

PLANNING COMMISSION MEETING, TOWN OF PORTOLA VALLEY, JANUARY 20, 2010,
SCHOOLHOUSE, TOWN CENTER, 765 PORTOLA ROAD, PORTOLA VALLEY, CA 94028

Chair McKitterick called the meeting to order at 7:35 p.m. Ms. Lambert called the roll:

Present: Commissioners Gilbert, Von Feldt and Zaffaroni, and Chair McKitterick (dep. 8:45 p.m.)
Absent: Commissioner McIntosh
Staff Present: George Mader, Town Planner
John Richards, Town Council Liaison
Ted Driscoll, Town Council
Leslie Lambert, Planning Manager

ORAL COMMUNICATIONS: None

REGULAR AGENDA

- (1) Study Session: Preliminary Review of the Town's Geologic and Ground Movement Potential Maps Related to Zoning Provisions and Land Use Policies

Commissioner Gilbert recused herself because her residence was on a parcel that contained an inferred trace.

Town Planner Mader reviewed the staff report dated 1/6/10. While the changes to the zoning ordinance required a public hearing process, revisions to the geologic maps and Resolution 2279-2006 did not. However, staff recommended that all of the changes be put through a public hearing process so that they could be considered at one time. As set forth in the staff report, he described changes to: a) the Geologic Map; b) the Ground Movement Potential Map; c) Resolution 2279-2006; and d) the zoning ordinance. He discussed impacts on properties due to the San Andreas Fault and other faults and the community meetings held to date. He reviewed provisions in the zoning ordinance that addressed replacement of voluntarily or involuntarily damaged buildings in fault setbacks.

Ted Sayre, Town Geologist's office, said new definitions for known faults and inferred faults had been developed and were much more detailed than before. Where fault investigations pinned down exact locations of traces, they became "known." Some segments that had been mapped "known" before but didn't have geomorphic expression, historic rupture data, or fault study were now mapped as "inferred." There were quite a few changes to the types of faults even though the alignments didn't change greatly. Town Planner Mader noted that the zoning requirement stipulated that no buildings for human occupancy should be located closer than 50' from a fault trace mapped as a "known" location; Resolution 2279-2006 said construction of new buildings was not allowed. The Commission would need to decide which way it wanted to go.

Responding to Commissioner Von Feldt, Town Planner Mader said he thought there were some structures that the San Andreas Fault passed directly under. He would need to look at the map to find out how many. Commissioner Von Feldt said the Town should know how many structures were involved—especially because the San Andreas was much more active and potentially more dangerous than the inactive faults. Town Planner Mader added that the Town was dealing with the best science possible. Unless someone could disprove what was thought to be the best information, that was all the Town had to go on. Some people would find that a fault affected a structure that they might not have been aware of. Commissioner Von Feldt said the Town should know how many were affected, and it should be communicated to those homeowners. Responding to Commissioner Von Feldt, Town Planner Mader said every property owner along all of the traces had been invited to the Saturday meetings. When this came for public hearing, everyone along those faults would again be notified. Ms. Lambert added that this meeting had also been noticed to everyone who was affected by the maps.

Responding to Commissioner Von Feldt, Town Planner Mader said the zoning ordinance excerpt in enclosure 6 showed the proposed revisions to Section 18.46.050; also included in enclosure 6 was a copy of Chapter 18.46 of the existing ordinance with the proposed changes to Section 18.46.050 annotated by hand.

Commissioner Von Feldt asked how many properties would lose a significant amount of buildable land if the zoning ordinance was changed to prohibit any structures in the Pf zone. Town Planner Mader said that could be determined by using the maps. There might be structures that were guesthouses, cabanas, sheds, horse stables, etc. Responding to Commissioner Von Feldt, he confirmed that existing structures would not have to be removed. Commissioner Von Feldt said she was inclined to disallow new buildings in the Pf zone. Something might start out being non-habitable but was used quite a bit and presented a safety concern. She would like to explore the issue and have some exception to address very small lots that had a large part of the property within the Pf zone when the property owner just wanted, for example, a tool shed. For bigger lots, they could find a more suitable place for an out structure. As indicated in the staff report and his memo of 12/8/09 (enclosure 8), Town Planner Mader said it was difficult to define something that was not for human occupancy. You could have a storage building with electricity and no plumbing; no plumbing would probably rule it out as a living space. Commissioner Von Feldt reiterated that she wanted to know how many properties would be impacted if the Town said no structures in the Pf zone.

