Meeting Date: January 5, 2015

TOWN OF MORAGA **STAFF REPORT**

To: **Planning Commission**

From: **Ellen Clark, Planning Director**
Ben Noble, Contract Planner

Subject: **Hillsides and Ridgeline Project**

Request

Town staff requests that the Planning Commission receive an update on the Hillsides and Ridgeline project and Steering Committee recommendation regarding the scope of the next project phase, and provide comments to Town staff and the Town Council. At its January 28, 2015 meeting the Town Council will consider the Steering Committee recommendation and provide direction to Town staff and consultants on next steps for the project.

Background

The Moraga Hillsides and Ridgelines project was initiated in late 2013 based on a Town Council Goal to study and potentially update the existing regulations for hillside and ridgeline development. A consultant team, headed by PlaceWorks, was selected to lead the effort and the Town Council formed a Steering Committee composed of representatives of the Town Council, Planning Commission, Design Review Board and Park and Recreation Commission. Key goals and tasks of the project include:

- Reducing community conflicts over hillside and ridgeline development.
- Clarifying and educating the community about existing regulations.
- Providing clear, factual, and technically-sound background data to support decision-making.
- Improving existing regulations to better achieve the Town's hillside and ridgeline goals and policies.

The Hillside and Ridgeline project will result in targeted amendments to the Town's hillside and ridgeline policies and regulations. These amendments will clarify ambiguities, increase certainty, eliminate conflicting requirements, and generally make

the Town's regulations easier to understand for project applicants, residents, Town staff, and Town decision-makers.

Attachment A shows a general timeline for the Hillsides and Ridgelines project, which, as currently scoped, includes the following major tasks:

- **Task A: Project Initiation** – Receive preliminary community input on key hillside issues (completed)
- **Task B: Background Analysis** – Develop background data and maps to address key issues (Late 2014). The Background Report prepared as part of this task is discussed later in this memorandum.
- **Task C: Hillside Regulation Options** – Prepare options for how to address key issues (Early 2015)
- **Task D: Draft Regulations** – Prepare draft amendments to the Town's policies and regulations (Mid 2015)
- **Task E: Review and Adoption** – Adopt amended policies and regulations (Late 2015)

Several meetings and workshops have been held to date, including:

- **Steering Committee Meeting #1** (April 10 and 16, 2014). The Steering Committee was introduced to the project and provided preliminary input on key issues to address through the project.
- **Stakeholder Meetings** (April 10, 2014). Town staff and consultants met with groups of property owners, developers, engineers and architects, and community members to discuss key project issues.
- **Community Workshop #1** (April 16, 2014). The first community workshop provided an introduction to the project, and gathered input from participants on issues and concerns to be addressed.
- **Community Workshop #2** (June 5, 2014). At the second community workshop participants learned more about the Town's hillside development regulations and prioritized issues to address through the project.

  Steering Committee Meeting #2 (November 19, 22014). The Steering Committee received the revised Background Report, provided comments on preliminary draft landslide hazard maps, and made a recommendation on issues to focus on for the remainder of the project. Draft meeting minutes are provided as Attachment B; Committee comments and recommendations are outlined later in this staff report.

Minutes and summaries for each of these meetings can be viewed at www.moraga.ca.us/hillsides.

Meetings have been supplemented through an online civic engagement tool called Open Town Hall, which enables the community to comment on a series of focused questions during the course of the project. Open Town Hall aims to broaden public participation in the project and will be carefully moderated to promote civility. A summary of public input received to date on the first three Open Hall topics, which have

generated feedback on key project issues, the background report, and prioritization of issues to address through the project, is provided in Attachment 6 to the November 19, 2014 Steering Committee Staff Report, available on-line at: http://www.moraga.ca.us/dept/planning/Hillsides/111914Steering/Steering%20Committee%2011_19%20Packet.pdf.

Final Background Report

The Draft Background Report, titled "Understanding Moraga's Hillside Regulations" was published in June, 2014. It contains a summary of the Town's regulations that apply to hillside and ridgeline development in Moraga, provides an overview of the existing physical conditions relevant to hillside development, and highlights some of the key issues that could be addressed through the Hillsides and Ridgelines project. The Background Report presents complex and technical aspects of Moraga's hillside regulations in a clear and simple format to facilitate broad public participation in the Hillsides and Ridgelines project.

Town staff invited the community to comment on the initial draft of the Background Report. Many of the comments received on the Background Report requested that the Report provide a more balanced discussion of property rights, the benefits of development, and how these benefits relate to the Town's economic development goals. Other comments included requests for corrections of factual statements or technical information included in the report. Based on these comments, Town staff and consultants revised the document, included as Attachment G to this staff report. A version of the Report that shows changes to the document in strikethrough/underline text is provided in Attachment 13 to the November 19, 2014 Steering Committee meeting packet.

At the November 19, 2014 meeting Steering Committee members all agreed to accept the revised Background Report as complete. One Committee member suggested that the Town update the Background after the Hillsides and Ridgelines project is finished to reflect amended regulations and provide a "citizens" guide to the Town's hillside regulations.

After the Planning Commission and Town Council have reviewed the Revised Background Report, Town staff will publish a Final Background Report. This Final Report will function as a resource to be used as the Town proceeds with the Hillsides and Ridgeline project.

Draft Landslide Hazard Maps

A goal of the Hillside and Ridgeline project is to improve the factual basis and underlying information and data that informs the Town regulations and decision-making process for hillside and ridgeline development. With this goal in mind, the Town's geotechnical consultant, Cotton Shires, developed preliminary landslide hazard maps for select locations in Moraga. Information on the purpose and methodology used to develop the maps is provided below.

Purpose of Maps

The purpose of the maps is to provide background information to inform the effort to improve the Town's hillside development regulations by better understanding the nature, type and location of landslide hazards in Moraga. The Town does not intend to use these preliminary draft maps to impose new or more stringent development restrictions on any specific sites or properties. Instead, they are planning-level maps intended for informational purposes and to inform the hillside and ridgeline project. Further, the maps do not substitute for site specific mapping and geotechnical information typically required when a site is proposed for development.

