20			0.3				1.0	26.0%
CZ15	Y	0.30/0.23	0.20			0.3				1.0	25.4%
CZ16	Y	0.30/0.23	0.20							1.0	25.7%

Appendix C - Utility Rate Tariffs

Following are the PG&E electricity, both standard and time-of-use, and natural gas tariffs applied in this study. The PG&E monthly gas rate in \$/therm was applied on a monthly basis for the 12-month period ending March 2016.



Pacific Gas and Electric Company
San Francisco, California
U 39

Cancelling Revised Revised Cal. P.U.C. Sheet No. 36706-E
Cal. P.U.C. Sheet No. 36470-E

ELECTRIC SCHEDULE E-1 Sheet 1

RESIDENTIAL SERVICES

APPLICABILITY: This schedule is applicable to single-phase and polyphase residential service in single-family dwellings and in flats and apartments separately metered by PG&E; to single-phase and polyphase service in common areas in a multifamily complex (see Special Condition 8); and to all single-phase and polyphase farm service on the premises operated by the person whose residence is supplied through the same meter.

The provisions of Schedule S—Standby Service Special Conditions 1 through 6 shall also apply to customers whose premises are regularly supplied in part (but not in whole) by electric energy from a nonutility source of supply. These customers will pay monthly reservation charges as specified under Section 1 of Schedule S, in addition to all applicable Schedule E-1 charges. See Special Conditions 11 and 12 of this rate schedule for exemptions to standby charges.

TERRITORY: This rate schedule applies everywhere PG&E provides electric service.

RATES: Total bundled service charges are calculated using the total rates below. Customers on this schedule are subject to the delivery minimum bill amount shown below applied to the delivery portion of the bill (i.e. to all rate components other than the generation rate). In addition, total bundled charges will include applicable generation charges per kWh for all kWh usage.

Customers receiving a medical baseline allowance shall pay for all usage in excess of 200 percent of baseline at a rate \$0.04000 per kWh less than the applicable rate for usage in excess of 200 percent of baseline. No portion of the rates paid by customers that receive a Medical Baseline allowance shall be used to pay the DWR Bond charge. For these customers, the Conservation Incentive Adjustment is calculated residually based on the total rate less the sum of: Transmission, Transmission Rate Adjustments, Reliability Services, Distribution, Generation, Public Purpose Programs, Nuclear Decommissioning, Competition Transition Charges (CTC), New System Generation Charges,¹ and Energy Cost Recovery Amount. Customers receiving a medical baseline allowance shall also receive a 50 percent discount on the delivery minimum bill amount shown below.

Direct Access (DA) and Community Choice Aggregation (CCA) charges shall be calculated in accordance with the paragraph in this rate schedule titled Billing.

TOTAL RATES

Total Energy Rates (\$ per kWh)	
Baseline Usage	\$0.18212
101% - 130% of Baseline	\$0.24090 (I)
131% - 200% of Baseline	\$0.24090 (R)
201% - 300% of Baseline	\$0.39999 (I)
Over 300% of Baseline	\$0.39999 (I)
Delivery Minimum Bill Amount (\$ per meter per day)	\$0.32854
California Climate Credit (per household, per semi-annual payment occurring in the April and October bill cycles)	(\$28.14)

¹ Per Decision 11-12-031, New System Generation Charges are effective 1/1/2012.

(Continued)

Advice Letter No:	4810-E-A	Issued by	Date Filed	May 31, 2016
Decision No.	15-07-001 and E-4782	Steven Malnight	Effective	June 1, 2016
		Senior Vice President	Resolution No.	
		Regulatory Affairs		

1C8



Pacific Gas and Electric Company
 San Francisco, California
 U 39

Cancelling Revised Cal. P.U.C. Sheet No. 36713-E
 Revised Cal. P.U.C. Sheet No. 36500-E

ELECTRIC SCHEDULE E-TOU
RESIDENTIAL TIME-OF-USE SERVICE

Sheet 2

RATES
 (Cont'd.):

OPTION A TOTAL RATES

Total Energy Rates (\$ per kWh)	PEAK		OFF-PEAK	
<i>Summer</i>				
Total Usage	\$0.40327	(I)	\$0.32769	(I)
Baseline Credit (Applied to Baseline Usage Only)	(\$0.11709)	(R)	(\$0.11709)	(R)
<i>Winter</i>				
Total Usage	\$0.28530	(I)	\$0.27100	(I)
Baseline Credit (Applied to Baseline Usage Only)	(\$0.11709)	(R)	(\$0.11709)	(R)
Delivery Minimum Bill Amount (\$ per meter per day)	\$0.32854			
California Climate Credit (per household, per semi-annual payment occurring in the April and October bill cycles)	(\$28.14)			

Total bundled service charges shown on customer's bills are unbundled according to the component rates shown below. Where the delivery minimum bill amount applies, the customer's bill will equal the sum of (1) the delivery minimum bill amount plus (2) for bundled service, the generation rate times the number of kWh used. For revenue accounting purposes, the revenues from the delivery minimum bill amount will be assigned to the Transmission, Transmission Rate Adjustments, Reliability Services, Public Purpose Programs, Nuclear Decommissioning, Competition Transition Charges, Energy Cost Recovery Amount, DWR Bond, and New System Generation Charges¹ based on kWh usage times the corresponding unbundled rate component per kWh, with any residual revenue assigned to Distribution.*

¹ Per Decision 11-12-031, New System Generation Charges are effective 1/1/2012.
 * This same assignment of revenues applies to direct access and community choice aggregation customers.

(Continued)

Advice Letter No: 4810-E-A
 Decision No. 15-07-001 and E-4782

Issued by
Steven Malnight
 Senior Vice President
 Regulatory Affairs

Date Filed May 31, 2016
 Effective June 1, 2016
 Resolution No. _____

2C9



Pacific Gas and Electric Company
 San Francisco, California
 U 39

Revised
 Revised
 Cal. P.U.C. Sheet No. 32682-G
 Cal. P.U.C. Sheet No. 32620-G

**GAS SCHEDULE G-1
 RESIDENTIAL SERVICE**

Sheet 1

APPLICABILITY: This rate schedule* applies to natural gas service to Core End-Use Customers on PG&E's Transmission and/or Distribution Systems. To qualify, service must be to individually-metered single family premises for residential use, including those in a multifamily complex, and to separately-metered common areas in a multifamily complex where Schedules GM, GS, or GT are not applicable. Common area accounts that are separately metered by PG&E have an option of switching to a core commercial rate schedule. Common area accounts are those accounts that provide gas service to common use areas as defined in Rule 1.

TERRITORY: Schedule G-1 applies everywhere within PG&E's natural gas Service Territory.

RATES: Customers on this schedule pay a Procurement Charge and a Transportation Charge, per meter, as shown below. The Transportation Charge will be no less than the Minimum Transportation Charge, as follows:

<u>Minimum Transportation Charge:**</u>		<u>Per Day</u>	
		\$0.09863	
		<u>Per Therm</u>	
		<u>Baseline</u>	<u>Excess</u>
<u>Procurement:</u>	\$0.20960	(R)	\$0.20960 (R)
<u>Transportation Charge:</u>	\$0.81592		\$1.30547
Total:	\$1.02552	(R)	\$1.51507 (R)

Public Purpose Program Surcharge:

Customers served under this schedule are subject to a gas Public Purpose Program (PPP) Surcharge under Schedule G-PPPS.

See Preliminary Statement, Part B for the Default Tariff Rate Components.

The Procurement Charge on this schedule is equivalent to the rate shown on informational Schedule G-CP—Gas Procurement Service to Core End-Use Customers.

BASELINE QUANTITIES: The delivered quantities of gas shown below are billed at the rates for baseline use.

Baseline Territories***	BASELINE QUANTITIES (Therms Per Day Per Dwelling Unit)	
	Summer Effective Apr. 1, 2016	Winter Effective Nov. 1, 2015
P	0.46	2.15
Q	0.69	1.98
R	0.46	1.79
S	0.46	1.92
T	0.69	1.79
V	0.69	1.79
W	0.46	1.69
X	0.59	1.98
Y	0.85	2.55

* PG&E's gas tariffs are available online at www.pge.com.
 ** The Minimum Transportation charge does not apply to submetered tenants of master-metered customers served under gas rate Schedules GS and GT.
 *** The applicable baseline territory is described in Preliminary Statement, Part A.

(Continued)

Advice Letter No:	3715-G	Issued by	_____	Date Filed	May 24, 2016
Decision No.	97-10-065 & 98-07-025	Steven Malnight	_____	Effective	June 1, 2016
		Senior Vice President	_____	Resolution No.	_____
		Regulatory Affairs	_____		

1C6

Following are the SCE electricity tariffs, both standard and time-of-use, and SoCalGas natural gas tariffs applied in this study.



Southern California Edison
Rosemead, California (U 338-E)

Revised Cal. PUC Sheet No. 59026-E
Cancelling Revised Cal. PUC Sheet No. 58237-E

		Schedule D		Sheet 2	
		DOMESTIC SERVICE			
		(Continued)			
<u>RATES</u>					
		Delivery Service	Generation ²		
		Total ¹	UG ^{3*}	DWRBC ²	
Energy Charge- \$/kWh/Meter/Day					
Baseline Service					
	Summer	0.06799 (I)	0.06919 (I)	(0.00022)	
	Winter	0.06799 (I)	0.06919 (I)	(0.00022)	
Nonbaseline Service*					
101% - 200% of Baseline - Summer		0.15997 (I)	0.06919 (I)	(0.00022)	
	Winter	0.15997 (I)	0.06919 (I)	(0.00022)	
Over 200% of Baseline - Summer		0.22305 (R)	0.06919 (I)	(0.00022)	
	Winter	0.22305 (R)	0.06919 (I)	(0.00022)	
Basic Charge - \$/Meter/Day					
	Single-Family Accommodation	0.031			
	Multi-Family Accommodation	0.024			
Minimum Charge** - \$/Meter/Day					
	Single-Family Accommodation	0.329			
	Multi-Family Accommodation	0.329			
Minimum Charge (Medical Baseline)** - \$/Meter/Day					
	Single-Family Accommodation	0.164			
	Multi-Family Accommodation	0.164			
California Climate Credit ⁴		(35.00)			
Peak Time Rebate - \$/kWh				(0.75)	
Peak Time Rebate enabling technology - \$/kWh				(1.25)	

* Nonbaseline Service includes all kWh in excess of applicable Baseline allocations as described in Preliminary Statement, Part H, Baseline Service.
 ** The Minimum Charge is applicable when the Delivery Service Energy Charge, plus the applicable Basic Charge is less than the Minimum Charge.
 *** The ongoing Competition Transition Charge (CTC) of \$(0.00015) per kWh is recovered in the UG component of Generation.
 1 Total = Total Delivery Service rates are applicable to Bundled Service, Direct Access (DA) and Community Choice Aggregation Service (CCA Service) Customers, except DA and CCA Service Customers are not subject to the DWRBC rate component of this Schedule but instead pay the DWRBC as provided by Schedule DA-CRS or Schedule CCA-CRS.
 2 Generation = The Generation rates are applicable only to Bundled Service Customers.
 3 DWRBC = Department of Water Resources (DWR) Energy Credit - For more information on the DWR Energy Credit, see the Billing Calculation Special Condition of this Schedule.
 4 Applied on an equal basis, per household, semi-annually. See the Special Conditions of this Schedule for more information.

(Continued)

(To be inserted by utility)

Advice 3401-E
Decision 16-03-030

2011

Issued by

R. O. Nichols
Senior Vice President

(To be inserted by Cal. PUC)

Date Filed May 2, 2016
Effective Jun 1, 2016
Resolution _____



Southern California Edison
Rosemead, California (U 338-E)

Revised Cal. PUC Sheet No. 59059-E
Cancelling Revised Cal. PUC Sheet No. 58249-E

Schedule TOU-D-T
TIME-OF-USE TIERED DOMESTIC

Sheet 2

(Continued)

RATES



	Delivery Service Total ¹	Generation ²	
		UG ³	DWREC ³
Energy Charge - \$/kWh/Meter/Day			
Summer Season - On-Peak			
Level I (up to 130% of Baseline)	0.10523 (I)	0.21660 (R)	(0.00022)
Level II (More than 130% of Baseline)	0.18352 (R)	0.21660 (R)	(0.00022)
Summer Season - Off-Peak			
Level I (up to 130% of Baseline)	0.10523 (I)	0.05311 (I)	(0.00022)
Level II (More than 130% of Baseline)	0.18352 (R)	0.05311 (I)	(0.00022)
Winter Season - On-Peak			
Level I (up to 130% of Baseline)	0.10523 (I)	0.09660 (R)	(0.00022)
Level II (More than 130% of Baseline)	0.18352 (R)	0.09660 (R)	(0.00022)
Winter Season - Off-Peak			
Level I (up to 130% of Baseline)	0.10523 (I)	0.04749 (I)	(0.00022)
Level II (More than 130% of Baseline)	0.18352 (R)	0.04749 (I)	(0.00022)
Basic Charge - \$/Meter/Day			
Single-Family Accommodation	0.031		
Multi-Family Accommodation	0.024		
Minimum Charge* - \$/Meter/Day			
Single-Family Accommodation	0.329		
Multi-Family Accommodation	0.329		
Minimum Charge (Medical Baseline)** - \$/Meter/Day			
Single-Family Accommodation	0.164		
Multi-Family Accommodation	0.164		
California Climate Credit ⁴	(36.00)		
California Alternate Rates for Energy Discount - %	100.00*		
Peak Time Rebate - \$/kWh		(0.75)	
Peak Time Rebate enabling technology - \$/kWh		(1.25)	

* The Minimum Charge is applicable when the Delivery Service Energy Charge, plus the applicable Basic Charge is less than the Minimum Charge.

** Represents 100% of the discount percentage as shown in the applicable Special Condition of this Schedule.

*** The ongoing Competition Transition Charge (CTC) of \$(0.00015) per kWh is recovered in the UG component of Generation.

1 Total = Total Delivery Service rates are applicable to Bundled Service, Direct Access (DA) and Community Choice Aggregation Service (CCA Service) Customers, except DA and CCA Service Customers are not subject to the DWRBC rate component of this Schedule but instead pay the DWRBC as provided by Schedule DA-CRS or Schedule CCA-CRS

2 Generation = The Gen rates are applicable only to Bundled Service Customers.

3 DWREC = Department of Water Resources (DWR) Energy Credit - For more information on the DWR Energy Credit, see the Billing Calculation Special Condition of this Schedule.