Commissioner Von Feldt asked what could be done to improve the safety of homes across a fault. Mr. Sayre said it made a big difference which faults you were talking about. The San Andreas Fault would be a much more severe situation. The concern with the Westridge trace was primarily with sympathetic movement. With the San Andreas breaks, it was a weak surface that might take up displacement on the order of inches and do some serious damage to foundations but might not be life threatening. There was not a lot known about the fault traces in terms of the last time it ruptured, recurrence intervals, etc. Consequently, they were being treated very carefully with living spaces kept from being built astride those faults. With respect to what could be done to protect yourself, there had been discussion about excavating the ground beneath structures, putting down layers of pebbles, and putting in a rigid shallow mat foundation. The State had not accepted that approach. Responding to Commissioner Von Feldt, he said one option was to do investigation and find out if the map that showed you were sitting on top of a fault was correct. If you knew that with certainty, your options would be to live with that or rebuild off that location.

Commissioner Zaffaroni said she needed a more organized way of going through this material. There was a real range of material. Referring to the proposed revisions to the Resolution (enclosure 3), Section VI, Geologic Maps, Effect of Engineered Designs, definition of "undisturbed ground," she felt that should be placed in the definition section. It might be relevant for other parts of the Resolution. Referring to Table 1 and the note that indicated "acreage figures for houses are for the individual parcel area for each house," she asked why acceptable land use would change with parcel size. She realized that language went back a long way but questioned why parcel size would make a difference in terms of acceptable land use. She understood why it would change with the underlying geology but not with parcel size. Town Planner Mader said he recalled that the thinking was that if you had a large lot, the total potential damage would be less than it would be for a lot of small lots. If it was questionable geology, you might allow low density. Commissioner Zaffaroni noted that what was permitted on the different size lots was very similar. Town Planner Mader confirmed for Commissioner Zaffaroni that: a) the 3-acre column was for 3-acres and above; and b) P in the Pf designation indicated potential movement. Mr. Sayre said "primary" was used in the description to differentiate it from secondary ground displacement, such as ground warping and other seismic effects that were considered in the wider Pf zone in the past. Since that had been narrowed, the primary rupture zone of the fault was the reason for changing the description. Commissioner Zaffaroni said the key to the table was not clear. She asked whether "Pf" meant potential or primary. This particular table had always been somewhat complex, and she thought it should be clarified—at least the meaning of "P," which seemed to have two different contexts. Town Planner Mader said "P" modified a lot of the designations. "Pf" meant potential movement along a primary ground rupture. Commissioner Zaffaroni said "primary" made sense because you were talking about a rupture rather than potential movement. Mr. Sayre

agreed the wording should be consistent throughout the documents and should be looked at. Town Planner Mader noted that the Table was done many years ago and was the first attempt to correlate land uses with the geology. There was a lot of judgment required, but it served as a guide. Commissioner Zaffaroni said since it was being looked at again, there was an opportunity to try to clarify things to make it more readily understandable. Each time she looked at it, she found issues that were not clear. Clarifying what "P" meant was straightforward.

Responding to Commissioner Zaffaroni, Town Planner Mader confirmed that just the reference to Section 18.58.030 of the zoning ordinance would be left in Section VIII of the Resolution. Commissioner Zaffaroni said that language was awkward the way it was worded. She suggested "of the Zoning Ordinance" follow "Section 18.58.030." She noted that she had a lot of comments on Section 18.58.030.

Chair McKitterick asked for public comment.

Rebecca Miller, Alpine Rd., said she appreciated the thought and attention given to this. It sounded like a very rational approach.

Martin Miller [*inaudible*], Alpine Rd., said a geological survey showed a portion of his property should be listed as potential movement/shallow landsliding rather than active. He asked what type of data/survey had been used to formulate the Town's map in the 1970s. Chair McKitterick said studies had been done since then, and the understanding had increased. Mr. Sayre said studies had been done along the fault zones. But, when you started looking in the hills in terms of moving deep landslides, shallow, active, dormant, etc., there were several different categories and some complexity. A number of students from Stanford had assisted in the mapping. The intent was to have a uniform system of recognition of various slope processes and the potential for future movement. In some areas, there were reasons for modifications if it could be supported by data; there was a mechanism in place for allowing modifications. A lot of the hillsides were associated with slope movement categories.