Methodology and Areas Selected

Attachment C and D present the two draft maps: a Landslide Inventory Map and a Landslide Hazard Map. These maps were prepared utilizing stereo aerial photo mapping methods, based on air photos taken in 1954 and 2002, used to delineate areas of past landslide activity. All boundaries between zones are located approximately.

A landslide is defined as the rapid downward sliding of a mass of earth and rock. Landslides can have various characteristics, including the depth of the landslide, degree to which it is active or inactive, and age. Factors such as size, slope steepness, composition of soils and bedrock layers forming and underlying the landslide; and external influences such as moisture/rainfall, seismic activity, and upslope or downslope activity (natural or man-made) can all affect how a landslide moves and behaves. Landslides, by definition, are dynamic features, and can change or take on new characteristics over time.

At the Town's direction, Cotton Shires limited its analysis of landslide hazards to a predetermined study area, primarily focused on open space or undeveloped properties where development could occur and areas where detailed landslide hazard mapping has not recently been prepared. Town staff took this approach to focus Town resources on closing data gaps and supplementing existing information.

Landslide Inventory Map

The Landslide Inventory Map shows features within the study area related to landslide hazards. The map identifies the areas with surficial deposits, active slope instability, dormant slope instability, and old slope instability. Areas with slope stability are based on the estimated age of the most recent landslide activity or slope movement. The map also shows the following:

- **Topographic breaks in the slope** that are typically located along the top edge of past landsliding or top of a landslide "scarp" where moving ground has pulled away from intact ground.
- **Landslide deposits** that consist of disrupted earth materials displaced through landsliding, often underlain by a weak surface of sheared clay.
- **Top of banks** that are associated with natural drainage channels and typically mark a transition to steeper slopes formed by active erosion.
- **Artificial cut slopes** that are typically the result of excavation to prepare a relatively level building pad or level surface for roadway construction.

Landslide Hazard Map

The Landslide Hazard Map consolidates and simplifies the information in the Landslide Inventory Map to show areas with a significant potential for landsliding. There are two basic categories of landslide hazard areas:

- **Shallow, potentially unstable areas.** These areas are subject to shallow landsliding and contain unconsolidated material on gentle to steep slopes, commonly less than 10 feet in thickness.
- **Deep, potential unstable areas.** These areas are subject to more significant landsliding and contain unconsolidated or detached materials on moderate to steep slopes, commonly more than 10 feet in thickness.

Shallow instability generally is associated with smaller landslides including a category of very fast moving slope failures termed debris flows. This type of landslide is hazardous to residential structures located within the flow path or debris deposition area. Many engineering alternatives are available to remediate shallow landslides and to mitigate hazards resulting from debris flows. However, debris flow protective structures must be put in place prior to slope failure.

Deep landsliding also presents hazards to residential development unless recognized potentially unstable ground is stabilized prior to development. Commonly utilized measures to stabilize deep landslides include mass grading to remove and re-compact existing landslide debris, subsurface dewatering systems, buttress fill construction, and/or construction of deep steel reinforced concrete piers to “pin” potentially unstable ground in-place.

Key Findings from Maps

The preliminary Landslide Hazard Map shows that within the study areas there are a large number of areas with a significant potential for landsliding (more than 50 percent of these areas). The majority of landslide hazard areas are shallow, potential unstable. Areas with the greatest prevalence of deep landslide hazard areas are in the areas around Indian Ridge.

Shallow earthflows have a relatively high potential for future reactivation and steep slopes within and immediately adjacent to active shallow earthflows have a relatively high risk for failure. Soils within steep swales have a relatively high risk for failure as either shallow earthflows or debris flows. Steep slopes that flank ridgelines have a relatively high potential for generation of shallow earthflows.

Mapping work also revealed evidence of actively incising creek channels within the Town. As creek channels incise, this often leads to undermining of adjacent ground. Active earth slumps are common adjacent to creek channels that are experiencing active erosion and incision. Direction of concentrated runoff to natural drainage channels can lead to channel incision and associated landsliding. Appropriate drainage design and control is a key aspect of hillside development to minimize both onsite and offsite adverse impacts to slope stability.

Relationship with MOSO High Risk Area Map

It is informative to compare the two landslide hazard maps with the MOSO Guidelines Development Capability Map (see Attachment E). The Development Capability Map, first adopted in 1989, established a preliminary determination of high-risk areas in Moraga, based on a number of factors. The map divides Moraga into a grid of 200 by 200 foot squares, and assigns each square a numerical value between 0 and 9. A value of 0 means the square has the least development capability (i.e. most constrained), and 9 means the square has most development capability (i.e. least constrained). Values were based on six physical attributes: ridgelines, landslide susceptibility, slope, flood hazard, vegetation, and soil erosion. Per the MOSO Guidelines, squares designated 1, 2, 3, or 4 are determined, on a preliminary basis, to be "high-risk."

Attachment F shows some examples of the Landslide Hazard Map layered on top of the MOSO Guidelines Development Capability Map at sample locations. This attachment shows that some of the landslide hazard areas mapped by Cotton Shires are classified as having high development capability. Conversely, in a number of areas Cotton Shires found no landslide hazards present in areas classified as high risk by the Development Capability Map. This discrepancy is present throughout the study areas mapped by Cotton Shires, not just at these sample locations. However, as shown in the attachments there is better correlation in some areas than others.

One would expect some degree of variation between Cotton Shires' landslide hazard maps and the Development Capability Map given that the Development Capability Map considers more attributes than just landslide susceptibility. But the degree and extent of the discrepancy raises questions about the relevance and accuracy of the Development Capability Map. Considering this finding, the Town may wish to update the map of "high risk" areas based on improved data and more modern mapping and analysis tools.