4 Applied on an equal basis, per household, semi-annually. See the Special Conditions of this Schedule for more information.

(Continued)

(To be inserted by utility)

Advice 3401-E
Decision 16-03-030

Issued by

R. O. Nichols
Senior Vice President

(To be inserted by Cal. PUC)

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Resolution _____

2016

SOUTHERN CALIFORNIA GAS COMPANY Revised CAL. P.U.C. SHEET NO. 52782-G
 LOS ANGELES, CALIFORNIA CANCELING Revised CAL. P.U.C. SHEET NO. 52751-G

Schedule No. GR Sheet 1
RESIDENTIAL SERVICE
 (Includes GR, GR-C and GT-R Rates)

APPLICABILITY

The GR rate is applicable to natural gas procurement service to individually metered residential customers.

The GR-C, cross-over rate, is a core procurement option for individually metered residential core transportation customers with annual consumption over 50,000 therms, as set forth in Special Condition 10.

The GT-R rate is applicable to Core Aggregation Transportation (CAT) service to individually metered residential customers, as set forth in Special Condition 11.

The California Alternate Rates for Energy (CARE) discount of 20%, reflected as a separate line item on the bill, is applicable to income-qualified households that meet the requirements for the CARE program as set forth in Schedule No. G-CARE.

TERRITORY

Applicable throughout the service territory.

RATES

	<u>GR</u>	<u>GR-C</u>	<u>GT-R</u>
<u>Customer Charge</u> , per meter per day:	16.438¢	16.438¢	16.438¢

For "Space Heating Only" customers, a daily Customer Charge applies during the winter period from November 1 through April 30 ^{1/} :	33.149¢	33.149¢	33.149¢
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Baseline Rate , per therm (baseline usage defined in Special Conditions 3 and 4):				
Procurement Charge: ^{2/}	34.536¢	34.536¢	N/A	I
<u>Transmission Charge</u> : ^{3/}	<u>56.280¢</u>	<u>56.280¢</u>	<u>55.758¢</u>	I
Total Baseline Charge:	90.816¢	90.816¢	55.758¢	

Non-Baseline Rate , per therm (usage in excess of baseline usage):				
Procurement Charge: ^{2/}	34.536¢	34.536¢	N/A	I
<u>Transmission Charge</u> : ^{3/}	<u>82.280¢</u>	<u>82.280¢</u>	<u>81.758¢</u>	I
Total Non-Baseline Charge:	116.816¢	116.816¢	81.758¢	I

^{1/} For the summer period beginning May 1 through October 31, with some exceptions, usage will be accumulated to at least 20 Ccf (100 cubic feet) before billing.

(Footnotes continue next page.)

(Continued)

(TO BE INSERTED BY UTILITY)

ADVICE LETTER NO. 4989

DECISION NO.

106

ISSUED BY

Dan Skopec

Vice President

Regulatory Affairs


(TO BE INSERTED BY CAL. PUC)

DATE FILED Jul 7, 2016

EFFECTIVE Jul 10, 2016

RESOLUTION NO. G-3351

Following are the SDG&E electricity, both standard and time-of-use, and natural gas tariffs applied in this study.



San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 27650-E

Canceling Revised Cal. P.U.C. Sheet No. 26948-E

Sheet 1

SCHEDULE DR

RESIDENTIAL SERVICE

(Includes Rates for DR-LI)

APPLICABILITY

Applicable to domestic service for lighting, heating, cooking, water heating, and power, or combination thereof, in single family dwellings, flats, and apartments, separately metered by the utility; to service used in common for residential purposes by tenants in multi-family dwellings under Special Condition 8; to any approved combination of residential and nonresidential service on the same meter; and to incidental farm service under Special Condition 7.

This schedule is also applicable to customers qualifying for the California Alternate Rates for Energy (CARE) Program and/or Medical Baseline, residing in single-family accommodations, separately metered by the Utility, and may include Non-profit Group Living Facilities and Qualified Agricultural Employee Housing Facilities, if such facilities qualify to receive service under the terms and conditions of Schedule E-CARE. The rates for CARE and Medical Baseline customers are identified in the rates tables below as DR-LI and DR-MB rates, respectively.

Customers on this schedule may also qualify for a semi-annual California Climate Credit \$(17.44) per Schedule GHG-ARR.

TERRITORY

Within the entire territory served by the Utility.

RATES

Total Rates:

Description - DR Rates	UDC Total Rate	DWR-BC Rate	EECC Rate + DWR Credit	Total Rate
Summer:				
Baseline Energy (\$/kWh)	0.05480 I	0.00539	0.12965	0.18984 I
Above 130% of Baseline	0.25645 R	0.00539	0.12965	0.39149 R
Winter:				
Baseline Energy (\$/kWh)	0.10256 I	0.00539	0.06604	0.17389 I
Above 130% of Baseline	0.26737 R	0.00539	0.06604	0.35500 R
Minimum Bill (\$/day)	0.329			0.329

Description -DR-LI Rates	UDC Total Rate	DWR-BC Rate	EECC Rate + DWR Credit	Total Rate
Summer - CARE Rates:				
Baseline Energy (\$/kWh)	0.05225 I	0.00000	0.12965	0.18190 I
Above 130% of Baseline	0.25390 R	0.00000	0.12965	0.38355 R
Winter - CARE Rates:				
Baseline Energy (\$/kWh)	0.10001 I	0.00000	0.06604	0.16605 I
Above 130% of Baseline	0.26482 R	0.00000	0.06604	0.35086 R
Minimum Bill (\$/day)	0.164			0.164

(Continued)

1C10

Advice Ltr. No. 2861-E-A

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Dan Skopec
Vice President
Regulatory Affairs

Date Filed Jun 29, 2016

Effective Jul 1, 2016

Resolution No. E-4787



San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 26962-E

Canceling Revised Cal. P.U.C. Sheet No. 26908-E

SCHEDULE DR-SES

Sheet 1

DOMESTIC TIME-OF-USE FOR HOUSEHOLDS WITH A SOLAR ENERGY SYSTEM

APPLICABILITY

Service under this schedule is available on a voluntary basis for individually metered residential customers with Solar Energy Systems. Service is limited to individually metered residential customers with a Solar Energy System with domestic service for lighting, heating, cooking, water heating, and power, or combination thereof, in single family dwellings and flats. Qualifying California Alternative Rates for Energy (CARE) customers are eligible for service on this schedule, as further described under Special Condition 8 of this schedule.

Customers on this schedule may also qualify for a semi-annual California Climate Credit \$(17.44) per Schedule GHG-ARR.

TERRITORY

Within the entire territory served by the Utility.

RATES

Total Rates:

Description - DR-SES Rates	UDC Total Rate	DWR-BC Rate	EECC Rate + DWR Credit	Total Rate
Energy Charges (\$/kWh)				
On-Peak - Summer	0.12635 I	0.00539 I	0.33023 R	0.46397 R
Semi-Peak - Summer	0.12635 I	0.00539 I	0.09530 R	0.22904 R
Off-Peak - Summer	0.12635 I	0.00539 I	0.07332 R	0.20706 R
Semi-Peak - Winter	0.12635 I	0.00539 I	0.06159 R	0.21533 R
Off-Peak - Winter	0.12635 I	0.00539 I	0.06826 R	0.20200 R
Minimum Bill (\$/day)	0.329			0.329

- (1) Total Rates consist of UDC, Schedule DWR-BC (Department of Water Resources Bond Charge), and Schedule EECC (Electric Energy Commodity Cost) rates, with the EECC rates reflecting a DWR Credit of \$(0.00021) that customers receive on their monthly bills.
- (2) Total Rates presented are for customers that receive commodity supply and delivery service from Utility. Differences in total rates paid by Direct Access (DA) and Community Choice Aggregation (CCA) customers are identified in Schedule DA-CRS and CCA-CRS, respectively.
- (3) DWR-BC charges do not apply to CARE or Medical Baseline customers.

UDC Rates

Description-DR-SES	Transm	Distr	PPP	ND	CTC	LGC	RS	TRAC	UDC Total
Energy Charges (\$/kWh)									
On-Peak - Summer	0.02943 I	0.05367 R	0.01241 I	0.00052 I	0.00180 I	0.00039 I	0.00013 R	0.00000 I	0.12635 I
Semi-Peak - Summer	0.02943 I	0.05367 R	0.01241 I	0.00052 I	0.00180 I	0.00039 I	0.00013 R	0.00000 I	0.12635 I
Off-Peak - Summer	0.02943 I	0.05367 R	0.01241 I	0.00052 I	0.00180 I	0.00039 I	0.00013 R	0.00000 I	0.12635 I
Semi-Peak - Winter	0.02943 I	0.05367 R	0.01241 I	0.00052 I	0.00180 I	0.00039 I	0.00013 R	0.00000 I	0.12635 I
Off-Peak - Winter	0.02943 I	0.05367 R	0.01241 I	0.00052 I	0.00180 I	0.00039 I	0.00013 R	0.00000 I	0.12635 I
Minimum Bill (\$/day)		0.329							0.329

(Continued)

109

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Dan Skopec
Vice President
Regulatory Affairs

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Resolution No.



San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 21921-G

Canceling Revised Cal. P.U.C. Sheet No. 21908-G

SCHEDULE GR

Sheet 1

RESIDENTIAL NATURAL GAS SERVICE
(Includes Rates for GR, GR-C, GTC/GTCA)

APPLICABILITY

The GR rate is applicable to natural gas procurement service for individually metered residential customers.

The GR-C, cross-over rate, is a core procurement option for individually metered residential core transportation customers with annual consumption over 50,000 therms, as set forth in Special Condition 10.

The GTC/GTCA rate is applicable to intrastate gas transportation-only services to individually metered residential customers, as set forth in Special Condition 11.

Customers taking service under this schedule may be eligible for a 20% California Alternate Rate for Energy (CARE) program discount, reflected as a separate line item on the bill, if they qualify to receive service under the terms and conditions of Schedule G-CARE.

TERRITORY

Within the entire territory served natural gas by the utility.

RATES

	<u>GR</u>	<u>GR-C</u>	<u>GTC/GTCA</u> ^{1/}
Baseline Rate , per therm (baseline usage defined in Special Conditions 3 and 4):			
Procurement Charge: ^{2/}	\$0.34561	\$0.34561 I	N/A
Transmission Charge:	\$0.90805	\$0.90805	\$0.90805
Total Baseline Charge:	\$1.25366	\$1.25366 I	\$0.90805
Non-Baseline Rate , per therm (usage in excess of baseline usage):			
Procurement Charge: ^{2/}	\$0.34561	\$0.34561 I	N/A
Transmission Charge:	\$1.08354	\$1.08354	\$1.08354
Total Non-Baseline Charge:	\$1.42915	\$1.42915 I	\$1.08354

^{1/} The rates for core transportation-only customers, with the exception of customers taking service under Schedule GT-NGV, include any FERC Settlement Proceeds Memorandum Account (FSPMA) credit adjustments.

^{2/} This charge is applicable to Utility Procurement Customers and includes the GPC and GPC-A Procurement Charges shown in Schedule GPC which are subject to change monthly as set forth in Special Condition 7.

(Continued)

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Advice Ltr. No. 2489-G
Decision No. _____

Issued by
Dan Skopec
Vice President
Regulatory Affairs

Date Filed Jul 7, 2016
Effective Jul 10, 2016
Resolution No. _____

(f) **Ballasts for residential recessed luminaires.** To qualify as high efficacy for compliance with Section 150.0(k), any compact fluorescent lamp ballast in a residential recessed luminaire shall meet all of the following conditions:

1. Be rated by the ballast manufacturer to have a minimum rated life of 30,000 hours when operated at or below a specified maximum case temperature. This maximum ballast case temperature specified by the ballast manufacturer shall not be exceeded when tested in accordance to UL 1598 Section 19.15; and
2. Have a ballast factor of not less than 0.90 for nondimming ballasts and a ballast factor of not less than 0.85 for dimming ballasts.

SECTION 110.10
MANDATORY REQUIREMENTS
FOR SOLAR READY BUILDINGS

(a) **Covered occupancies.**

1. **Single-family residences.** Single-family residences located in subdivisions with ten or more single-family residences and where the application for a tentative subdivision map for the residences has been deemed complete by the enforcement agency shall comply with the requirements of Sections 110.10(b) through 110.10(e)
2. **Low-rise multifamily buildings.** Low-rise multifamily buildings shall comply with the requirements of Sections 110.10(b) through 110.10(d).
3. **Hotel/motel occupancies and high-rise multifamily buildings.** Hotel/motel occupancies and high-rise multifamily buildings with ten habitable stories or fewer shall comply with the requirements of Sections 110.10(b) through 110.10(d).
4. **All other nonresidential buildings.** All other nonresidential buildings with three habitable stories or fewer shall comply with the requirements of Sections 110.10(b) through 110.10(d).

(b) **Solar zone.**

1. **Minimum area.** The solar zone shall have a minimum total area as described below. The solar zone shall comply with access, pathway, smoke ventilation and spacing requirements as specified in Title 24, Part 9 or other Parts of Title 24 or in any requirements adopted by a local jurisdiction. The solar zone total area shall be comprised of areas that have no dimension less than five feet and are no less than 80 square feet each for buildings with roof areas less than or equal to 10,000 square feet or no less than 160 square feet each for buildings with roof areas greater than 10,000 square feet.

- A. **Single-family residences.** The solar zone shall be located on the roof or overhang of the building and have a total area no less than 250 square feet.

Exception 1 to Section 110.10(b)1A: Single-family residences with a permanently installed solar electric system having a nameplate DC power rating, measured under Standard Test Conditions, of no less than 1000 watts.

Exception 2 to Section 110.10(b)1A: Single-family residences with a permanently installed domestic solar water-heating system meeting the installation criteria specified in the Reference Residential Appendix RA4 and with a minimum solar savings fraction of 0.50.

Exception 3 to Section 110.10(b)1A: Single-family residences with three habitable stories or more and with a total floor area less than or equal to 2000 square feet and having a solar zone total area no less than 150 square feet.

Exception 4 to Section 110.10(b)1A: Single-family residences located in climate zones 8–14 and the Wildland-Urban Interface Fire Area as defined in Title 24, Part 2 and having a whole house fan and having a solar zone total area no less than 150 square feet.