Councilmember Driscoll encouraged the Commission to pay attention to the clauses that addressed: a) when you could reconstruct; and b) the 50% value. There was a lot of ambiguity in the Town about whether that was 50% of their 1947 construction value or their current sale value. The map was largely science and relatively modern science. He thought the policies associated with it still had some ambiguity around the cost issue. The Council had discussed looking at things like the floor area of the house affected by the damage as opposed to the cost. That might be a better way of measuring it. Responding to Chair McKitterick, Town Planner Mader said most jurisdictions used 50% of the current value or current appraised value. Councilmember Richards [*inaudible*] said that was commonly applied to any structural change to a house. He discussed other methods used to determine value. Ms. Lambert noted that the new Chapter 7A of the Building Code included a definition. Chair McKitterick added that there could be an appraisal cost of replacement, current depreciated value, value as a potential rental, etc. He agreed it should be clarified and asked Town Planner Mader to provide some options. It was also tied to the requirement to upgrade to current building codes. Town Planner Mader noted that the County assigned values for existing structures and then looked at the value of the new structure and made a comparison. Mr. Miller said dollar per square foot varied. He suggested giving some consideration to the percentage of the square footage of the structure prior to the damage. Councilmember Driscoll said he wanted to come up with something that was well-defined and sensible. Town Planner Mader said he would provide some options.

Mark Radcliff, Sausal, said he now lived on a trace and understood that for an inactive trace, movement was a couple of inches. He felt this was a fairly dramatic set of regulations to apply to houses on those traces. He wanted to understand more about the nature of the science that was used here. If you were actually sitting on a fault, that was something that you would want to know with a fair amount of certainty. Responding to Chair McKitterick, Mr. Sayre said there was no data as to when the north and south inactive faults last ruptured, recurrence, etc. There were a lot of unknowns associated with these traces. Instead of being right lateral faults, they were thrust faults that took up some compressional motion instead of plates

moving north and south. The displacements along these faults could be minor at the surface, but there could be quite a bit of ground disturbance associated with the thrust fault; that was a little different than a right lateral fault. More data about these traces indicated that they became more of a scientific concern because of the potential of having earthquakes of their own rather than acting in a sympathetic manner. Additional field mapping had been conducted by Ben Cage out of Stanford. He was able to look at road cuts and available exposures and distinctive soil types, which formed over the different bedrock materials. The new mapping was much refined over the previous Town map. He checked as many locations as he could find along roadways to verify that the mapping was correct. In every case he saw, it was right on the money.

How it might wiggle between road exposures was an open question. People were being asked to look at the bedrock types and ensure that the structure was not built astride these faults when they were proposing new construction. These faults were real and were relatively easy to find because of the different types of bedrock on each side. He could not say with certainty on any specific property whether it was exactly where it was shown on the map. Responding to Chair McKitterick, he said the location of the lines changed based on some new field mapping that was done of the hillside area around early 2000.

Chair McKitterick left the meeting and passed the gavel to Vice Chair Zaffaroni.