Future Use of Maps

At the January 5, 2014 Planning Commission meeting Town staff will provide more detail on the methodology used to prepare the maps and some policy implications that they raise. Ultimately, the Town Council, with input from the Steering Committee and the Planning Commission, will provide direction on how best to utilize the information contained in these maps. For example, these maps could become the basis for an updated landslide hazard map in the General Plan. Information from these maps could also supplement or replace existing maps that designate MOSO high risk areas. How best to utilize these maps will be discussed and determined with public participation through the Hillside and Ridgeline process.

Steering Committee Input on Maps

At the November 19, 2014 Steering Committee meeting the Committee asked a number of questions about the methodology and reliability of the draft landslide hazard maps. Committee members requested that Town staff reach out to property owners to verify and enhance the information in the maps. The Steering Committee also recommended that staff and consultants further study discrepancies between MOSO maps and the draft landslide hazard maps, and consider ways to improve the mapping that is used as a basis for the Town's hillside development regulations.

Key Project Issues

On November 19, 2014 the Steering Committee made a recommendation to the Town Council on the issues, problems, and questions that the Town should continue to study as part of the Hillsides and Ridgelines project. At its January 28, 2015 meeting the Town Council will consider this recommendation and provide direction to Town staff and consultants.

Staff and the consultant team will then develop options for how to best address the issues and facilitate a public process to select the preferred options. Based on public input and Steering Committee direction during that process, amended policies and regulations to implement these preferred options will be developed for public and Town Council review, and potential adoption as amendments to existing regulations, guidelines, and policies.

Below are the eight issues recommended by the Steering Committee for further study. This list is based on input received and prior workshops and meetings and through Open Town Hall. Noted in parentheses after each issue heading is the Background Report page number where additional information about the issue can be found.

1. Ridgeline Protection (Background Report page 21)

General Plan Policy CD1.5 calls for the Town to "protect ridgelines from development." There are different interpretations of this policy, and how it should be applied. Specific questions to resolve include:

- Clarifying/determining if General Plan Policy CD1.5 applies to all ridgelines in Moraga, including those outside MOSO and Non-MOSO Open Space, or only Major and Minor Ridgelines on MOSO lands. This may require amending the definition of ridgelines in the General Plan.
- Clarifying/determining the precise meaning of "protect" in the context of hillside development (for example, does this term mean that no development at all is allowed, that certain development may be allowed; under certain conditions or circumstances, or even that development not on a ridgeline, but affecting aspects such as views, should be limited)

The meaning or interpretation of the term "development" is also a key issue, but since it has applicability beyond just ridgeline areas, it is treated as a separate issue, below.

2. Definition of Development (Background Report page 32)

MOSO Guidelines define development as "the placement, discharge or disposal of any material, the grading or removing of any material, the change in the density or intensity of use of land, the subdivision of land, or the construction or erection of a structure." The definition of development in the General Plan also includes virtually all types of construction, earthmoving, and change in intensity of land use. Both the General Plan and MOSO Guidelines make certain exceptions to this rule for 1) Remediation of hazards that are a threat to public safety; 2) Construction of fire trails; and 3) Roads "with attendant underground facilities." Questions to resolve include:

- Is the type of extensive grading necessary to remediate landslides, especially when the purpose of that grading is to facilitate development, permissible as "development" under category 1?
- Can related surface facilities such as parking areas and sidewalks be allowed in conjunction with the construction of roads under Category 3?

3. Development on Steep Slope Areas (Background Report page 22)

MOSO Initiative Section 3(b)(1) prohibits development in MOSO Open Space on sites with an average slope of 20 percent or greater. There is disagreement over the intent of this language. Specific questions to resolve include:

- Can homes be built on a portion of a site with a slope (in that location) greater than 20 percent if the <u>average</u> slope of the entire site is less than 20 percent?
- Conversely, can homes can be built on a portion of a site with a slope (in that location) less than 20 percent slope, if the average slope of the entire site is greater than 20 percent.
- Can a home be remodeled or added to if it is on a site with an average slope of more than 20 percent?
- Can an existing, legal, single family lot without a structure be developed if it has an average slope of more than 20 percent?
- Do the Town's regulations permit slopes to be re-graded (in conjunction with remediation or otherwise) to create areas with less than 20 percent slope, to allow for development?

4. **Calculation of Slope** (Background Report page 23)

Moraga Municipal Code Section 8.136.020 and MOSO Guidelines Section II.A.3 guide slope calculations. Project applicants may define a cell as any polygonal shape provided it has an area of at least 10,000 square feet. Some people believe "contorted" or highly irregular cell shapes allow applicants to circumvent slope development restrictions in MOSO lands. Questions to resolve include potential alternate methods for calculating the average slope of a development site, and whether modifications are needed to existing slope calculation rules and formulas to better reflect the intent of Moraga's hillside regulations.

5. Remediation in High Risk Areas (Background Report page 26)

MOSO Guidelines Section D.2 addresses High Risk Areas and allows for remediation and reclassification of such areas. There is disagreement as to the purposes for which remediation and reclassification are allowed. Questions to resolve include clarifying if and when geologic hazards in "high risk" areas can be remediated as part of a development project to allow densities greater than 1 unit per 20 acres.

6. **Viewshed Protection** (Background Report page 34)

General Plan Policy CD1.3 directs the Town to protect viewsheds along the Town's scenic corridors, but the Town has not adopted any detailed standards or criteria for evaluating the visual effects of development on these viewsheds. Items to be further studied include: development of criteria and methodology (including, potentially, quantified standards) to evaluate the visual effects of development visible from scenic

corridors or that would affect views of hillsides or ridgelines in order to determine whether a project has a significant adverse impact on a visual resource. Such standards could also be translated into additional guidelines or standards to regulate development in scenic corridor, addressing aspects such as maintenance of view planes or corridors.