Exception 5 to Section 110.10(b)1A: Buildings with a designated solar zone area that is no less than 50 percent of the potential solar zone area. The potential solar zone area is the total area of any low-sloped roofs where the annual solar access is 70 percent or greater and any steep-sloped roofs oriented between 110 degrees and 270 degrees of true north where the annual solar access is 70 percent or greater. Solar access is the ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.

Exception 6 to Section 110.10(b)1A: Single-family residences having a solar zone total area no less than 150 square feet and where all thermostats comply with Reference Joint Appendix JA5 and are capable of receiving and responding to Demand Response Signals prior to granting of an occupancy permit by the enforcing agency.

Exception 7 to Section 110.10(b)1A: Single-family residences meeting the following conditions:

- A. All thermostats comply with Reference Joint Appendix JA5 and are capable of receiving and responding to Demand Response Signals prior to granting of an occupancy permit by the enforcing agency.
- B. Comply with one of the following measures:
 - i. Install a dishwasher that meets or exceeds the ENERGY STAR® Program requirements with either a refrigerator that meets or exceeds the ENERGY STAR Program requirements or a whole house fan driven by an electronically commutated motor; or
 - ii. Install a home automation system capable of, at a minimum, controlling

the appliances and lighting of the dwelling and responding to demand response signals; or

- iii. Install alternative plumbing piping to permit the discharge from the clothes washer and all showers and bathtubs to be used for an irrigation system in compliance with the *California Plumbing Code* and any applicable local ordinances; or
- iv. Install a rainwater catchment system designed to comply with the *California Plumbing Code* and any applicable local ordinances, and that uses rainwater flowing from at least 65 percent of the available roof area.

B. Low-rise and high-rise multifamily buildings, hotel/motel occupancies and nonresidential buildings. The solar zone shall be located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building or on covered parking installed with the building project and have a total area no less than 15 percent of the total roof area of the building excluding any skylight area.

Exception 1 to Section 110.10(b)1B: Buildings with a permanently installed solar electric system having a nameplate DC power rating, measured under Standard Test Conditions, of no less than one watt per square foot of roof area.

Exception 2 to Section 110.10(b)1B: Buildings with a permanently installed domestic solar water-heating system complying with Section 150.1(c)8Ciii.

Exception 3 to Section 110.10(b)1B: Buildings with a designated solar zone area that is no less than 50 percent of the potential solar zone area. The potential solar zone area is the total area of any low-sloped roofs where the annual solar access is 70 percent or greater and any steep-sloped roofs oriented between 110 degrees and 270 degrees of true north where the annual solar access is 70 percent or greater. Solar access is the ratio of solar insolation including shade to the solar insolation without shade. Shading from obstructions located on the roof or any other part of the building shall not be included in the determination of annual solar access.

Exception 4 to Section 110.10(b)1B: Low-rise and high-rise multifamily buildings meeting the following conditions:

- A. All thermostats in each dwelling unit comply with Reference Joint Appendix JA5 and are capable of receiving and responding to Demand Response Signals prior to granting

of an occupancy permit by the enforcing agency.

- B. In each dwelling unit, comply with one of the following measures:
 - i. Install a dishwasher that meets or exceeds the ENERGY STAR Program requirements with either a refrigerator that meets or exceeds the ENERGY STAR Program requirements or a whole house fan driven by an electronically commutated motor; or
 - ii. Install a home automation system capable of, at a minimum, controlling the appliances and lighting of the dwelling and responding to demand response signals; or
 - iii. Install alternative plumbing piping to permit the discharge from the clothes washer and all showers and bathtubs to be used for an irrigation system in compliance with the *California Plumbing Code* and any applicable local ordinances; or
 - iv. Install a rainwater catchment system designed to comply with the *California Plumbing Code* and any applicable local ordinances, and that uses rainwater flowing from at least 65 percent of the available roof area.

Exception 5 to Section 110.10(b)1B: Buildings where the roof is designed and approved to be used for vehicular traffic or parking or for a heliport.

2. **Orientation.** All sections of the solar zone located on steep-sloped roofs shall be oriented between 110 degrees and 270 degrees of true north.

3. **Shading.**

A. No obstructions, including but not limited to, vents, chimneys, architectural features and roof mounted equipment, shall be located in the solar zone.

B. Any obstruction, located on the roof or any other part of the building that projects above a solar zone shall be located at least twice the distance, measured in the horizontal plane, of the height difference between the highest point of the obstruction and the horizontal projection of the nearest point of the solar zone, measured in the vertical plane.

Exception to Section 110.10(b)3: Any roof obstruction, located on the roof or any other part of the building, that is oriented north of all points on the solar zone.

4. **Structural design loads on construction documents.** For areas of the roof designated as solar zone, the structural design loads for roof dead load and roof live load

shall be clearly indicated on the construction documents.

Note: Section 110.10(b)4 does not require the inclusion of any collateral loads for future solar energy systems.

(c) Interconnection pathways.

1. The construction documents shall indicate a location for inverters and metering equipment and a pathway for routing of conduit from the solar zone to the point of interconnection with the electrical service. For single-family residences the point of interconnection will be the main service panel.
2. The construction documents shall indicate a pathway for routing of plumbing from the solar zone to the water-heating system.

(d) Documentation. A copy of the construction documents or a comparable document indicating the information from Sections 110.10(b) through 110.10(c) shall be provided to the occupant.

(e) Main electrical service panel.

1. The main electrical service panel shall have a minimum busbar rating of 200 amps.
2. The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation.
 - A. **Location.** The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.
 - B. **Marking.** The reserved space shall be permanently marked as “For Future Solar Electric.”

10. testing transformer;
11. transformer with tap range of 20 percent or more;
12. uninterruptible power supply transformer; or
13. welding transformer.

**SECTION 110.11
MANDATORY REQUIREMENTS FOR
ELECTRICAL POWER DISTRIBUTION SYSTEM**

Certification by Manufacturers. Any electrical power distribution system equipment listed in this section may be installed only if the manufacture has certified to the Commission that the equipment complies with all the applicable requirements of this section.

(a) Low-voltage dry-type distribution transformer shall be certified by the Manufacturer as required by the Title 20 Appliance Efficiency Regulations.

EXCEPTION to Section 110.11(a):

1. autotransformer;
2. drive (isolation) transformer;
3. grounding transformer;
4. machine-tool (control) transformer;
5. nonventilated transformer;
6. rectifier transformer;
7. regulating transformer;
8. sealed transformer;
9. special-impedance transformer;

RESIDENTIAL MANDATORY MEASURES

3. Compliance with a lawfully enacted storm water management ordinance.

4.106.3 Grading and paving. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 and 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the *California Electrical Code*, Article 625.

Exceptions: On a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:

1. Where there is no commercial power supply.
2. Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than \$400.00 per dwelling unit.

4.106.4.1 New one- and two-family dwellings and townhouses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

4.106.4.1.1 Identification. The service panel or subpanel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

4.106.4.2 New multifamily dwellings. Where 17 or more multifamily dwelling units are constructed on a building site, 3 percent of the total number of parking spaces pro-

vided for all types of parking facilities, but in no case less than one, shall be electric vehicle charging spaces (EV spaces) capable of supporting future EVSE. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

Note: Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

4.106.4.2.1 Electric vehicle charging space (EV space) locations. Construction documents shall indicate the location of proposed EV spaces. At least one EV space shall be located in common use areas and available for use by all residents.

When EV chargers are installed, EV spaces required by Section 4.106.4.2.2, Item 3, shall comply with at least one of the following options:

1. The EV space shall be located adjacent to an accessible parking space meeting the requirements of the *California Building Code*, Chapter 11A, to allow use of the EV charger from the accessible parking space.
2. The EV space shall be located on an accessible route, as defined in the *California Building Code*, Chapter 2, to the building.

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. The EV spaces shall be designed to comply with the following:

1. The minimum length of each EV space shall be 18 feet (5486 mm).
2. The minimum width of each EV space shall be 9 feet (2743 mm).
3. One in every 25 EV spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).
 - a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.3 Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV spaces. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

4.106.4.2.4 Multiple EV spaces required. Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. Raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

4.106.4.2.5 Identification. The service panel or sub-panel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as “EV CAPABLE” in accordance with the *California Electrical Code*.

Notes:

1. The California Department of Transportation adopts and publishes the “California Manual on Uniform Traffic Control Devices (California MUTCD)” to provide uniform standards and specifications for all official traffic con-

trol devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: <http://www.dot.ca.gov/trafficops/policy/13-01.pdf>

2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor’s Office of Planning and Research (OPR) published a “Zero-Emission Vehicle Community Readiness Guidebook” which provides helpful information for local governments, residents and businesses. Website: http://opr.ca.gov/docs/ZEV_Guidebook.pdf.

Applied Water for Turf Calculator

Summary

The Applied Water for Turf Calculator (Calculator) is a Microsoft Excel tool created in the fall of 2015 by Town staff with assistance from California Department of Water Resources (DWR) staff to demonstrate how much water is needed annually to irrigate turf based on square footage. The Calculator can determine roughly how much water will need to be stored in a rainwater catchment system or cistern in order to meet the annual watering needs of the turf. The following are the key inputs for the Calculator: (a) the evapotranspiration for applied water (ET_{aw}) for warm-season and cool-season turf, (b) the irrigated landscape area in square feet, (c) the conversion factor for converting acre-inches/acre/year to gallons/ft²/year, (d) and the irrigation efficiency for drip and spray irrigation.

The methodology used for calculating the annual water demands for turf is consistent with the methodology used by the DWR to estimate ET of applied water (ET_{aw}) for grass on a 4 x 4 km grid using the daily soil water balance program “California Simulation of Evapotranspiration of Applied Water” or “Cal-SIMETA_W.”¹

Cal-SIMETA_W is a new tool developed by the DWR and the University of California, Davis to estimate daily water balance in the crop root zone to determine crop evapotranspiration (ET_c) and evapotranspiration of applied water (ET_{aw}) for use in California Water Plan Update 2018, which is mandated by the state law to be updated every five years.¹ Cal-SIMETA_W was specifically designed to improve the department’s estimates of ET_c and ET_{aw} for agricultural crops and other surfaces which account for most evapotranspiration losses and water contributions from ground water seepage, precipitation, and irrigation. The model requires weather data, soils, crop coefficients, rooting depths, seepage etc., that influence crop water balance.¹ The model uses daily PRISM weather data, which are derived from monthly PRISM climate data and daily US National Climate Data Center climate station data to cover California on a 4 x 4 km grid spacing.¹

The model also uses SSURGO soil characteristic data and crop information with precipitation and ET_c data to generate hypothetical water balance irrigation schedules to determine ET_{aw}, which is the amount of applied irrigation water that contributes to crop evapotranspiration or ET_c assuming 100% application efficiency.¹ Therefore, ET_{aw} is the amount of diverted water needed to produce a crop or maintain an urban landscape.¹

¹ Orang, Morteza, “Assessment of Water Demand for Cool-season Grass in California Using CAL-SIMETA_W,” California Department of Water Resources, March 2015, p 2.



MEMORANDUM

TOWN OF PORTOLA VALLEY

TO: Mayor and Members of the Town Council

FROM: Howard Young, Public Works Director

DATE: October 26, 2016

RE: Ad-Hoc Committee recommendation for appropriate signage to address seasonal roadside parking on Portola Road at Windy Hill Preserve and authorize parking citation infraction amount.

RECOMMENDATION:

1. Review staff report and approve the recommendation of the Ad-Hoc Committee to erect two "Park off Pavement" signs along the east side of Portola Road at Windy Hill Preserve parking lot.
2. Authorize the Town Manager to assign an infraction amount of \$45 per parking citation.

BACKGROUND:

At the August 10, 2016 Town Council meeting, staff presented its report providing background concerning the Bicycle, Pedestrian & Traffic Safety (BPTS) Committees request and the Town Council directed formation of an Ad-Hoc Committee to study and recommend the appropriate action or signage to address seasonal roadside parking on Portola Road at Windy Hill Preserve. The Council directed the Town Manager to form an Ad-Hoc Committee including the BPTS Chair, ASCC Chair, and the Police Commissioner; with Vice Mayor Hughes, Public Works Director Young, and a liaison from the Sheriff's Department as advisory members. The Ad-Hoc Committee held public meetings on 9/27/16 and 10/12/16. Approved minutes of the 9/27/16 meeting are attached. Members of the Ad Hoc committee noted that overflow parking on Portola Road is not a major problem.

DISCUSSION:

At the Ad Hoc Committees 9/27/16 meeting, members reviewed the background history and discussed the potential appropriate signage to address the seasonal overflow parking from Windy Hill Preserve. The result of the meeting is summarized in the attached minutes. The main points are:

- Removal of 3 signs: Discontinue use of the 2 large temporary signs mounted on barricades every weekend. Removal of 1 large sign encouraging users to park at Town Center, a duplicate sign already exists in the Midpeninsula Regional Open Space District's (MROSD) parking lot. All other signs remain in place.

- Replace with 2 smaller signs: Install 2 “Park Off Pavement” signs in the affected areas. Signs are typically black and white, but brown and white colored signs are preferred and allowed under California code. A rendering is attached.
- Work with MROSD to work on the parking situation with respect to their conditional use permit.

Follow-up would include discussions with the ASCC, BPTS, Town Attorney’s office, Planning Director, engineering consultant, Caltrans, ABAG, and Sheriff’s Department.

As expressed by the Committee, the smaller brown and white signs are recommended due to the location being in the scenic corridor and are intended to be consistent with the Town’s rural character. The Town has authority pursuant to Portola Valley Municipal Code 10.40.040 to create parking restrictions in any area where the parking or stopping of any vehicle would constitute a traffic hazard or would endanger life or property. The Committee recommends that the Town proceed with a regulatory sign with the words “Park Off Pavement” to inform drivers that vehicles are to be parked on the dirt area adjacent to the road and not on the pavement along Portola Road. The California Manual of Uniform Traffic Control Devices (MUTCD) 2014 Edition provides specifications for the “Park Off Pavement” sign, which specifies the standard dimensions, and that black on white lettering shall be used. However, the California MUTCD 2014 Edition provides in Chapter 2B.02, and 2B.03, that regulatory signs may be developed with minor modifications so long as the essential appearance and characteristics of the State standard are maintained. The Committee, after speaking with legal counsel, believes that minor modifications which include listing the authority for the parking restriction pursuant to the municipal code and modifying the color and size of the sign are acceptable minor modifications. The Sheriff’s Department has also reviewed the proposed signage, and has indicated that they will enforce the signs. The Sheriff indicated that typical parking infraction collections range between \$45.00 - \$65.00 per citation; staff recommends \$45.00 per citation. Portola Valley Municipal Code 1.12.060 allows the Town to establish a collection amount for an infraction, however, the amount may not exceed \$100.00. Therefore, the Town is within its authority to proceed with the \$45.00 collection amount.