Referring to the changes to Section 18.58.030 of the zoning ordinance on special building setbacks along faults (enclosure 4), Vice Chair Zaffaroni said there were a lot of changes. She asked how the setbacks had been determined for fault traces and why that was rational based on risk. With respect to the known trace, there was a 50' setback from the side; for inferred, it was a 100' from the side; and for en-echelon, it was 100' from the center line. She asked if 100' from the center line for en-echelon ended up being a greater or lesser setback than the setback for inferred. She did not know how wide the traces were or why that decision had been made. Responding, Mr. Sayre said there was a special pattern shown on the map; from the center, you could measure the distance. There was some data from the Town Center study about the length of a few of these en-echelon breaks that went through the Town's property. That was looked at from a diagonal orientation to get a sense of where a reasonable setback from the edges of those diagonal tears would be—considering what was known about their lengths. A hundred feet from the center resulted in about 40-50' setback from the edge. Town Planner Mader said if there was a 40' break, that was 20' on each side of the center. With a 100' setback, that left 80' from the edge of those en-echelon breaks. He used the map to illustrate. Mr. Sayre said there was not a lot of data on the en-echelon and a little bit larger setback was included because of the unknown situation with those traces. He confirmed for Vice Chair Zaffaroni that it was generally about 80' from the edge; that was based on some pretty limited knowledge but was an attempt to start addressing the en-echelon character of the fault, which had a wider footprint than a central rupture. Responding to Vice Chair Zaffaroni, he said with inferred, it was unknown where the damage might occur within that 100' setback. It could be right in the center or off-center in its orientation. It was given a broader setback to reflect the uncertainty of exactly where the trace was. The map showed a dotted line but in actuality, the real trace could be to one side or the other of that dotted line. The setback had been increased to reflect the greater degree of uncertainty of the alignment of the trace. Responding to Vice Chair Zaffaroni, he said aerial photographs had been used to show lineations. Geologically reasonable projections had been connected between known points, which was the basis for plotting it on the map. The basis was no where near as strong as the solid line of a known trace.

Responding to Commissioner Von Feldt, Mr. Sayre said there were indications that there was en-echelon on Spring Down. It occurred where there was extremely young, unconsolidated alluvial types of deposits that didn't express a failure at the ground surface. Where that type of earth material was was known in the valley. It had been extended based on where there was data that showed en-echelon behavior, which was wider than just the Town Center. It was believed to be only along the San Andreas because it was a behavior associated with right lateral faults—not associated necessarily with a thrust fault. Responding to Vice Chair Zaffaroni, he said there was a huge amount of confusion on the study done on Spring Down because of the indications of strangely oriented signatures of fault displacement; it was not known what that meant. But, in the Town Center study, some of these subdued signals had been chased down. There had been a lot more good science done to figure out what was going on.

Responding to Vice Chair Zaffaroni, Mr. Sayre said the geologic opinion was that there was not anywhere near the same level of rupture hazard along the unknown fault traces in Town as there was along the San Andreas. For the Loma Prieta earthquake, there were fractions of inches to inches of offset along some of these traces that ran through Cupertino, Saratoga and Los Altos Hills. That would not qualify as a primary fault rupture. It was a sympathetic phenomenon with a little bit of compressional slip taken up as a result of a nearby major earthquake. But, there was not rupture at depth along those thrust faults as part of the Loma Prieta earthquake. It was known that the San Andreas would display primary rupture and feet of offset. Vice Chair Zaffaroni said she understood the distinction between the two and asked if Pf ever developed with these kinds of faults. Mr. Sayre said it was very unlikely, and there was no evidence that it was a real hazard at this point in time. At some point in the future, additional understanding might be gained. Town Planner Mader noted that the San Andreas was a major plate boundary. Mr. Sayre agreed and described the Pacific Plate and North American Plate. He said these other faults took up a small bit of convergence and expressed a little bit of compression between the plates.

With respect to the habitable versus non-habitable issue, Town Planner Mader said this was a fundamental issue that came up in several places. As set forth in his memo of 12/8/09 (enclosure 8), he reviewed the provisions of concern in the zoning ordinance and Resolution. Vice Chair Zaffaroni said any building for human habitation or occupancy was generally going to require a greater investment than non-habitable structures like sheds, storage buildings, or barns. Therefore, the idea of protecting life and property was perfectly consistent with talking about habitable structures. If someone wanted to put up a shed or carport, it might not warrant the same level of Town review where it might be an issue. She did not see it as an inconsistency. Town Planner Mader said in one place it said "buildings" and in another it said "buildings for human occupancy." The question was whether to follow the Resolution or the zoning ordinance. It could be defined however the Town wanted. Vice Chair Zaffaroni agreed it should be clarified but did not see it as a direct inconsistency. Town Planner Mader said administratively, the differences were perplexing and needed to be clarified.

Commissioner Von Feldt said it should be restricted so that no building should have any occupancy for any period of time. But, she wanted to know how many properties in Town would lose quite a bit of buildable space. She was not concerned about the larger properties. She suggested "...only if there wasn't a more suitable area elsewhere on the property." If there was somewhere else on the property that was not in the Pf zone, that was where, for example, a studio could be built. In general, she would like it to be more conservative.