7. Hillside Development Permit (Background Report page 44)

The Town requires Hillside Development Permits (HDP) for all projects on slopes of 20 percent or greater. Some have suggested that the HDP requirements are overly burdensome and unnecessary or duplicative given other Town requirements such as MOSO regulations, design review, grading permit approval and building permit requirements. Specific questions to resolve include:

- If a Hillside Development Permit is required for all projects, including residential additions or construction of accessory structures on developed single-family lots.
- Whether a Hillside Development Permit is required if any portion of a property that has greater than 20 percent slope, or only when development would affect such a slope.
- Determine if the requirements of the HDP are duplicative or redundant relative to other permits typically required for projects on hillside sites; including grading permits, MOSO approvals, and design review; and modify regulations to eliminate these redundancies as appropriate.

8. High Risk Area Map

As discussed above, many of the landslide hazard areas mapped by Cotton Shires do not appear as high risk areas in the MOSO Guidelines Development Capability Map. This suggests the need to update the Development Capability map, supplement it with new mapping, or replace it with a new map that reflects better information on landslide hazards and other development constraints within MOSO areas.

<u>Other Issues</u>

On November 19, 2014 the Steering Committee recommended that the following four issues, originally included in staff's preliminary list of issues, not be addressed as part of the hillsides and ridgeline project:

- The Grading Ordinance guideline that "all grading should be balanced on site".
- Various other guidelines in the Town's Grading Ordinance, including limits on maximum gradients for cut and fill.
- The Town's three-step planned development process.
- Broader issues of town-wide growth and development.

In the case of the first two issues, the Steering Committee felt that, since these were guidelines in the grading ordinance, the intent was for the Town to have flexibility in their interpretation that is properly accommodated in the existing Grading Ordinance.

With regard to the the Town's three-step planned development process, these particular standards will be looked at as part of a separate process, since they apply to most large subdivisions throughout Moraga, and not just hillside areas.

Finally, with regard to broader issues of growth and development, the Steering Committee also recommended that the hillside and ridgeline project focus on targeted amendments to existing regulations and should not attempt to revisit broader community land use and growth management goals contained in the General Plan, noting that this process would likely be both expensive and time-consuming (also see discussion below).

Project Approach Moving Forward

When the Hillsides and Ridgelines project began, the scope of the project was to make targeted amendments to the Town's existing hillside and ridgeline development regulations to clarify requirements, eliminate conflicts, and increase certainty, in keeping with requirements of the MOSO Ordinance. The first two community workshops raised concerns about the amount of growth in Moraga and its impacts on traffic, school enrollment and capacity, and quality of life. Some participants felt that it is not desirable to amend the Town's hillside regulations without revisiting community land use and growth management goals contained in the General Plan.

At its November 19, 2014 meeting, the Steering Committee considered the idea of addressing hillside and ridgelines issues as part of a more comprehensive General Plan Update. This approach could involve suspending or significantly altering the Hillsides and Ridgelines project. The Steering Committee did not support this idea and instead recommended continuing with the Hillsides and Ridgelines project as originally planned. The Committee felt that the Town would benefit from improvements to existing regulations and that this can occur without a lengthy process to overhaul or comprehensively update the General Plan.

Next steps are outlined in Attachment A (Project Process and Schedule). In early 2015 staff and consultants will work with the Steering Committee to develop options for how best to address the list of issues described in this staff report. The public will provide input on these options at a workshop and the Town Council will select preferred options in mid-2015. Staff and consultants will then work with the Steering Committee to prepare the amended policy and regulations consistent with this preferred approach. In late 2015 the Planning Commission and Town Council will consider the final regulations at a series of public meetings for final review and adoption.

Recommendation

Town staff requests that the Planning Commission receive an update on the Hillsides and Ridgeline project and Steering Committee recommendation regarding the scope of the next project phase, and provide comments to Town staff and the Town Council.

Report reviewed by: Ellen Clark, Planning Director

Attachments:

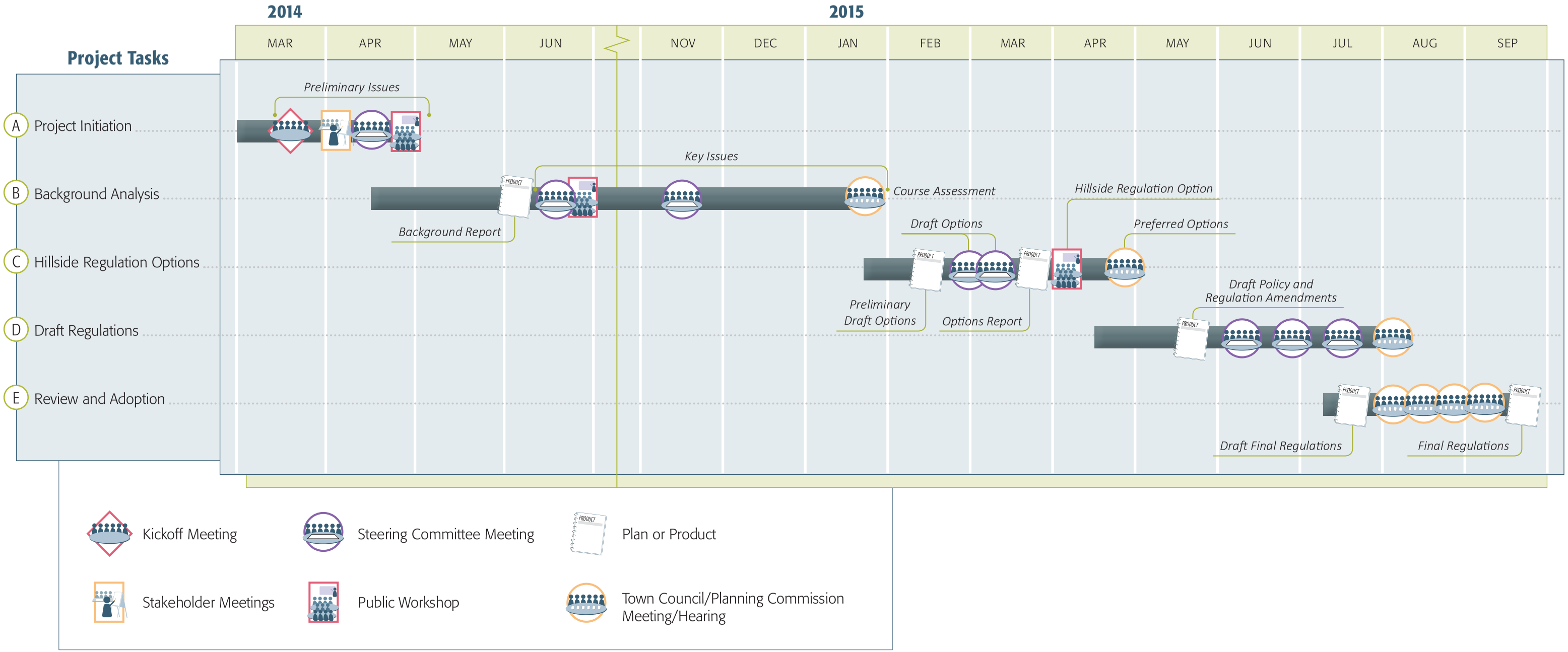
- **A.** Project Process and Schedule
- **B.** Steering Committee Meeting #2 minutes
- **C.** Draft Landslide Inventory Map
- **D.** Draft Landslide Hazard Map
- **E.** MOSO Guidelines Development Capability Map
- **F.** Landslide Hazard Map layered on top the MOSO Guidelines Development Capability Map.
- **G.** Revised Background Report