Reports from the Chair of the ASCC and BPTS Committee indicated that the sign recommendations were brought back to their Committees for discussion at a public meeting. Both the ASCC and BPTS Chairs indicated that their committees offered their unanimous approval of the recommendations of the Ad-Hoc Committee, and as well as the Town’s Police Commissioner.

In addition, an incremental approach was expressed by the Committee if there was a future challenge to enforcement with the proposed non-standard brown signs. The incremental approach would be to install the brown signs now and if there are issues, then the signs can be changed to the State standard black and white requirements for enforceability and visibility.

Staff also researched MROSD’s conditional use permit files from 1991 and found language indicating the Town requested limiting the parking lot size to 50 cars and

denied consideration for overflow parking. As a result, there was a reference to the Town to consider the establishment of no parking zones on Portola Road or directing overflow to Town Center at a later date should parking become an issue. Staff contacted the Planning Manager at MROSD to inquire about the status of potentially enlarging the parking lot. MROSD cannot commit to any answer at the moment due to workload priorities and indicated that there are no plans to enlarge their parking lot at this time. Staff will continue to work with MROSD staff.

FISCAL IMPACT:

Adequate Public Works funds exist to provide for sign materials (\$200), minor staff installation time, and administration.

Parking citation collections: Collection amounts to be determined based on number of citations minus processing and County fees. This figure is believed to be insignificant.

ATTACHMENTS:

Exhibit A – Ad-Hoc Committee meeting minutes 9/27/16
Exhibit B – Sign rendering and approximate location map

Approved: Jeremy Dennis, Town Manager



CC: ASCC Chair
BPTS Chair
Town Police Commissioner

Approved minutes

TOWN OF PORTOLA VALLEY
*Ad-Hoc Committee for seasonal roadside parking on
Portola Road at Windy Hill Preserve*
Tuesday, September 27, 2016 – 8:15 AM
Historic Schoolhouse
765 Portola Road, Portola Valley, CA 94028

1. Call To Order 8:15am

Dave Ross, ASCC Chair	Ed Holland, BPTS Chair
Gary Nielsen, Police Commissioner	Christina Corpus, Sheriff Lieutenant
Jeff Seymour, Sheriff Deputy	Todd Finado, Sheriff Deputy
Craig Hughes, Council Liaison / Vice Mayor	
Howard Young, Public Works Director	

Guests:

Chris Barresi, Mid-Peninsula Open Space District, Skyline Area Superintendent
Richard Merk, Resident

2. Oral Communications

Resident Richard Merk brought up the history of the Windy Hill parking lot when it was first proposed and that it was supposed to be twice as big. He pointed out that the Town should research the documents of why the lot is 50% less in size. He also indicated that this is a Mid-peninsula open space problem not the Towns.

3. Review assigned scope of Ad-Hoc Committee

Vice Mayor Hughes and Public Works Director Young reviewed the scope of the Committee per the 8/10/16 Town Council meeting minutes.

4. Background update concerning seasonal roadside parking on Portola Road at Windy Hill Preserve

Public Works Director Young reviewed the attached Council memo and other background information. No accidents or issues were recently noted to date.

Sheriff Deputies indicated no issues observed to date nor tickets issued.

MROSD Superintendent Barresi indicated he has not seen issues here and noted that parking is a common issue at their parks.

Police Commissioner Nielsen reviewed his observations from 3 years ago. Indicated that cars are lower this month and agrees with the observations of the Sheriff Deputies and has not seen an issue lately.

ASCC Chair Ross expressed the ASCC views pointing out that this is not really a large problem. Indicating that a 10 hour a week problem vs signs being posted there 168 hours a week. The ASCC is against additional signs.

5. Field trip to site (if needed)

Not required

6. Discussion concerning action or signage to address seasonal roadside parking on Portola Road at Windy Hill Preserve

Public Works Director Young reviewed existing conditions via projector slides, existing signage on road, temporary signs placed, standards from the Manual of Uniform Traffic Control Devices (MUTCD), and sign samples from the MUTCD.

ASCC Chair Ross asked the question “Is this really a problem?” It’s not really a large problem, maybe 10 hours a week, but any proposed signs would be there 168 hours a week. It appears to be an aesthetic issue vs a time issue. The ASCC views additional signs as horrifying and is against it. The size of problem may not merit the number and size of signs. That signs are less obtrusive to drivers but more obtrusive to walkers and residents.

Deputy Seymour indicated that potentially an ordinance can be created to restrict parking in the area as other jurisdictions have done. He has not received any complaints concerning this issue.

BPTS Chair Holland indicated that solutions can be experimental and can be back peddled

Vice Mayor Hughes indicated that there is an issue with the Committee and staff members having to take the large temporary A-Frame signs out for every weekend.

Public Works Director Young indicated that whatever signs are placed, that they have to be obvious to drivers to be fairly enforced.

ASCC Chair Ross indicated that the existing Windy Hill parking lot is inefficient and if it can be made more efficient with marking the spots.

Chris Barresi of MROSD indicated that the lot is gravel and spots are not marked, that the newer lots they have are paved. MROSD is very busy now and any potential capital improvement projects may wait 5+ before they even thought about it. In addition, they would not be able to take the temporary A-Frame signs out due to scheduling although they would be willing to assist in enforcement.

Vice Mayor Hughes discussed checking MROSD's conditional use permit as it relates to providing enough parking.

The group discussed and focused on "No parking on Pavement" (aka R25 sign from MUTCD) vs "No Parking signs". No Parking signs would require further studies to determine where parking would be forced to move, creating other problems. The group agreed that "No Parking signs" should not be considered at this time. The group reviewed "No Parking on Pavement" sign options.

ASCC Chair Ross discussed the possibility of installing a bike lane for a short section. It was pointed out that additional signage and legends would have to accompany that.

Vice Mayor Hughes began discussion and layout of the "No Parking on Pavement" R25 signs on the chalk board. The group agreed that signs should only be considered on the East side of Portola Road and the Westside (Windy Hill side) should remain unchanged.

7. Recommended actions

The following was a discussion of recommendations for consideration and follow up items

- A. General note to work with MROSD to work on the parking situation with respect to their Conditional use permit.
- B. Remove the 2 temporary signs and 1 large sign
Install 2 – R25 signs at the 2 edges of the problem area on the east side of Portola Road. No changes on the Westside of Portola Road
- C. Public Works Director Young to investigate "Park off Pavement" legends painted in the surface of the asphalt road shoulder. This is an optional item that staff will research but this item can wait.
- D. Concerning the R25 signs, if in the Town Attorneys opinion if they can be brown and white with or without an ordinance, then we should make them brown.
- E. If they have to be black/white, then ok but brown/white is preferred.

Other follow up items:

Rendering of sign

Town municipal code should cover the enforcement of the signs, if an ordinance is needed, that can be done at a later date as well as addressing any sign height requirement.

8. Next steps or meeting date: October 12, 2016 at 8:15am

9. Adjournment 9:50am

Exhibit B – Sign rendering and map depicting approximate locations of 2 new signs



Approx. Size
18" x 12"



#13

There are no written materials for Council Liaison Committee and Regional Agencies Reports

#14

There are no written materials for Town Manager Report

TOWN COUNCIL WEEKLY DIGEST

Friday – October 14, 2016

1. Agenda (Action) – Town Council – Wednesday, September 10, 2016
2. Agenda – Water Conservation Committee – Monday, October 17, 2016
3. Agenda – Planning Commission – Wednesday, October 19, 2016
4. Report from San Mateo County Sheriff's Office – Incident Log for 09/19/16 – 09/25/16
5. Report from San Mateo County Sheriff's Office – Incident Log for 09/26/16 – 10/02/16

Attached Separates (Council Only)
(placed in your town hall mailbox)

1. Invitation to HIP Housing Open House – Wednesday, October 26, 2016



TOWN OF PORTOLA VALLEY

7:00 PM – Regular Meeting of the Town Council
 Wednesday, October 12, 2016
 Historic Schoolhouse
 765 Portola Road, Portola Valley, CA 94028

ACTION AGENDA

7:00 PM - CALL TO ORDER AND ROLL CALL

Councilmember Aalfs, Councilmember Wengert, Councilmember Richards, Vice Mayor Hughes and Mayor Derwin

All Present

ORAL COMMUNICATIONS

Persons wishing to address the Town Council on any subject may do so now. Please note however, that the Council is not able to undertake extended discussion or action tonight on items not on the agenda.

Monika Cheney requested a waiver or reduction in plan check fees for the Windmill School Project

CONSENT AGENDA

The following items listed on the Consent Agenda are considered routine and approved by one roll call motion. The Mayor or any member of the Town Council or of the public may request that any item listed under the Consent Agenda be removed and action taken separately.

1. **Approval of Minutes** – September 28, 2016
2. **Approval of Warrant List** – October 12, 2016
3. **Appointment by Mayor** – Request for Appointment of a Member to the Parks & Recreation Committee

Approved 5-0

REGULAR AGENDA

4. **Recommendation by Administrative Services Officer** – Update on Annual Audit for FYE 2015-'16
Council received the update and thanked the accounting department for their excellent work.
5. **Recommendation by Town Manager** – Proposed Continuation of Municipal Water-Use Reduction Targets
The Conservation, Parks & Recreation, and Water Conservation Committees agreed to the imposed 10% water reduction from CalWater. All committees agreed to the 10% reduction and nothing beyond that at this time. Staff delivered a comprehensive water use report to the Committees and asked that they consider possible improvements to water use for Town fields.
6. **Recommendation by Town Manager** - Consideration of SB 415 - California Voter Participation Rights Act and Consolidation with a Statewide General Election Date
Council approved consolidation with statewide general election, occurring on even years, and extending two Councilmembers terms by one year, from 2017 to 2018 and three Councilmembers terms from 2019 to 2020
7. **Recommendation by Town Manager** – Draft Housing Options Strategic Plan - Follow-Up Discussion
Council agreed to the following:

Direct the Planning Commission to review amendments to the Second Unit Ordinance possibly increasing the maximum allowable size of the unit; allow second units on smaller than 1-acre properties. Direct the Planning Commission to work with Staff to develop a Junior Second Unit Ordinance. Look into a group buy of pre-engineered, preapproved, modular units up to 1,000 sq. Ft. as well as multiple sizes.

Staff will work with regional agencies and private sector partners to reduce costs for second unit construction as well as begin a public engagement process, engaging with businesses in Town to gauge interest in the Affiliated Housing program and local outreach to local employers for an employee survey to inquire about their housing and commute status. Staff will continue to assist HIP Housing to publicize their services.

An Ad-Hoc Committee will be formed, comprising in two Councilmembers, two Planning Commissioners and three residents appointed by the Town Council, to review and recommend potential housing on Town-owned

properties. It was decided to postpone further work on the draft housing impact fee study and allotment of existing affordable housing funds accumulated from the Inclusionary Housing Ordinance until completion of the housing options strategic plan. Approved 5-0

8. **Recommendation by Town Attorney – Annual Evaluation Process**

Council approved a 360 review process and the formation of a subcommittee, consisting of Vice Mayor Hughes and Councilmember Aalfs, who will work with a consultant to streamline the evaluation process. Approved 5-0

9. **COUNCIL LIAISON COMMITTEE AND REGIONAL AGENCIES REPORTS**

Report by Town Council Members – Brief announcements or reports on items of significance for the entire Town Council arising out of liaison appointments to both in-town and regional committees and initiatives. *There are no written materials and the Town Council does not take action under this agenda item.*

Councilmember Aalfs -

There was a press conference held on October 6th officially announcing Peninsula Clean Energy. San Carlos announced all their municipal accounts are at 100% renewable.

Councilmember Wengert -

Attended an ASCC meeting that discussed an architectural review for an attached second unit on Stonegate, a modification to landscaping on Campo Road and update on Ad-Hoc Committee for Portola Road Corridor.

Councilmember Richards -

None

Vice Mayor Hughes –

Attended an Ad-Hoc Windy Hill Signage Committee that discussed the installation of two parking signs and removal of existing signs.

Bicycle, Pedestrian & Traffic Safety Committee discussed signage on Portola Road at Windy Hill, possibly replacing the crosswalk sign at the Priory, staff maintenance crew is clearing drains; Hawthorne Trail group is organizing a meeting and if more parking is needed at Windy Hill parking lot.

Mayor Derwin -

C/CAG Water Committee held its last meeting and formed a recommendation to take to C/CAG for a proposed framework for a San Mateo Countywide Water Committee that will look into stormwater, flood control, sea level rise, including coastal erosion. Membership will include five elected officials and technical assistance as needed. It will be a standing committee whose role is to educate, outreach, advocate for funds and central repository for information about stormwater, flood control, and sea level rise.

10. Town Manager Report -

Town Manager Dennis reported the first Neighborhood Watch meeting in the Golden Oak North Community is being held tonight, had lunch with the General Manager of the West Bay Sanitary, staff is in the process of considering their goals for 2017, the Emergency Preparedness Committee sponsored a Health Care Mixer, inviting people with health care backgrounds to possibly work in the EOC and attended the League of California Cities Annual Conference, which held excellent workshops.

WRITTEN COMMUNICATIONS

11. Town Council Digest – September 30, 2016

None

12. Town Council Digest – October 7, 2016

#7 - Councilmember Aalfs questioned why the SunShares Workshop was canceled

#8 – Councilmember Wengert asked if anyone knew what the program is for the October Council of Cities dinner meeting

ADJOURNMENT: 9:15 pm

ASSISTANCE FOR PEOPLE WITH DISABILITIES

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Town Clerk at (650) 851-1700. Notification 48 hours prior to the meeting will enable the Town to make reasonable arrangements to ensure accessibility to this meeting

AVAILABILITY OF INFORMATION

Copies of all agenda reports and supporting data are available for viewing and inspection at Town Hall and at the Portola Valley Library located adjacent to Town Hall. In accordance with SB343, Town Council agenda materials, released less than 72 hours prior to the meeting, are available to the public at Town Hall, 765 Portola Road, Portola Valley, CA 94028

SUBMITTAL OF AGENDA ITEMS

The deadline for submittal of agenda items is 12:00 Noon WEDNESDAY of the week prior to the meeting. By law no action can be taken on matters not listed on the printed agenda unless the Town Council determines that emergency action is required. Non-emergency matters brought up by the public under Communications may be referred to the administrative staff for appropriate action.