Town Planner Mader said the intent of the suggested revision to Section 18.58.030.F, non-habitable buildings (enclosure 4), was to address this question. Vice Chair Zaffaroni said it was a very important subject, and it would be preferable to have input from the full Commission prior to the public hearing. In terms of the suggested language, she thought it would be difficult to apply Section 18.58.030.F.3, which stated "the building will be located as far as possible from the trace while allowing the building to serve its function." She questioned how someone would apply "as far as possible from the trace." If there was another location clear across the parcel, you might end up building over there if you took that language literally. She suggested the language indicate that if there was no viable alternative location, the building could be closer to the fault. There was nothing in the proposed language to indicate that viable alternative locations needed to be examined. Town Planner Mader said the intent was to address structures in the setback zone and that they should be as far from the trace as possible. If you were outside the setback, it was not an issue. Vice Chair Zaffaroni said it should indicate that it was within the setback. Town Planner Mader noted that Commissioner Von Feldt preferred a more conservative approach. If there was a consensus on that, then the question was what were those things that you might allow.

Referring to enclosure 8 and his memo of 12/8/09, Town Planner Mader confirmed for Vice Chair Zaffaroni that: a) the Alquist-Priola Earthquake Fault Zoning Act provided controls on setbacks from faults for structures for human occupancy; and b) the regulation in the zoning ordinance was narrower than the intent statement. He noted that the State act went into hours of occupancy, etc. One approach would be to determine what was the probability someone would be injured. Vice Chair Zaffaroni said there had been

issues in the past where non-habitable structures had been inhabited by renters, etc. That was why the Town went to such great extremes with secondary buildings to try to make sure that they didn't end up being inhabited. As pointed out in the memo, there was also some concern for animal welfare. If you could avoid putting a structure right on the edge of the fault—especially if there were alternative locations—that was a desirable policy. But, it might be a lesser standard than the basic human occupancy standard. There were also policy goals to avoid property damage. She reiterated that she felt the whole Commission needed to discuss this.

Referring to Section 18.46.030 (enclosure 6), Vice Chair Zaffaroni said this section as a whole covered replacement of involuntarily damaged structures, voluntary demolition of structures and replacement of buildings in earthquake fault setbacks. How to determine 50% of a structure's current appraised value needed to be discussed by the whole Commission. Town Planner Mader confirmed that he would bring forward some suggestions for valuation. Responding to Commissioner Von Feldt, he said the "current appraised value" would be the value just prior to the damage. It was the same situation for a fire. He noted that most of the material in this section was reviewed at great length by the Planning Commission earlier. The recommended changes to Section 18.46.050 applied to structures in fault setbacks. Vice Chair Zaffaroni said the changes made sense and were consistent. With respect to Section 18.46.050.1 and .2, she questioned whether .2 should be changed in light of changes to Section 18.58.030. Section 18.46.050.2 said the structure shall be rebuilt at least 50 feet from the fault rupture zone, but Section 18.58.030 now specified the various setbacks based on whether it was a known, inferred or an en-echelon trace. Mr. Sayre said if there was an en-echelon trace that was 100 feet long, you would still want to stay back 50 feet. Vice Chair Zaffaroni said the Town was now requiring a setback from en-echelon of 100 feet. Town Planner Mader said where the breakage would be was not known. If there was a rupture on the ground, you could see where it was and map it.

Ms. Gilbert asked if Pf was a presumed fault rupture zone. Mr. Sayre said it was a potential primary rupture. Commissioner Gilbert said Section 18.46.050.2 indicated you had to build at least 50' from the fault rupture zone. Mr. Sayre pointed out that that was from a known rupture location. Responding to Commissioner Gilbert, Town Planner Mader confirmed that you could build 1 foot outside of the fault rupture zone. Mr. Sayre said the intent was 50' from the primary fault rupture. You might have a primary rupture with feet of offset; you might walk 100 feet away and have 4 inches of rupture on another offset; you might walk 1,000 feet away and have 1.5 inches of movement. The scale of movement was attempting to be caught in the Pf zone. Commissioner Gilbert said it was confusing because the term "fault rupture zone" was being used as the definition of Pf. Town Planner Mader said he would review it.