ATTACHMENT A

PROJECT PROCESS AND SCHEDULE

Moraga Hillsides and Ridgelines Project

Project Schedule



ATTACHMENT B

DRAFT STEERING COMMITTEE MEETING #2 MINUTES

TOWN OF MORAGA
Hillsides and Ridgelines Steering Committee

Mosaic Room
Hacienda de las Flores
2100 Donald Drive
Moraga, CA 94556

November 19, 2014

7:00 P.M.

DRAFT MINUTES

1. CALL TO ORDER

David Early, PlaceWorks, called the Hillsides and Ridgelines Steering Committee meeting to order at 7:00 P.M.

2. ROLL CALL

Present: Town Councilmembers Metcalf and Trotter
Planning Commissioners Comprelli and Levenfeld
Design Review Board Member Glover
Park & Recreation Commissioner Lucacher

Absent: None

Consultants: David Early, PlaceWorks
Ben Noble
Ted Sayre, Cotton Shires
Eric Panzer, PlaceWorks

Staff: Ellen Clark, Planning Director

3. PUBLIC COMMENTS

There were no comments from the public.

4. ADOPTION OF MEETING AGENDA

Action: M/S/U (Trotter/Metcalf) to adopt the meeting agenda, as shown.

5. PROJECT BACKGROUND REVIEW

Mr. Early reminded those assembled of the project goals, which had been articulated at previous meetings. These goals are: to reduce community conflicts over hillside and ridgeline development; create better clarity and educate the community about existing regulations; provide clear, factual, and technically-sound background data to support decision-making; and improve existing regulations to better achieve the Town's hillside and ridgeline goals and policies.

Mr. Early advised that there are five tasks in the project scope, of which two, Task and Task B were completed or underway. Task A, Project Initiation, which had been completed, had oriented the Steering Committee and the community through project workshops. Task B, a Background Analysis, was nearly complete, and the current meeting, followed by Planning Commission and Town Council meetings would wrap up that phase of the Project.

Mr. Early reported that the current scope involved Task C, Hillside Regulations Options that would be considered by the Steering Committee in early 2015; Task D, Draft Regulations that would be considered in mid-2015; and Task E, Review and Adoption towards the end of 2015. He explained that the Committee would be asked to verify whether or not that was the approach it wanted to take.

Councilmember Metcalf commented that the process described was consistent with what the Council had in mind at the outset, although he had become concerned after reading the material in the packet that many in the community wanted to start anew with the whole concept of development in Moraga, which he suggested was not the intent in that changes to the General Plan would be required, which was not part of the project. As such, he wondered if the Committee had the same desire as well.

Mr. Early suggested that issue be deferred to the end of the meeting after the discussion.

Councilmember Trotter concurred with that approach.

Park & Recreation Commissioner Lucacher asked if what was expected of the Steering Committee had been clearly defined, and what success would look like for the Committee whether an opinion, general direction, guidance, or a decision was being sought.

Mr. Early suggested that the success of the Steering Committee and the project were synonymous with each other, with a successful outcome consisting of the crafting and adoption of revisions to the Town's policies and regulations regarding hillside development that achieve the goals of making those regulations clear, understandable, and free of ambiguity. He clarified that there had been no goal for any comprehensive General Plan update other than potential targeted updates necessary to clarify regulations and policies. The role of the Steering Committee would continue to be making regulatory and policy recommendations that would then proceed to the Planning Commission and the Town Council for potential adoption.

Councilmember Metcalf suggested that a set of regulations would go a long way to allow more to be done on a ministerial basis. He noted that currently there was too much discretion, areas where there were contradictions and confusion, and he sought clarity where judgment was concerned. He looked to the experts to identify the areas that needed help and to advise the Town what areas needed to be addressed, which he hoped would be done in this process.

Mr. Early advised that there was a list of 12 issues that would serve as the basis for a workplan that would help address the issues and concerns that prompted the project and were expressed by the Steering Committee.
Councilmember Metcalf referred to slope density, for instance, and asked if the consultants could offer suggestions as to what was working elsewhere.

Park & Recreation Commissioner Lucacher wanted a roadmap to provide clarity and precision, along with greater predictability to identify where the Town was going.