PUBLIC HEARINGS

Public Hearings provide the general public and interested parties an opportunity to provide testimony on these items. If you challenge any proposed action(s) in court, you may be limited to raising only issues you or someone else raised at the Public Hearing(s) described in this agenda, or in written correspondence delivered to the Town Council at, or prior to, the Public Hearing(s).



TOWN OF PORTOLA VALLEY
Water Conservation Committee Meeting
Monday, October 17, 2016 11 AM to 1 PM
Town Hall - Conference Room
765 Portola Road, Portola Valley, CA 94028

AGENDA

- 1. Call To Order**
- 2. Roll Call**
- 3. Oral Communications**
- 4. Approval of Minutes – September 19, 2016**
- 5. Old Business:**
 - a. Updates from Subcommittees (see minutes)**
 - Smart Irrigation (Al, Brandi, Loverine, Mia)
 - Graywater (Rebecca, Judy)
 - Rainwater Capture (Loverine)
 - Leaks (Brandi, Rebecca, Mia)
 - Native Garden Tour (Judy, Delle, Marge, Danna)
 - Welcome to PV (Whitney, CheyAnne)
 - b. Update from Maryann**
 - c. Update from Brandi**
 - Recap of Municipal Water Reduction Discussions
- 6. New Business:**
 - a. Report on CPUC Hearing on CalWater Rate Case (Loverine)**
 - b. Check In with Parks & Recreation Committee (Simone)**
 - c. Discussion on Rainwater Harvesting Demo Site (Brandi)**
- 7. Announcements**
- 8. Set Date and Topics for next meeting**
 - a. Scheduled meeting: November 21 at 11:00 am**
- 9. Adjournment**



**TOWN OF PORTOLA VALLEY
REGULAR PLANNING COMMISSION MEETING
Wednesday, October 19, 2016 – 7:00 p.m.
Council Chambers (Historic Schoolhouse)
Special Field Meeting (time and place as listed herein)
765 Portola Road, Portola Valley, CA 94028**

SPECIAL JOINT ASCC AND PLANNING COMMISSION FIELD MEETING*

4:00 p.m. 4139 Alpine Road Field meeting for preliminary review of New Clubhouse, Renovation of the Historic Roadhouse, and Site Improvements at the Alpine Hills Swim and Tennis Club.

7:00 PM – REGULAR AGENDA

1. Call to Order:
 2. Roll Call: Commissioners McKitterick, Targ, Von Feldt, Vice-Chair Gilbert, Chair Hasko
 3. Oral Communications:

Persons wishing to address the Commission on any subject, not on the agenda, may do so now. Please note, however, the Commission is not able to undertake extended discussion or action tonight on items not on the agenda.
 4. New Business:
 - a. Preliminary Review/Study Session of Conceptual Design of New Clubhouse, Renovation of the Historic Roadhouse, and Site Improvements, Alpine Hills Swim and Tennis Club, 4139 Alpine Road, File #s: 35-2016 and X7D-13 (Staff: D. Pedro)
 5. Commission, Staff, Committee Reports and Recommendations:
 6. Approval of Minutes: September 7, 2016
 7. Adjournment:
-

ASSISTANCE FOR PERSONS WITH DISABILITIES

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Assistant Planner at 650-851-1700 ext. 211. Notification 48 hours prior to the meeting will enable the Town to make reasonable arrangements to ensure accessibility to this meeting.

AVAILABILITY OF INFORMATION

Any writing or documents provided to a majority of the Town Council or Commissions regarding any item on this agenda will be made available for public inspection at Town Hall located 765 Portola Road, Portola Valley, CA during normal business hours.

Copies of all agenda reports and supporting data are available for viewing and inspection at Town Hall and at the Portola Valley branch of the San Mateo County Library located at Town Center.

PUBLIC HEARINGS

Public Hearings provide the general public and interested parties an opportunity to provide testimony on these items. If you challenge a proposed action(s) in court, you may be limited to raising only those issues you or someone else raised at the Public Hearing(s) described later in this agenda, or in written correspondence delivered to the Planning Commission at, or prior to, the Public Hearing(s).

This Notice is posted in compliance with the Government Code of the State of California.

Date: October 14, 2016

CheyAnne Brown
Planning Technician



SHERIFF'S OFFICE

A TRADITION OF SERVICE SINCE 1856

San Mateo County Sheriff's Office (Headquarters Patrol) Press

Information on selected incidents and arrests are taken from initial Sheriff's Office case reports. Not all incidents are listed due to investigative restrictions and victim privacy rights.

Monday 09/19/16 to Sunday 09/25/16

Carlos G. Bolanos
Sheriff

CASE NUMBER	DATE & TIME Reported	LOCATION	DESCRIPTION	FACTUAL CIRCUMSTANCES
16-08962	09/19/2016 Unknown	2900 blk Calvin Ave North Fair Oaks	Residential Burglary	Unknown suspect(s) pried open the heater door room. The unknown suspect(s) left behind a sleeping mattress, clothing and several miscellaneous credit cards and an El Salvador passport. The victim report her vehicle was burglarized. No items were reported missing from inside the heater room. The deputy conducted an area check with negative results.
16-08987	09/20/2016 08:30	1900 blk Camino De Los Robles West Menlo Park	Obtain/Use Personal ID without Authorization- Felony	The deputy responded on a report of an identity theft. The victim received an email notification from Equifax regarding a loan inquiry that was made to one of his accounts. The victim did not sustain any monetary loss.
16-08998	09/19/2016 20:30	Berkshire Ave/Huntington Ave North Fair Oaks	Vandalism	Unknown suspect(s) vandalized the victim's vehicle by scratching the vehicle using a key or other sharp tipped carving instrument. The total damage was approximately \$1000.
16-09114	09/23/16 23:00	400 Raymundo Dr Woodside	Possession of Marijuana	The deputy was on a patrol check at a dead end when he saw a suspicious vehicle parked in front of a no parking sign. The

				deputy saw four male subjects sitting inside the vehicle. When the deputy made contact with the driver, the deputy smelled the distinct odor of unburnt marijuana. The deputy looked into the vehicle and in plain sight could see an approximate two foot glass bong underneath the right rear passenger's legs. Upon peering into the vehicle the deputy saw in plain sight a clear zip lock bag containing a green leafy substance tucked behind his right side. The deputy recognized the substance to be marijuana. The deputy asked the male passenger if he had a marijuana card and he replied he did not. The deputy collected the marijuana and issued the driver and passenger a citation.
16-09120	09/24/16 00:35	1 st blk 5 th Ave North Fair Oaks	Poss Controlled Substance for Sale/Poss Unlawful Paraphernalia/Use False Citizen,Etc Doc/Poss Marijuana for Sale	The deputy responded on a report of a fight in progress at the Best Western Hotel. One of the involved parties in the fight was found to be staying in a room of the hotel. When the deputy made contact with the occupants of room for a welfare check, the deputies located several fresh marijuana branches that were strung around the room to dry. The suspects were ultimately booked into county jail.
16-09146	09/24/16	2800 blk Woodside Road	Grand Theft:Prop	Unknown suspect(s) stole the victim's purse from an unlocked pool house during a large house party. The deputy met with the victim who stated she attended a very large pool party where there were approximately 200 guests on the property. The victim had put her purse in the unlocked pool house and now it is missing. The estimate total loss was \$5,300



SHERIFF'S OFFICE

A TRADITION OF SERVICE SINCE 1856

San Mateo County Sheriff's Office (Headquarters Patrol) Press

Information on selected incidents and arrests are taken from initial Sheriff's Office case reports. Not all incidents are listed due to investigative restrictions and victim privacy rights.

Monday 09/26/16 to Sunday 10/02/16

Carlos G. Bolanos
Sheriff

CASE NUMBER	DATE & TIME Reported	LOCATION	DESCRIPTION	FACTUAL CIRCUMSTANCES
16-09221	09/27/16 01:45	2500 blk Middlefield Rd North Fair Oaks	Warrant Arrest	The deputy was conducting a passing check when he observed a vehicle parked in the corner parking lot. The deputy observed a male subject who appeared to be sleeping in the drivers seat. The deputy made contact with the sole occupant of the vehicle and identified a male subject. The deputy conducted a wants and warrants check through County Communications which advised that the subject had an outstanding felony warrant for his arrest. The warrant was confirmed and the subject was arrested.
16-09400	10/01/16 12:17	700 blk Marsh Road North Fair Oaks	Warrant Arrest	The deputy received information that a wanted male subject was currently at the Valero Gas Station. The deputy conducted a record checks prior to contact which showed that the male subject had an outstanding felony arrest warrant. Upon arrival, the deputy observed a male subject with a matching description that was obtained from the record check. County

				Communications confirmed the warrant and the deputy immediately arrested the subject.
16-09415	10/01/16 22:01	2700 Blenheim Ave North Fair Oaks	Residential Burglary	
16-09417	10/01/16 19:30	2900 Calvin Ave North Fair Oaks	Residential Burglary/Rec Known Stolen Property/Resist or Obstruct Officer/Arrest Warrant/Poss Controlled Substance-Prop 47/Probation Violation	The victim reported that she had just arrived home and found that the window to her apartment had been tampered with. Upon arrival, the deputy located and attempted to make contact with two male subjects. The subjects fled despite being ordered to stop. One of the subjects was located but the other subject was never located. A probation search of the located male subject's backpack revealed the stolen items that were identified by the victim. The subject was also found to be in possession of suspected methamphetamine and a glass smoking pipe. The subject was arrested and booked into the San Mateo County Jail.
16-09239	09/27/16 Unknown Time	1300 American Way Wes Menlo Park	Suspicious Circumstances	The deputy responded on a report of an attempted fraud. The deputy met with the reporting person who stated he received a phone call from an employee of a Rental Company in San Francisco who stated that an unknown subject filled out an application to rent a vehicle using the reporting person's personal information. The victim stated that the vehicle was not rented to the unknown subject. A report was filed and the deputy is in contact with the rental company.
16-09337	09/29/16 17:58	1 st blk Trudy Lane West Menlo Park	Theft via Fraud	The deputy responded on a report of a fraud. The victim stated that a subject answered an E-Bay advertisement for an old Iphone 6 16gb space-gray phone that the victim was selling. The agreement was for the victim to ship the phone to an address in Sacramento and that the subject would provide a payment of \$450 through Pay Pal. The victim received a notification via email claiming to be from Pay Pal regarding received payment of \$450. The victim then shipped his Iphone to the address. The victim later noticed the Pay Pal email appeared odd. After further inspection of the email, the victim

				<p>noticed the email didn't appear official. The victim contacted Pay Pal and learned the transaction was fabricated. The victim reported the fraudulent activity to both E-Bay and Pay Pal.</p>
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TOWN COUNCIL WEEKLY DIGEST

Friday – October 21, 2016

1. Agenda – Conservation Committee – Tuesday, October 25, 2016
2. Agenda (Special) – Architectural and Site Control Commission (ASCC) – Thursday, October 27, 2016
3. Announcement - Resignation from Conservation Committee
4. Letter of Interest – Consideration of appointment to the Ad-Hoc Committee on Housing
5. Report from San Mateo County Sheriff's Office – Incident Log for 10/03/16 – 10/09/16
6. Petition received on Monday, October 17, 2016 – Re: Support of Installation of Automated License Plate Readers in Town
7. Email from Resident – Request for Consideration of Motion Detection Lighting Solutions
8. Notice of Community Meeting #3 - Re: Alpine Rd Comprehensive Corridor Study – Tuesday, November 1, 2016
9. Invitation to “Java with Jerry” – Senator Jerry Hill in Portola Valley at Konditorei – Friday, October 28, 2016

Attached Separates (Council Only)
(placed in your town hall mailbox)

1. Invitation – National League of Cities “City Summit” – November 16 – 19, 2016
2. Newsletter – Kaiser Permanente – Fall 2016
3. Newsletter – LABOR – October 2016



**TOWN OF PORTOLA VALLEY
Conservation Committee Meeting
Tuesday, October 25, 2016 – 7:30 PM
Historic Schoolhouse
765 Portola Road, Portola Valley, CA**

MEETING AGENDA

1. Call Meeting to Order
2. Oral Communications
3. Approval of September 27, 2016 minutes
4. Current Site Permits:
 - A. None
5. Old Business
 - A. Wells – Bourne
 - B. Ban on Poison bait – DeStaebler/Chiariello/Eastman/Heiple
 - C. BYH – DeStaebler
 - D. Tip of the Month - Plunder
 - E. Kudos of the Month – Murphy
 - F. Broom Pull Sunday March 5, 2017
 - G. Monarch milkweed project
 - H. Local Native seed collection - Plunder
 - I. Committee/Town cooperation
 - a) Public Works
 1. Native plant garden
 2. Schoolhouse front yard
 - b) Brochure for Town Center Plantings
 - c) Long Range Planning Committee
 - d) Town Water Conservation Project
 - e) Water Conservation Committee
 1. Water-wise Garden tour Sunday, April 2, 2017
 - J. Weed seedling info sheet – Heiple / November?
6. New Business
 - A. Resignation – find new member
7. Adjournment
8. Next meeting November 29, 7:30 pm



**TOWN OF PORTOLA VALLEY
ARCHITECTURAL AND SITE CONTROL COMMISSION (ASCC)
Thursday, October 27, 2016
7:00 PM – Special ASCC Meeting
Special Field Meeting (time and place as listed herein)
Historic Schoolhouse
765 Portola Road, Portola Valley, CA 94028**

SPECIAL JOINT ASCC AND PLANNING COMMISSION FIELD MEETING*

4:00 p.m. 1260 Westridge Drive Field meeting for preliminary review of proposed new residences on three parcels.

7:00 PM – SPECIAL AGENDA*

1. Call to Order:
2. Roll Call: Commissioners Koch, Sill, Wilson, Vice Chair Breen and Chair Ross
3. Oral Communications:

Persons wishing to address the Commission on any subject, not on the agenda, may do so now. Please note, however, the Commission is not able to undertake extended discussion or action tonight on items not on the agenda.