Vice Chair Zaffaroni noted that the 50% language was in other sections of the zoning ordinance. She suggested looking at each of those sections to ensure they were consistent. Town Planner Mader suggested looking at it in this context first. If it needed to be changed, the other sections could be reviewed.

Responding to Vice Chair Zaffaroni, Town Planner Mader said enclosure 9 showed a new proposed section (18.46.051) that addressed remodeling and additions to structures that had not been damaged in earthquake fault setbacks. This was one of the questions that came up in the community meetings. Enclosure 9 also included a summary of limitations on new buildings and reconstruction of damaged buildings along earthquake faults. Responding to Commissioner Von Feldt, Vice Chair Zaffaroni said currently the Town did not allow enlargement of non-conforming structures. Town Planner Mader said his concern was that there were people who had structures on faults. These were relatively nice homes, and people might want to make improvements to the house. He felt the Town should be somewhat lenient with those people rather than coming down inordinately hard. This was not about replacing the building or tearing it down. Vice Chair Zaffaroni said it would be important for the Commission as a whole to discuss this. She had a problem with the phrase that said "...the modification is done in a manner to minimize risk..." That was a very hard standard to apply. If you were going to allow an enlargement or an addition, it would be important that the addition or enlargement did not impinge closer to the trace if there was an alternative. Also, it might be subject to higher engineering standards. The term "minimize risk" needed to be

defined.

Commissioner Von Feldt asked what the drawbacks would be of allowing something like this. In some cases it might improve the safety if the addition was farther away from the trace. It might be good to put some sort of guidelines about minimizing risk. Town Planner Mader agreed that should be elaborated on. Responding to Vice Chair Zaffaroni, he said the Alquist-Priolo Act allowed additions and enlargements to existing buildings provided the cost did not exceed 50% of the building's value. Responding to Vice Chair Zaffaroni, he said he would have to check whether the State incorporated standards in terms of minimizing risks. Mr. Sayre said the State law had more detail in terms of valuation and the methods to get to valuation.

In terms of the rationale for value criteria, Town Planner Mader confirmed for Commissioner Von Feldt, that if it exceeded a certain value, the position was that you had to redo it to conform to standards. Another question was when someone whose building just came up to the setback wanted to add on behind the setback but attached to the building. This would only apply to houses that were already built. Responding to Vice Chair Zaffaroni, he said "existing buildings" would be those that existed as of the date of the adoption of the ordinance.

Mr. Sayre said there were a lot of parallels in this discussion to the discussion the Town went through for Pd zones and allowing people to add space. The intent was to reduce the risk with seismic upgrades, sprinkler systems, etc., so that the net effect was a positive one in terms of safety.

Responding to Vice Chair Zaffaroni, Town Planner Mader reviewed the proposed changes to Resolution 2279-2006 as shown in enclosure 3. He noted that the Resolution did not say "buildings for human occupancy" and felt that should be added. With respect to faults other than the San Andreas Fault (staff memo of 1/6/10, p. 5), Mr. Sayre confirmed for Vice Chair Zaffaroni that the 3 houses on the north fault and 3 houses on the south fault on the new map were part of the 7 and 10, respectively, on the current/original map. Responding to Vice Chair Zaffaroni, he said the changes were largely due to much more recent mapping done by Ben Page since the original map. Town Planner Mader discussed the qualifications of Dr. Page.

After discussing next steps, Town Planner Mader said he would remove the sections that the Commission wanted to discuss and use the packet material for this meeting as a reference. Vice Chair Zaffaroni added that the maps were a big accomplishment and a wonderful service to the Town. People could now look at their property and understand the risks.

Commissioner Gilbert rejoined the Commission.

COMMISSION, STAFF, COMMITTEE REPORTS AND RECOMMENDATIONS:

Ms. Lambert said there would be a joint field meeting with the ASCC at the Fogarty Winery to review the changes for the use permit.

ELECTION OF CHAIRPERSON AND VICE-CHAIRPERSON

Vice Chair Zaffaroni suggested deferring the election of the Chair and Vice Chair until the full Commission was present.

APPROVAL OF MINUTES

Commissioners submitted changes to the minutes of the 12/16/09 meeting. By motion and second, the minutes were approved as amended by a vote of 3-0.

ADJOURNMENT: 9:50 p.m.

Nate McKitterick, Chair
Planning Commission

Leslie Lambert
Planning Manager