Mr. Early referred to a graphic schedule which illustrated the progress of the Hillsides and Ridgelines Project to date. Mr. Early indicated that the project was at the conclusion of Task B, and would proceeding to Tasks C and D, pending feedback from the Steering Committee and Town Council. In Tasks C and D, specific regulations would be presented, and those accepted would be moved for formal review and adoption by the Town Council at the end of next year. He clarified that the Steering Committee was an advisory body to the Town Council, and that the Town Council will approve any eventual changes to the Town's regulations.

Councilmember Trotter wanted the Steering Committee to keep in mind that one of the things being done as a Committee was representing the values of the community, and as such it was a values exercise.

Design Review Board (DRB) Member Glover characterized the proposal as an ambitious program. He urged keeping in mind that Moraga was unique to the Lamorinda area, wanted to ensure that the proposals were doable for Moraga but suggested that much was not doable.

6. REVISED BACKGROUND REPORT

As to the final Background Report, Mr. Early stated that a draft Background Report had been published in June 2014, and had been reviewed by a number of parties, been distributed to the public, been revised, and provided a clear understandable summary of the existing regulations, the physical conditions, and the technical background regarding hillside and slope regulation in the Town. A revised document had incorporated the comments received from the public. The final report was available and would be used as a basis to move forward when looking to issues, options, and policy issues. He asked if the Steering Committee needed additional review time prior to the finalization of the document.

Members of the audience were asked for comments. None were offered.

Councilmember Metcalf suggested it was a helpful document and he thanked the consultants in that it shed a lot of understanding.

Planning Commissioner Levenfeld had no issue but asked the consultants if the document would be updated, to which Mr. Early stated that they were not planning to create a new plan for hillside regulation, but would assist in suggesting specific changes to regulations that largely already existed. They would not be writing a plan with an

existing condition section, and once accepted and agreed to, it would be used as background information and there would be no need to republish and revise.

Senior Planner Ellen Clark noted that many people in the community did not understand the Town's regulations and the document was intended to put that information in one place and offer information as a starting point for the project.

Ben Noble, PlaceWorks, suggested at the end of the process the Town could choose to revise or amend the document to become a resident's guide.

Planning Commissioner Levenfeld concurred and wanted to make sure that the Background Report would be updated, when completed, to create a Citizen's Guide to Hillside and Ridgeline Regulations.

Mr. Early noted the request from the Committee to consider an additional task to create a Citizen's Guide to Hillside and Ridgeline Regulation that might be based on the Background Report.

7. DRAFT LANDSLIDE HAZARD MAPS

Mr. Early reported that the Draft Landslide Hazard Maps had been put together to inform the update process, and explained that the maps represented planning level data, were based on air photo data rather than borings or other field work, and had been targeted to undeveloped areas without previous ground-level landslide mapping. He emphasized that the maps were neither site-specific mapping nor a definitive statement for any particular parcel of land, and individual development projects would still need to be assessed. He added that it would be up to the Committee to recommend to the Planning Commission and the Town Council how the maps should be used in the planning process, if at all. The maps had been presented simply for background information at this time, but could serve as a basis for future policies.

Mr. Sayre, Cotton Shires, noted that two different maps had been prepared: The Landslide Inventory Map, which comprehensively illustrates recognized landslides in the evaluated portions of Moraga, and provides information on the type and age of landslides. The second map, the Landslides Hazards Map, extrapolates from the Landslide Inventory map and available geologic data to illustrate areas of potential landslide hazards in the predetermined study areas. To create the Landslides Inventory Map, Cotton Shires performed stereographic analysis using pairs of air photos covering the Town, and did not conduct any on-the-ground field work. Mr. Sayre explained the process of air analysis and noted that prior to the air photo analysis, published maps of geology and landslide mapping for the Town had been collected and reviewed to consider important information regarding the bedrock structure, type of bedrock material, and other background data. Using a stereoscope, an optical device that allows geologists to see three-dimensions by viewing two closely paired air photographs, two full sets of overlapping, high resolution stereo air photos were viewed. Cotton Shires examined two complete sets of air photos from different years (older and more recent), and when landslide features were recognized they were plotted on a topographic map of the Town.

When complete, the evaluating geologist passed the map on to two other in-house geologists who provided a second level of review; the maps underwent a final review by Mitch Wolfe, who provided additional valuable expert input. The air photo based landslide inventory was also compared with the fieldwork-based landslide mapping performed for three subdivision projects including Bollinger Valley, Hetfield Estates, and one other. In these particular areas, the air photo based landslide inventory prepared by Cotton Shires compared well with the ground-based landslide mapping performed, indicating that the aerial methods used by Cotton Shires were sound.

Councilmember Metcalf verified that the mapping had looked at undeveloped areas. He asked if the work done with the photos suggested the current mapping was good or deficient.

In response, Mr. Sayre stated that the previous mapping he had looked at had been published mapping which had not looked at Moraga Open Space Ordinance (MOSO) work that had been done previously. He verified, when asked, that the geologists who were evaluating the landslides had 20 and 30 years' experience identifying, characterizing, and mitigating landslides.

Planning Commissioner Comprelli asked what confidence the consultant had and should the Town have in the conclusions drawn from the stereographic analysis.

Mr. Sayre spoke regarding the Bollinger Valley area and reported that all the individual landslides that had been mapped in this area by Engeo were accounted for on the Cotton Shires map prior to making the comparison. Engeo's mapping had involved a site visit that included soil drilling to examine landslide deposits. While some of the landslides boundaries differed, in each case the same landslides had specifically been mapped and identified by Engeo and Cotton Shires.

In response to Councilmember Metcalf as to whether a major effort would be required to define maps in developed areas, Mr. Early reiterated that Cotton Shires had two distinct maps/datasets and that landslide mapping was not based on air photo analysis and not field reconnaissance. Mr. Early also confirmed performed a spot check of three subdivisions where there were reliable on-the-ground data from three other geotechnical firms, and in those three locations the work matched what the site-specific ground-based analysis had identified. He stated that the landslide maps represented reliable plan-level data for the study areas, but would not eliminate the need for site-specific analysis prior to potential development.