4. New Business:
 - a. Preliminary Architectural Review and Site Development Permit review for development on three parcels located at 1260 Westridge Drive, Carano Residences (Staff: C. Richardson)
 - Parcel A: New residence, pool, detached garage and pavilion #26-2015
 - Parcel B: New residence and detached garage File #27-2015
 - Parcel C: New residence, two detached garages and tennis court File #28-2015
 - b. Preliminary Review/Study Session of Conceptual Design of New Clubhouse, Renovation of the Historic Roadhouse, and Site Improvements, Alpine Hills Swim and Tennis Club, 4139 Alpine Road, File #s: 35-2016 and X7D-13 (Staff: D. Pedro)
5. Commission and Staff Reports:
6. Approval of Minutes: October 10, 2016
7. Adjournment:

*For more information on the projects to be considered by the ASCC at the Special Field and Regular meetings, as well as the scope of reviews and actions tentatively anticipated, please contact Carol Borck in the Planning Department at Portola Valley Town Hall, 650-851-1700 ex. 211. Further, the start times for other than the first Special Field meeting are tentative and dependent on the actual time needed for the preceding Special Field meeting.

PROPERTY OWNER ATTENDANCE. The ASCC strongly encourages a property owner whose application is being heard by the ASCC to attend the ASCC meeting. Often issues arise that only property owners can responsibly address. In such cases, if the property owner is not present it may be necessary to delay action until the property owner can meet with the ASCC.

WRITTEN MATERIALS. Any writing or documents provided to a majority of the Town Council or Commissions regarding any item on this agenda will be made available for public inspection at Town Hall located 765 Portola Road, Portola Valley, CA during normal business hours.

ASSISTANCE FOR PERSONS WITH DISABILITIES

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PUBLIC HEARINGS

Public Hearings provide the general public and interested parties an opportunity to provide testimony on these items. If you challenge a proposed action(s) in court, you may be limited to raising only those issues you or someone else raised at the Public Hearing(s) described later in this agenda, or in written correspondence delivered to the Planning Commission at, or prior to, the Public Hearing(s).

This Notice is Posted in Compliance with the Government Code of the State of California.

Date: October 21, 2016

CheyAnne Brown
Planning Technician

October 17, 2016

Judith Murphy, Chairman
Portola Valley Conservation Committee

Dear Judy,

It is with great regret that I notify you of my resignation from the Portola Valley Conservation Committee. New family responsibilities make it impossible for me to devote the kind of time and attention that this committee deserves.

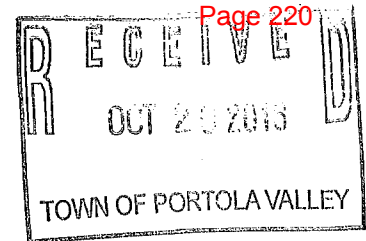
It has been a pleasure to work with all of you and to serve with such a dedicated group of people. Thanks to you and all the members for your friendship over the years.

Yours truly,

Jean Eastman

cc: Portola Valley Town Council

McINTOSH PROPERTIES



October 17, 2016

Portola Valley Town Council
765 Portola Road
Portola Valley, CA 94028

Dear Council members,

I would like to be considered for a position on the ad hoc committee on housing.

Sincerely,



Chip McIntosh

ATM/lmc



SHERIFF'S OFFICE

A TRADITION OF SERVICE SINCE 1856

San Mateo County Sheriff's Office (Headquarters Patrol) Press

Information on selected incidents and arrests are taken from initial Sheriff's Office case reports. Not all incidents are listed due to investigative restrictions and victim privacy rights.

Monday 10/03/16 to Sunday 10/09/16

Carlos G. Bolanos

Sheriff

CASE NUMBER	DATE & TIME Reported	LOCATION	DESCRIPTION	FACTUAL CIRCUMSTANCES
16-09473	10/03/16 21:32	2 nd Ave/Northside Ave North Fair Oaks	Adw Not F/Arm Or Frce:gbi/Vandalism	An unknown male subject walked up to the victim as he was driving his truck. The suspect then struck the driver side window with an unknown object causing the window to break and subsequently striking the victim in the arm causing complaint of pain. The suspect then struck the windshield three times causing it to break. The suspect never said a word during the assault which lasted approximately fifteen seconds. The suspect then fled in an unknown direction. The victim complained of slight soreness to his left shoulder. The victim estimated the total amount to repair the damaged windows to be approximately \$600.
16-09507	10/04/16 09:05	1500 blk Woodside Rd Woodside	Auto Burglary	The victim parked his vehicle and entered a place of business. When the victim returned to his vehicle, he discovered that the front passenger window was shattered. The victim examined the interior of his vehicle and observed that his black briefcase was now missing from the right front passenger seat. The briefcase contained his wallet US currency, CA driver license, various

				credit cards, cell phone and a hard disk containing music media. The total loss was approximately \$562.
16-09521	10/04/16 17:15	Canada Rd/Edgewood Rd Woodside	General Information Case	The deputy responded on a report of a verbal argument. While in route the deputy was advised the argument was over a party's service dog on the walking trail. The deputy confirmed with the park rangers that service dogs were permitted on the hiking trail. The deputy made contact with a male subject who stated he had to yell at the dog owner for having a dog off leash on the trail. The male subject also stated that the dog owner squirted him with a bottle of water. The deputy informed the male subject that service dogs are allowed on the trail. The two parties eventually shook hands and went their separate ways.
16-09522	10/03/16 Unknown	600 blk Woodside Dr Woodside	Unauthorized Use Access Card	The victim received an email on her AOL email account regarding an item purchased in the amount of \$705.24 and that the item was shipped to Oakley, CA. The victim contacted Wells Fargo bank and confirmed that her account had been used for the transaction. The victim did not authorize this charge and Wells Fargo bank closed the account. The deputy contacted Oakley PD for a premise history check which came back to negative results.
16-09543	10/04/16 Unknown	1 st blk San Juan Ave West Menlo Park	General Information Case	The deputy met with a subject regarding a neighbor dispute. The subject stated that his neighbor drove his vehicle the wrong way on purpose. The subject stated that the neighbor threatened he would drive this way unless they remove the guardrails and signs on their property. The deputy contacted the neighbor who stated he never intentionally drove his vehicle towards anyone or in any threatening manner and was using the road to pass through. Both parties were counseled and a report was written for informational purposes only.
16-09596	10/06/16 09:45	600 blk Eastview Wy Woodside	Trespass: occupy property without consent	The deputy was dispatched to an address in the Town of Woodside to assist a building inspector with a code enforcement issue. The inspector informed the deputy that the residence was uninhabitable and posted a notice and a Stop Work order on the house. Upon arrival at the residence, the deputy contacted a person whom they believed was the home owner. The deputy admonished the male subject that he could no longer be on the property and that if he returned he would be arrested for trespassing. The deputy received a report that the male subject was back at the residence. The deputy also learned that the male

				subject who was at the residence was not the sole owner of the home. When the deputy arrived at the residence to make contact, they were unable to locate anyone inside the home or on the property.
16-09662	10/08/16 02:30	1 st blk 5 th Ave North Fair Oaks	Grand Theft:Prop,Etc \$950+	The deputy met with the victim who stated he hid his money, approximately \$1700, in the office at his place of employment at the start of his shift and forgot to retrieve it prior to leaving at the end of his workday. When he returned he found that the money was gone.
16-09671	10/08/16 23:52	Alameda De Las Pulgas/Woodside Rd West Menlo Park	DUI Turnover	The deputy observed a vehicle driving erratically. While traveling, there was a solid red light controlling the intersection. The vehicle applied his brakes to slow for the solid red light; almost the whole vehicle crossed the marked limit line before coming to a complete stop. When the light turned green, the vehicle began traveling in an "S" like pattern on the roadway. Based on the indicators, the deputy suspected the driver of the vehicle may have been impaired. When the deputy made contact with the driver, he could smell the odor of an alcoholic beverage emanating from his person and breath. The driver's eyes also appeared bloodshot and watery. The deputy also observed an empty bottle of beer on the rear passenger floorboard and an open twelve pack box of beer on the front passenger floorboard. While the male driver was seated in the driver's seat of the vehicle, the deputy checked his eyes for horizontal gaze nystagmus. The deputy observed nystagmus in both of his eyes and also observed a lack of smooth pursuit in both eyes, and there was an angle of onset prior to forty five degrees in both eyes. The deputy requested County Communications contact the California Highway Patrol to respond for a driving under the influence investigation.
16-09682	10/09/16 11:27	400 blk Old La Honda Rd Woodside	General Information Case	The deputy was dispatched to a medical call of a bicyclist down. The deputy spoke to a witness who stated as he was driving he noticed a female bicycle rider descending at a high rate of speed and in a panic the bicyclist locked up her brakes causing her to be ejected from her bicycle. The witness stated he went to her aid and saw that she was convulsing on the ground and then waited

				for emergency personnel to arrive. The deputy was on scene and the bicyclist was being treated by the Woodside Fire Engine personnel. The deputy checked the roadway and did not see any road hazards that would have caused her to be ejected from her bicycle.



This petition has collected
291 signatures
using the online tools at iPetitions.com

Printed on 2016-10-17 *e* (L: LI r--

Addresses were removed
for privacy concerns.

Portola Valley - Automated License Plate Readers

About this petition

Dear Portola Valley City Council,

Given the progressive and violent nature of recent home invasion robberies, we request that the city council immediately re-consider the use of Automated License Plate Readers (ALPR's) at town entry points. We request that this issue be given a very high priority for consideration and discussion at the next possible meeting date. While we recognize the limitations of ALPRs, we support their use in conjunction with other crime deterrent methods.

Thank you.

1. Name: Roham Zamanian on 2016-10-15 04:22:56
Comments:

2. Name: Taryn Lamm on 2016-10-15 04:27:55
Comments:

3. Name: Melissa Menge on 2016-10-15
04:29:16 Comments:

4. Name: Joanne Donsky on 2016-10-15 04:29:57
Comments: We hope to get ALPRs in Portola Valley!

5. Name: Leslie Kriese on 2016-10-15
04:30:31 Comments:

6. Name: Bob boyle on 2016-10-15 04:31:15
Comments:

7. Name: kathy Iannin on 2016-10-15 04:36:54
Comments:

8. Name: Judy Leckonby on 2016-10-15 04:37:06
Comments:

9. Name: E Sanders on 2016-10-15
04:37:54 Comments:

10. Name: Phil and Felicity Taubman on 2016-10-15 04:41:14
Comments:

We both think that the expense is supportable and the value of the message sent by installing them is worth the price.

11. Name: Loni Austin on 2016-10-15 04:43:57
Comments: I strongly support installing ALPRs.

12. Name: Valerie Baldwin on 2016-10-15 04:46:17
Comments: I want to make our neighborhood safer.

13. Name: Bill Lu on 2016-10-15 04:46:43
Comments: My family strongly supports the use of ALPRs.

-
14. Name: Louise emerson on 2016-10-15
04:48:53 Comments:
-
15. Name: Ted Leng on 2016-10-15 04:48:53
Comments:
-
16. Name: Cynthia Campbell on 2016-10-15 04:49:39
Comments: protect our neighborhood
-
17. Name: Johanna Katz on 2016-10-15
04:50:06 Comments: We support alprs in Portola
valley.
-
18. Name: Tricia Christensen on 2016-10-15 04:50:40
Comments:
-
19. Name: Erika Demas on 2016-10-15 04:50:54
Comments: I support license plate readers in Portola valley.
-
20. Name: Mark Marchukov on 2016-10-15 04:52:15
Comments:
-
21. Name: Brent Austin on 2016-10-15 04:56:43
Comments:
-
22. Name: Laird Cagan on 2016-10-15 04:59:34
Comments: With only 3 points of entry to Portola Valley, why wouldn't we video every car
coming into our city. If the Sherriff wants us to "say something if we see something," the
camera sees everything and you can go back to review after the crime.
-
23. Name: Amod Setlur on 2016-10-15
04:59:41 Comments: Strong support for ALPR.
-
24. Name: Liz Poggi on 2016-10-15 04:59:56
Comments: I support the purchase and use of ALPRs in Portola Valley.
-
25. Name: Recha Bergstrom on 2016-10-15 05:00:22
Comments:
-
26. Name: Clay Baker on 2016-10-15 05:02:22
Comments: I support the use of ALPRs; return the trailer, announce its use to the press
-

-
28. Name: Katherine Gilpin on 2016-10-15 05:08:13
Comments: Yes for purchase and use of ALPRs.
-
29. Name: Peter Tuxen Bisgaard on 2016-10-15 05:08:28
Comments: I strongly support the ALPR's!
-
30. Name: Stephanie Tuxen Bisgaard on 2016-10-15 05:09:23
Comments: I strongly support the ALPR's!
-
31. Name: Dolores Dolan on 2016-10-15 05:11:57
Comments: This is the second time I have voted in favor of ALPR's for Portola Valley.
-
32. Name: Alena Yang on 2016-10-15 05:11:59
Comments:
-
33. Name: Pilar Frank on 2016-10-15 05:13:22
Comments: My family is in support of ALPR's.
-
34. Name: Mary Jo Kloezeman on 2016-10-15 05:13:52
Comments:
-
35. Name: Sandi Engel on 2016-10-15 05:15:08
Comments:
-
36. Name: Andy Engel on 2016-10-15 05:17:50
Comments:
-
37. Name: Jami Worthington on 2016-10-15 05:18:18
Comments: I support automatic license plate readers in our community.
-
38. Name: Kirsty Byron on 2016-10-15 05:22:33
Comments: Yes we should support this
-
39. Name: Bud and Lynn Eisberg on 2016-10-15 05:24:54
Comments: A sensible component to crime reduction especially with limited road access to the Town.
-
40. Name: Lael Bajet on 2016-10-15 05:28:12

-
41. Name: Sandra Lee on 2016-10-15
05:28:39 Comments:
-
42. Name: Christopher Atwood on 2016-10-15 05:35:37
Comments: Ideally we would have no crime in our town. However, recent events indicate otherwise. ALPRs are one step in increasing community safety.
-
43. Name: Teresa Godfrey on 2016-10-15 05:39:39
Comments:
-
44. Name: Hasan rizvi on 2016-10-15
05:44:01 Comments:
-
45. Name: Alyson Illich on 2016-10-15 05:45:11
Comments:
-
46. Name: Sylvia Thompson on 2016-10-15 05:49:16
Comments: Yes, we support ALPRs for Portola Valley
-
47. Name: Tina Nguyen on 2016-10-15 05:50:11
Comments:
-
48. Name: Kari Rust on 2016-10-15 06:01:08
Comments:
-
49. Name: Lynde alvarez on 2016-10-15 06:08:51
Comments:
-
50. Name: Christine Payne on 2016-10-15 06:10:56
Comments:
-
51. Name: Marjel Scheuer on 2016-10-15 06:13:07
Comments:
-
52. Name: Roi Lunardi on 2016-10-15
06:13:53 Comments: Lets give it a try
-
53. Name: Carol and Mark Sontag on 2016-10-15 06:18:35
Comments: We support ALPR's in Portola Valley
-
54. Name: Emily Melton on 2016-10-15 06:20:31