Councilmember Trotter stated that the information was helpful. He noted his understanding that the mapping recently done was at odds with some of the high-risk mapping done in connection with the earlier MOSO work, where some discrepancies and inaccuracies had been found.

Mr. Early explained those discrepancies would be addressed at the end of the presentation.

Mr. Sayre referred to an overall picture of the Landslide Inventory Map and explained that landslide inventory mapping included: three ages of landslides; categories of active,

dormant, and “old” landslides, along with surficial deposits that were not landslides but included areas of deep and shallow soils located in steep swale areas that could be prone to landslide in the future when filled with water. Explaining that the different types of landslides that had been mapped, he referred to: mudslides (or debris flows or earth flows), which are types of failure where the earth disaggregates and flows downslope; and rotational slump failure landslides, where the land shifts along a curving underground plane of failure. These types of slides were mapped separately on the Landslide Inventory Map. He added that the surficial landslides represented the bulk of the slides that had been mapped.

When asked, Mr. Sayre clarified the colors on the map that serve to identify broad landslide categories, which include: active (<60 years old), dormant (60-200 years old), or old (>200 years old), based on the observed geomorphology of the landslide.

Councilmember Metcalf asked how the maps would be made usable. Mr. Sayre acknowledged that the detailed Landslide Inventory Map would not be useful in the planning process, but explained that the Landslide Hazard Potential Map had been created to incorporate all the detailed information from the landslide inventory to identify areas that had the potential for either shallow ground failure of less than 10 feet in depth, or deeper landslides with a depth of greater than 10 feet. He noted that the shallow landsliding category would include both identified shallow landslides and adjacent areas that had the potential for failing in a shallow manner. Similarly, areas shown as having a risk of deep landslides would include both identified deep landslides and as well as adjacent areas that shared the same geological characteristics. He added that they were looking for adjacent terrain that could fail in the same manner given similar conditions, and stated that the map could potentially be incorporated into the planning process.

Councilmember Metcalf asked how the maps could be integrated into the regulatory process.

Park & Recreation Commissioner Lucacher asked if the mapping was reliable.

DRB Member Glover also asked if the potential hazards would become part of an ordinance that the Town could adopt. He noted that existing geographic data appeared to be out of date, with streambed and ridgeline locations not entirely accurate and in need of an update.

Mr. Sayre explained that the intent in putting the maps out in draft form was to solicit input from the community, people who knew the terrain and who could clarify whether the information had been accurately shown on the map. He sought that feedback from the public that could be incorporated into the maps.

Ms. Clark explained that the maps could not be a substitute for site-specific mapping that would have to occur to identify the precise boundary, location, and characteristics of the landslide features.

Suzanne Jones asked if there was any difference between the likelihood of failure between shallow landslides and deep landslides and whether one was more hazardous than the other.

Mr. Sayre explained that would be discussed later but most of the landslides were the shallow type of failure as opposed to deep failures. In response to Councilmember Metcalf as to whether one kind of landslide was more risky than the other, he suggested that would depend on a number of factors. He noted, for instance, that deep landslides could move an entire house while a shallow landslide might hit the side of the house.

Planning Commissioner Levenfeld verified that there was no statement on the likelihood of occurrence, and the maps did not identify that one type or the other would be more likely to happen.

Mr. Early noted that the landslides were significant enough to be mapped but had not been gradated with regard to risk.

Mr. Sayre explained that from a planning perspective, the presence of a landslide could mean that before building on that ground a more detailed study, including borings and analysis, would be required.

Mr. Early also noted that a deeper landslide would require more remediation to allow development, and that the 10-foot cutoff could be seen as a rough benchmark of how much repair would be required. Mr. Sayre explained that the 10-foot depth was an arbitrary cutoff between minor earthwork needed and the requirement for more significant work such as mass grading, drainage, and the like.

Mr. Early discussed how perhaps 50 percent of the area study was identified as having some landslide hazard, but that the majority of these were shallow landslide hazards. He indicated that the number of deep landslides remained notable, and that many of these deeper landslides were located in the Indian Ridge area, as well as scattered across town. He also discussed evidence of active incising along creek channels, and mentioned that some of the data in the MOSO Guideline Capability Maps did not correspond to the more recent landslide mapping.

Mr. Early added that the three spot checks had been conducted and he reminded the Steering Committee that MOSO development capability mapping had been based on 200- by 200-foot grids, with each receiving a number 1 to 9, where a low number was more hazardous and a number of 5 or lower was considered to be unsuitable for development. He explained that they had used GIS to compare the 1992 compatibility map to the new landslide maps. The compatibility analysis conducted in 1992 had included not only landslides but also location on a ridge, landsliding, vegetation, slope stability, slope steepness, erosion, and flooding. Most of the areas shown as landslides in the new maps had been mapped as less appropriate for development in the 1992 maps. He described the level of consistency between the old development capability maps and the new landslide maps in specific areas, and suggested that one of the things that needed to be considered was whether the 1992 MOSO map was thorough and complete. He suggested that the Steering and the Town Council could consider revisiting the development capability mapping, with new data and methodologies.

Ms. Clark commented that there was now new technology that would allow a higher degree of precision.

Mr. Early suggested that the areas that appeared to have high development capability despite being on a newly identified landslide might be a result of the other factors related to slope, erosion, or flooding. When asked about next steps, Mr. Early suggested that the Steering Committee could take this opportunity to identify potential scope changes to address some of the noted inconsistencies and seeming inaccuracies in the older development capability data; policy changes could then be proposed to respond to any new analysis. When asked if this would increase the budget, he stated that was unknown at this point, but that there might be strategies for how to move forward potentially within the available budget.