-
55. Name: Martine Bennett on 2016-10-15 06:24:00
Comments:
-
56. Name: Robin Roy on 2016-10-15 06:35:34
Comments:
-
57. Name: Dr Bob Bauer on 2016-10-15 07:28:22
Comments: PLEASE PLEASE add this tool that law enforcement asks PV to provide for our protection!
-
58. Name: Rosyland Bauer on 2016-10-15 07:34:56
Comments: What's -\$200,000 in a town of households live in residences all of which are valued over ten times that amount? What's more important than our protection?
-
59. Name: Susan Kritzik on 2016-10-15 08:07:41
Comments:
-
60. Name: Robin Lazzara on 2016-10-15 08:09:52
Comments:
-
61. Name: Elise Gabrielson on 2016-10-15 08:42:46
Comments:
-
62. Name: **Bill** Demas on 2016-10-15 08:46:46
Comments:
-
63. Name: Dianne Reed on 2016-10-15 09:26:29
Comments:
-
64. Name: Lynn Holthaus on 2016-10-15 09:30:42
Comments:
-
65. Name: Alexander Driskill-Smith on 2016-10-15 12:00:59
Comments: I 100% support ALPRs for Portola Valley and Ladera.
-
66. Name: Sherry Andrighetto on 2016-10-15 12:56:26
Comments: Please consider this request. My home has been robbed twice in this community.
-
67. Name: aruna gambhir on 2016-10-15 13:11:57

-
68. Name: Camilla Lynch on 2016-10-15 13:13:03
Comments:
-
69. Name: Lela Sarnat on 2016-10-15 13:13:32
Comments:
-
70. Name: Ivan Cheng on 2016-10-15 13:14:03
Comments:
-
71. Name: Surya Panditi on 2016-10-15 13:15:26
Comments:
-
72. Name: Michelle fortnam on 2016-10-15 13:20:16
Comments:
-
73. Name: Elizabeth Chae on 2016-10-15 13:27:33
Comments: Yes please!!
-
74. Name: Carolina Reyes on 2016-10-15 13:35:21
Comments: Yes, I support ALPRs in Our town. Our house has been burglarized.
-
75. Name: Andy Hewett on 2016-10-15 13:40:08
Comments: Our safety should be a number one priority...why is this even a question?!?!
-
76. Name: Emma Morton-bours on 2016-10-15 13:43:07
Comments:
-
77. Name: Jocelyn Dunn on 2016-10-15 13:46:42
Comments:
-
78. Name: Kristi Skrabo on 2016-10-15 13:48:20
Comments: According to local police, home invasions are on the rise. We need these as a deterrent NOW!
-
79. Name: Jon Kawaja on 2016-10-15 13:51:41
Comments: We live in PV with three kids and safety/security must be a higher priority. This technology is commonplace in many countries. I see this as a no-brainer.
-
80. Name: Janet Smith on 2016-10-15 13:54:18
Comments:

81. Name: Ron Dalman on 2016-10-15 14:01:06
Comments: 25 year PV resident - spouse of Jocelyn Dunn.

82. Name: Tia Miller on 2016-10-15 14:01:43
Comments:

83. Name: Paige Bishop on 2016-10-15 14:12:06
Comments: Yes, please

84. Name: Julie Hsu on 2016-10-15 14:18:19
Comments:

85. Name: Kim cashin on 2016-10-15 14:19:35
Comments:

86. Name: Katja Gagen on 2016-10-15
14:23:00 Comments: We need to protect our
community

87. Name: Kristin Brew on 2016-10-15 14:23:05
Comments:

88. Name: John Brew on 2016-10-15 14:24:19
Comments:

89. Name: Diane Garver on 2016-10-15 14:24:50
Comments:

90. Name: Randy Gabrielson on 2016-10-15 14:26:01
Comments: Let's get this done ASAP ...Safety First!!!

91. Name: Cindy Axe on 2016-10-15 14:26:26
Comments:

92. Name: Julie Dyson on 2016-10-15 14:26:56
Comments:

93. Name: S Brian Lynch on 2016-10-15 14:28:43
Comments:

94. Name: Patricia Turnquist on 2016-10-15 14:28:54
Comments:

-
95. Name: Joyce Chung on 2016-10-15 14:31:14
Comments:
-
96. Name: Lee and Kim Scheuer on 2016-10-15 14:31:55
Comments:
-
97. Name: MICHAEL RAYFIELD on 2016-10-15 14:32:58
Comments: Support
-
98. Name: Rene lacerte on 2016-10-15 14:35:43
Comments:
-
99. Name: Nicole Vidalakis on 2016-10-15 14:38:15
Comments:
-
100. Name: Clayre Fathers on 2016-10-15 14:44:34
Comments:
-
101. Name: Leslie Tincher on 2016-10-15 14:46:34
Comments:
-
102. Name: Melissa Beriker on 2016-10-15 14:49:53
Comments: Yes! Keep our community safer.
-
103. Name: Stefanie Trenchard on 2016-10-15 14:51:35
Comments:
-
104. Name: Ginny Borelli on 2016-10-15 14:58:48
Comments:
-
105. Name: Tina Molumphy on 2016-10-15 14:59:59
Comments: This was way too close to home, I won't sleep well for many weeks to come.
-
106. Name: Leeroy kloezeman on 2016-10-15 15:01:12
Comments:
-
107. Name: Nicole Rubin on 2016-10-15
15:02:00 Comments: PV
-
108. Name: Catherine Styer on 2016-10-15
15:02:41 Comments:

-
109. Name: Karen Parker on 2016-10-15 15:09:20
Comments:
-
110. Name: Hilary Giles on 2016-10-15 15:15:19
Comments:
-
111. Name: Erin McClenahan on 2016-10-15 15:15:53
Comments:
-
112. Name: Minnie Sarwal on 2016-10-15 15:16:09
Comments:
-
113. Name: Neil Weintraut on 2016-10-15 15:17:10
Comments:
-
114. Name: Gaja Frampton on 2016-10-15 15:18:42
Comments:
-
115. Name: Kay Erikson on 2016-10-15
15:18:50 Comments: We support ALPR's
-
116. Name: Patricia Law on 2016-10-15 15:19:51
Comments:
-
117. Name: Stephanie Russell on 2016-10-15 15:21:40
Comments: Yes to this!
-
118. Name: Rachel Berg on 2016-10-15 15:24:34
Comments:
-
119. Name: Jason Donahue on 2016-10-15 15:24:53
Comments: We need to overcome the fear this town experiences due to repeated thefts. ALPR's will not entirely solve, but are an important step in the right direction.
-
120. Name: Ellen Byrne on 2016-10-15
15:27:32 Comments:
-
121. Name: Holly Nybo on 2016-10-15
15:32:22 Comments:
-
122. Name: Rebecca Lynn on 2016-10-15 15:35:40

-
123. Name: Dave Howes on 2016-10-15 15:36:02 Comments: I don't see any down side.
-
124. Name: Barbara Kaiser on 2016-10-15 15:37:08 Comments:
-
125. Name: Sigal T on 2016-10-15 15:37:58 Comments:
-
126. Name: Michelle Breiner on 2016-10-15 15:43:23 Comments:
-
127. Name: Amanda smoot on 2016-10-15 15:50:22 Comments:
-
128. Name: Sangini Majmudar Bedner on 2016-10-15 15:51:00 Comments: We are 100% dedicated to the safety of our residents. We are local PV.
-
129. Name: Ursula B on 2016-10-15 15:53:43 Comments: It is high time to install ALPRs.
-
130. Name: Jeanne Kunz on 2016-10-15 15:53:58 Comments: Count 3 adults here STRONGLY in support of installing ALPERS in Portola Valley. Twice we have promptly called Sheriff re VERY suspicious cars and they responded quickly.however not in time to apprehend or spot. It takes more than calling to catch these predators! They are out of sight in seconds. And while neighborhood Watch programs are an aid, they aren't practical for many of us who cannot view our neighboring houses. Incidents vary dramatically; it would take an armed guard stationed at each doorstep to insure any level of safety. We at least deserve the aid of ALPERS.
-
131. Name: Stuart Oremland on 2016-10-15 15:54:43 Comments: two violent home invasions , in a short time period, in an area where violent home invasions used to be an extreme rarity - something that even incrementally, helps the police, is worthwhile
-
132. Name: Laura Clarkson on 2016-10-15 15:56:52 Comments:
-
133. Name: Erin and Bubba Murarka on 2016-10-15 16:00:44 Comments: We have had a suspicion visitor to our home on. They have not

134. Name: Erika Rottenberg on 2016-10-15 16:05:59
Comments:

135. Name: Mary falore on 2016-10-15
16:09:08 Comments: Move fast on this!!!!!!
Our community is scared!

136. Name: Martha Morrell on 2016-10-15 16:09:26
Comments:

137. Name: Stephen Zadesky on 2016-10-15 16:20:05
Comments: Let's not wait for another incident before taking action. The unique
geography of our town makes this technology an excellent deterrent.

138. Name: Mary Waters-Sayer on 2016-10-15 16:23:21
Comments: We must act immediately before any more people are victimized. ALPRs
have proven effective in many other communities in California (see Kentfield).

139. Name: Kristen Cheng on 2016-10-15 16:26:12
Comments:

140. Name: Teri Wolf on 2016-10-15 16:28:38
Comments: I would sleep better knowing there is an effective crime deterrent like this in
place.

141. Name: Louise Gould on 2016-10-15 16:31:49
Comments: We can't come to evening meetings and hope we can be represented at the
next one by signing this petition.
Thank you.

142. Name: Richard Zeren on 2016-10-15 16:36:01
Comments: As a Ladera resident, I'd prefer the readers be installed on Alpine Rd.
between 280 and La Cuesta Drive. I'm willing to contribute a per-capita amount to fund
them.

143. Name: Kim zamboldi on 2016-10-15
16:36:10 Comments:

144. Name: Elizabeth Gillbrand on 2016-10-15 16:40:23

-
145. Name: Rosalie Cornew on 2016-10-15 16:41:11
Comments:
-
146. Name: Jacqueline Kubicka on 2016-10-15 16:49:30
Comments:
-
147. Name: Jennifer Hooper on 2016-10-15 16:54:29
Comments:
-
148. Name: Natasha Kurtova on 2016-10-15 16:55:50
Comments:
-
149. Name: Todd and Erika White on 2016-10-15 16:59:36
Comments:
-
150. Name: Lisa Vito Palermo on 2016-10-15 17:02:56
Comments: PV
-
151. Name: Jim and Maureen Sansbury on 2016-10-15 17:05:47
Comments:
-
152. Name: Suchitra Shah on 2016-10-15
17:09:40 Comments:
-
153. Name: Taylor Hinshaw on 2016-10-15 17:21:14
Comments: no brainer. While we're at it, I would support making it for residents to install security fences, driveway gates and exterior lighting. There is a reason why the crime wave is happening in PV and not woodside, Los altos hills and atherton. Those properties are typically much more secure and difficult to access.
-
154. Name: Brenda and Greg Munks on 2016-10-15 17:21:28
Comments: We r Pv residents and absolutely support installation of ALPR's
-
155. Name: Diane shattuck on 2016-10-15 17:38:14
Comments:
-
156. Name: Julie seipp on 2016-10-15 17:55:39
Comments:
-
157. Name: Charles Z on 2016-10-15 18:05:08

-
158. Name: Danielle Z on 2016-10-15 18:05:51
Comments:
-
159. Name: Sally Screven on 2016-10-15 18:26:42
Comments:
-
160. Name: Heather Prella on 2016-10-15 18:41:14
Comments:
-
161. Name: Frederick Prella on 2016-10-15 18:53:45
Comments:
-
162. Name: Jocelyn Swisher on 2016-10-15 19:01:19
Comments:
-
163. Name: Jeff Garver on 2016-10-15 19:30:51
Comments:
-
164. Name: Brian Harley on 2016-10-15 19:53:15
Comments:
-
165. Name: Kellen Riley on 2016-10-15
20:00:10 Comments:
-
166. Name: Martha Josephson on 2016-10-15 20:01:10
Comments: Pis install the readers.
-
167. Name: Jon Carter on 2016-10-15 20:09:50
Comments:
-
168. Name: Stig Nybo on 2016-10-15 20:10:18
Comments: Please install!
-
169. Name: Anne Hillman and George Comstock on 2016-10-15 20:26:43
Comments: Thank you for organizing this petition!
-
170. Name: Hector Ribera on 2016-10-15 20:29:57
Comments:
-
171. Name: Joi Deaser on 2016-10-15 20:39:12

-
172. Name: Shameela Rizvi on 2016-10-15 20:54:11
Comments:
-
173. Name: Ching Wu on 2016-10-15 21:05:53
Comments:
-
174. Name: Tobias Freccia on 2016-10-15 21:22:53
Comments:
-
175. Name: Bruce Kubicka on 2016-10-15 21:29:23
Comments:
-
176. Name: Tammy Crown on 2016-10-15
21:52:48 Comments:
-
177. Name: Alice Schenk on 2016-10-15 22:08:55
Comments:
-
178. Name: Jaya Virmani on 2016-10-15 22:24:18
Comments:
-
179. Name: Harold Shattuck on 2016-10-15 22:29:10
Comments:
-
180. Name: Kathy and Mike Scandalios on 2016-10-15 22:32:58
Comments: Thank you for coordinating & please install the ALPR's. I appreciate Greg Munk's feedback & I feel that if he supports ALPRs so should the town.
-
181. Name: Joel Phillips on 2016-10-15 22:53:56
Comments:
-
182. Name: Elizabeth Cullinan on 2016-10-15 23:22:31
Comments:
-
183. Name: Thomas Cullinan on 2016-10-15 23:24:06
Comments:
-
184. Name: Dan Cornew on 2016-10-16 00:04:29
Comments: Everything helps. So lets do what we can.
-

Comments:

186. Name: Gary Godfrey on 2016-10-16
00:13:57 Comments:

187. Name: Emily C Kapur on 2016-10-16
01:18:19 Comments:

188. Name: Paul Kapur on 2016-10-16 01:18:50
Comments:

189. Name: Rachel Bright on 2016-10-16
01:32:21 Comments:

190. Name: Christopher White on 2016-10-16 01:34:48
Comments:

191. Name: Matt Gebhart on 2016-10-16 01:38:48
Comments:

192. Name: Jacqueline Howe on 2016-10-16 01:38:49
Comments:

193. Name: Bradley Howe on 2016-10-16
01:41:19 Comments:

194. Name: Cynthia Dorrell on 2016-10-16 01:45:00
Comments:

195. Name: Hilary Gebhart on 2016-10-16 02:31:54
Comments:

196. Name: Claudia Mazzetti on 2016-10-16 03:31:49
Comments:

197. Name: Steve Nash on 2016-10-16
04:54:48 Comments:

198. Name: Mark Fletcher on 2016-10-16 05:07:48
Comments:

-
213. Name: Larry Tesler on 2016-10-16 14:13:26
Comments:
-
214. Name: Glenn Reid on 2016-10-16 14:28:11
Comments:
-
215. Name: Lisa and Daniel Hill on 2016-10-16 14:38:50
Comments:
-
216. Name: Joan Finnigan on 2016-10-16 15:03:21
Comments:
-
217. Name: Michelle Rapp on 2016-10-16 15:07:47
Comments: We support the use of ALPR as a tool for crime deterrence
-
218. Name: Eiri Inenaga on 2016-10-16 15:17:11
Comments: Very important for the safety of our community!
-
219. Name: Kevin lynch on 2016-10-16 15:19:10
Comments:
-
220. Name: Todd Reimund on 2016-10-16 15:33:40
Comments:
-
221. Name: Kathryn Hall on 2016-10-16 15:36:32
Comments: I support installing a camera system
-
222. Name: Karin Wick on 2016-10-16 16:00:47
Comments: I support the installation and use of ALPRs. Let's make our community safe again.
-
223. Name: Cathy Carlson on 2016-10-16 16:02:58
Comments:
-
224. Name: Mark Carlson on 2016-10-16 16:05:07
Comments:
-
225. Name: Sue and Gene Chaput on 2016-10-16 16:09:40
Comments: We are in favor of installing ALPRs in the Town of PV (and have been since Day 1). They have proven to be effective crime stoppers/solvers and a strong deterrent

-
226. Name: Nancy Thompson on 2016-10-16 16:18:02
Comments:
-
227. Name: Ted Walker on 2016-10-16 16:20:49
Comments:
-
228. Name: Soa Tsung on 2016-10-16 16:21:48
Comments:
-
229. Name: Ezra Scheff on 2016-10-16 16:22:06
Comments:
-
230. Name: Ann Ganesan on 2016-10-16 16:46:18
Comments: I am signing this mostly based on Greg Munk's comments as I believe he has a good understanding of the pros and cons of ALPRs.
-
231. Name: Denise Lautmann on 2016-10-16 16:49:22
Comments: I wholeheartedly support the installation of ALPR's!
-
232. Name: Ajit Shah on 2016-10-16 16:57:39
Comments:
-
233. Name: Becky Hilderbrand on 2016-10-16 17:02:31
Comments:
-
234. Name: Paul Russell on 2016-10-16 17:03:35
Comments: Please give this immediate approval
-
235. Name: Kay and Barry Blocker on 2016-10-16 17:19:06
Comments: Please install as soon as possible. And I hope the residents of Ladera can be included.
-
236. Name: Kathy Feldman on 2016-10-16
17:22:42 Comments:
-
237. Name: Steve Rowe on 2016-10-16 17:24:45
Comments: Absolutely approve installation of ALPR's. I assume it will benefit Los Trancos/Vista Verde area as well.
-

-
239. Name: Michele Turner on 2016-10-16 17:33:33
Comments:
-
240. Name: Jamie Spencer on 2016-10-16 17:40:12
Comments: I live just across Santa Clara County, although I have a PV mailing address. This would definitely benefit me, as well. Not sure my vote would count.
-
241. Name: Matthew Hall on 2016-10-16 17:52:24
Comments:
-
242. Name: Laura symon on 2016-10-16
17:55:50 Comments:
-
243. Name: Marion Rittler on 2016-10-16 18:01:31
Comments: I support this as well as other crime deterrent measures. We live in PV
-
244. Name: Gerald Marxman on 2016-10-16 18:03:59
Comments:
-
245. Name: Darci Reimund on 2016-10-16
18:19:56 Comments:
-
246. Name: Tracy Jones on 2016-10-16 18:20:15
Comments:
-
247. Name: Monika Cheney on 2016-10-16
18:36:41 Comments:
-
248. Name: Paul Wick on 2016-10-16 18:51:07
Comments: Do the right thing to make PV safe again.
-
249. Name: Wayne C Schar on 2016-10-16
19:33:16 Comments:
-
250. Name: Winnie Chan on 2016-10-16 19:44:09
Comments:
-
251. Name: Anu khatod on 2016-10-16 20:02:11

-
252. Name: Dale Pfau on 2016-10-16 20:20:33
Comments: Fully support ALPR's in Portola Valley. Always have.
-
253. Name: Vanessa Maffia on 2016-10-16
20:36:30 Comments:
-
254. Name: Kris Moriarty on 2016-10-16
20:39:27 Comments:
-
255. Name: Michael Maffia on 2016-10-16 20:44:03
Comments:
-
256. Name: julie dickerson on 2016-10-16 21:14:31
Comments:
-
257. Name: Andrew R Byrne on 2016-10-16 21:15:47
Comments:
-
258. Name: Colleen Barton on 2016-10-16 21:17:42
Comments:
-
259. Name: Pamela Northan-Kelly on 2016-10-16 21:19:33
Comments: In light of the recent violent home invasion I give my 100 percent support for ALPR's.
-
260. Name: Allison Watten on 2016-10-16 21:24:06
Comments:
-
261. Name: Sangini Majmudar Bedner on 2016-10-16 21:44:10
Comments:
-
262. Name: Peter and Kathryn Fitzgerald on 2016-10-16 21:49:09
Comments: As homeowners who have been burglarized we support the use of automated license plate readers in an effort to keep our neighborhoods safe.
-
263. Name: Nelly Emmerson on 2016-10-16 21:49:25
Comments: I 100% support the immediate installation of ALPR in Portola Valley. With Greg Munks behind this, it seems the best way to assist law enforcement in our community. I live in PV.
-

265. Name: Kathryn Crawford on 2016-10-16 22:33:19
 Comments: Totally support ALPR's in Portola Valley.

266. Name: Kerry Brown on 2016-10-16 22:55:34
 Comments: Big Data is advancing rapidly, and the efficiency of correlating plates to potential people of interest will only improve with time. Driving is a privilege and the roads are public.

267. Name: Suzanne Pfeffer on 2016-10-16 23:05:49
 Comments:

268. Name: Em on 2016-10-16 23:11:17
 Comments:

269. Name: Damo on 2016-10-16 23:14:54
 Comments:

270. Name: Rosanna casper on 2016-10-16 23:29:58
 Comments:

271. Name: Susan and Mike Mokolke on 2016-10-16 23:33:56
 Comments:

272. Name: Michelle Walker on 2016-10-16 23:40:35
 Comments:

273. Name: robin murray on 2016-10-16
 23:48:40 Comments:

274. Name: Heather Asborn on 2016-10-17 01:46:37
 Comments:

275. Name: Firouzeh Murray on 2016-10-17 03:07:31
 Comments:

276. Name: Todd Scheuer on 2016-10-17 03:26:39
 Comments:

277. Name: Karen Askey on 2016-10-17 03:38:54

278. Name: Craig Sander on 2016-10-17 03:44:34
Comments:

279. Name: Don Creevy MD on 2016-10-17 04:05:25
Comments:

280. Name: Ginger Creevy on 2016-10-17
04:07:44 Comments:

281. Name: Lela Blankenberg on 2016-10-17 04:12:23
Comments:

282. Name: Elizabeth Graver on 2016-10-17 05:02:30
Comments:

283. Name: Vldya Setlur on 2016-10-17 06:25:40
Comments: I absolutely support ALPRs as one of many ways to keep our town safe.

284. Name: Lynn Deutsch on 2016-10-17 15:40:21
Comments:

285. Name: Richard Zamboldi on 2016-10-17 15:41:19
Comments: Need a complete review and solution with input from sheriff, please.

286. Name: Laural Lynch on 2016-10-17 16:04:07
Comments:

287. Name: Melanie Raanes on 2016-10-17 16:29:05
Comments:

288. Name: Jennnifer Scher on 2016-10-17 16:33:09
Comments:

289. Name: Linda Wong on 2016-10-17 16:49:25
Comments:

290. Name: Lyndsay Lyle on 2016-10-17 17:43:00
Comments: Supportive of ALPRs

291. Name: Aisha Gillett on 2016-10-17 17:56:28

Tue 10/18/2016 8:38 AM

PVForum@yahoogroups.com; on behalf of

Karen Maple photo@allaboutimages.com [PVForum] <PVForum-noreply@yahoogroups.com>

[PVForum] Crime Prevention - Networked Motion Detected Bright Lights

Donald Perryman; PVForum@yahoogroups.com; MaryannMoise-DG <Mderwin@portolavalley.net>;

Craig Hughes <chughes@portolavalley.net>; JohnRichards-DG <JRichards@portolavalley.net>;

AnnWengert-DG <AWengert@portolavalley.net>; Jeff Aalfs <JAalfs@portolavalley.net>; Jeremy Dennis

jdennis@portolavalley.net

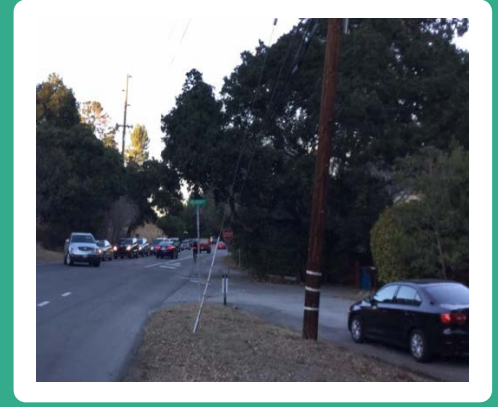
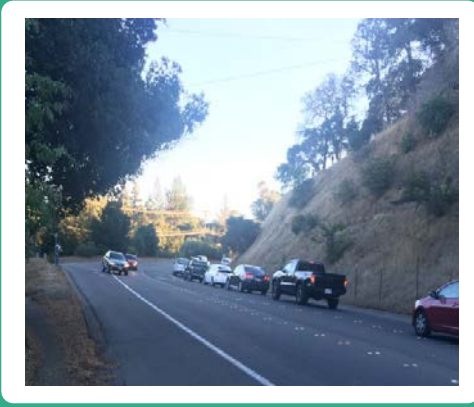
I would like to ask the town, town council and ASCC to investigate viable motion detection lighting solutions and ordinances.

With LED lighting and smaller footprint motion detectors in the marketplace, are there solutions now where we can add motion detector lights along driveways or other locations that may have minimal impact on aesthetics, wildlife or ambience? If set back enough from the street, cars or dog walkers would not set off these motion detectors and the aesthetic would remain the same. But criminals would be quickly alerted as would residents and neighbors. If a homeowner was home and the motion lights went on, they may have time to call the sheriff before a home invasion began.

Many websites indicate that motion detector lights are a deterrent, but a thorough investigation would be very helpful in determining whether they are or not. Hopefully there are some solutions that would potentially only impact larger animals such as deer, and that impact could hopefully be minimized.

The town has done a great job in the past investigating things in depth. I think this area is another one that requires some investigation and a good recommendation from the ASCC on details for a viable implementation with minimal impact to our current ambience or wildlife. I could envision a recommendation that allows two driveway lights set back 30 feet from the street and one at each side gate for example.

Karen



ALPINE RD COMPREHENSIVE CORRIDOR STUDY: COMMUNITY MEETING #3

The County of San Mateo is announcing the 3rd and final community meeting for the comprehensive corridor study of Alpine Road between Junipero Serra Boulevard and County Limit south of La Mesa Drive. Kimley-Horn, our consultant, will be presenting an update on the progress of the study. Come learn about the proposed phases of the project, and help us prioritize items in each phase so the County and its consultant can continue to focus on issues that are of concern to the community.

Tuesday November 1, 2016

7pm - 8:30pm

Woodland School

360 La Cuesta Drive, Ladera

Parking is limited. Please carpool if possible!

*A copy of the presentation and conceptual drawings will be posted at <http://publicworks.smcgov.org/alpine-road-traffic-corridor-study> by October 24, 2016

For more information contact Hanieh Houshmandi

hhoushmandi@smcgov.org or 650.599.1481





STATE SENATOR
JERRY HILL

~ 13TH DISTRICT ~

Cordially Invites You to

JAVA WITH
JERRY
IN PORTOLA VALLEY

Join Senator Jerry Hill for a cup of coffee and conversation. Bring your ideas, questions, and concerns about legislative issues affecting the community.

Konditorei

Friday, October 28th, 2016

9:00 am – 10:00 am

3130 Alpine Road #284, Portola Valley, CA 94028

He'll provide the coffee at no taxpayer expense.
Sit down and stay awhile, or just drop in for a brief chat.
No appointment or RSVP necessary.

FOR INFORMATION CALL THE DISTRICT OFFICE AT (650) 212-3313.





EL SENADOR ESTATAL

JERRY HILL

~ DEL DISTRITO 13 ~

Cordialmente Le Invita a

CAFÉ CON JERRY EN PORTOLA VALLEY

Acompañe al Senador Jerry Hill con una taza de café y conversación. Traiga consigo sus ideas, preguntas y preocupaciones sobre temas legislativos que afectan su comunidad.

Konditorei

Viernes, 28 de octubre de 2016

9:00 am a 10:00 am

3130 Alpine Road #284, Portola Valley, CA 94028

El proveerá el café sin costo alguno al contribuyente. Siéntase y quédese un rato o simplemente pase para tener una breve conversación. No se necesita una cita o confirmar su asistencia.

PARA MÁS INFORMACIÓN LLAME A LA OFICINA DISTRITAL AL (650) 212-3313.