Park & Recreation Commissioner Lucacher asked about the budget and its scope and goals to get a more complete picture of the process.

Councilmember Metcalf suggested that the Steering Committee was poised to do something right and define what needed to be done to do it and if it would take more money, that could be determined later. He wanted to get the job done correctly.

Ms. Clark explained that when the scope had initially been developed with PlaceWorks, it was known that the second phase of the project would need to be refined with a decision about the scope of the second phase to then determine how to proceed.

Mr. Early stated that he would get the exact numbers.

Councilmember Trotter agreed that the Steering Committee should be trying to determine the right set of recommendations.

Mr. Early referred to existing condition information that could become the basis for a new informational map for the public, could be incorporated into the General Plan at some point, and/or could serve as a potential supplement or replacement for the MOSO capability maps, but he cautioned that current data do not include all six dimensions included in the MOSO development capability analysis and that new analyses would be required. If a replacement comprehensive mapping was desired, additional analyses would have to be done and a scope could be prepared to determine how to achieve that. He explained that any analysis of individual properties would have to be done at a site-/parcel-level at the specific time of an individual development proposal.

When asked if the consultants had experience in mapping levels of confidence, Mr. Early explained that it was not possible to predict the likelihood or potential time frame of future landslides, only to identify areas with known, existing risk.

Mr. Sayre reiterated the existence of risk in some areas but stipulated that risk could not be classified as low, moderate, or high. The risks were deemed significant because of the existing landslides and terrain with similar conditions immediately adjacent to existing landslides. Mr. Sayre stated that as policies were developed Cotton Shires could provide guidance on how the maps could best be used.

Mr. Early concurred but stated that would not be done at this time. Mr. Early confirmed the Steering Committee's: desire for policy based on reliable mapping; concerns regarding the inconsistencies between the 1992 maps and the new landslide maps; desire for the consultants to consider ways to address the discrepancies discovered; and desire that the consultant return with some proposals to address those discrepancies and create new mapping as a basis for new or revised policies.

Reiterating the desire for input from the public, Mr. Early clarified that any comments from any members of the public or the Steering Committee should come through Ellen Clark. He advised members of the public that digital copies of the maps could be made available, and that any comments would be appreciated.

8. KEY PROJECT ISSUES

Mr. Early initially suggested that the Steering Committee consider the key project issues and the project approach concurrent, but it was later determined that they would be addressed separately. He presented 12 key issues identified by PlaceWorks that could potentially be addressed over the remainder of the project, and asked if there were any glaring omissions of issues that should on the list. Mr. Early stated his intent to address all of the 12 issues to some degree or another through the planning process over the next year.

1. Ridgeline Protection
2. Definition of Development
3. Development on Steep Slopes
4. What Development Can Occur on Steep Slopes
5. Remediation and High-Risk Areas
6. View Protection
7. Balanced Grading
8. Grading Standards
9. Hillside Development Permit Process
10. High-Risk Area Map
11. Land Capability Map
12. Town-Wide Growth and Development

Mr. Early recommended that the *Ridgeline Protection* issue be resolved as part of the project, and that the resolution should be to identify what it really meant and the breadth and applicability of the protections and where those protections applied.

Councilmember Trotter emphasized that the statement in that key project issue was incomplete, in that the definition of ridgeline would have to be clarified given that it was currently unsatisfactory in the General Plan. While he did not support a broad General Plan update, he suggested there needed to be some targeted General Plan amendments which would include the definition of ridgeline in an appropriate manner.

When asked if there could be a correlation of the definition to the map, Ms. Clark stated that there was a map component in that the General Plan identified only certain

geographical features as Ridgelines, although there were other ridge-like features that were not called specifically as ridgelines that were protected.

Mr. Early advised that would be incorporate into the overall list of questions. He suggested there were fundamentally two ways to address that issue: A map of all the specifically ridgelines in Town could be developed and while not every feature that could be identified as a ridgeline would be included, establish what areas are specifically protected could provide clarity; or a ridgeline could be defined and for any specific development project a developer would have to use that definition to identify the ridgelines on a site, although the problem with that method would be that no one would know exactly where protected ridgelines were, unless and until there was a development proposal, and then the findings regarding ridges would be subject to debate.

Ms. Clark stated that currently there was a hybrid of both, although neither was satisfactory, and in particular the definition of ridgelines had been debated as to what it actually meant and to what features it applied.

Councilmember Metcalf commented that this issue could not be unique to Moraga and asked to be provided with information on what had worked successfully elsewhere.

With respect to *Definition of Development*, Mr. Early stated that the Town's codes and regulations currently applied to all development, although those codes and regulations might not have been intended to apply to all development, and there should be a discussion of whether grading and limited surface facilities qualified as development and/or whether to make the definition of development any more specific.

For *Development on Steep Slopes*, Mr. Early noted the following questions/issues that exist and could be addressed over the remainder of the project: how slope-based limitations on development address slope variability within parcels; how slope was calculated; if and how slope could be averaged over a site or parcel; whether slope calculations for density levels would occur before or after re-grading. He noted that *What Development Can Occur on Steep Slopes* was similar with respect to how those slopes would be calculated.

Speaking to *Remediation and High-Risk Areas*, Mr. Early explained that a Geotechnical Engineer and subsequent engineering and earthwork could in many cases correct a high-risk area and noted that the extent to which a remediation was allowed as part of a development process should be clarified, including whether remediation could be used to increase development potential.

Councilmember Metcalf asked about remediation of high-risk areas and when it would make sense to remove a risk, such as related to a roadway, even without development. He did not want to see the Town's regulations preclude the Town from doing some sensible things.

Ms. Clark advised that the definition of development already included an exception for grading in the urgent interest of public safety, for instance, to remediate a landslide that

posed a hazard to a major roadway or to life and limb; such grading would not be considered a development and would not be limited by the restrictions.

Mr. Early recommended additional methodologies and standards for *View Protection*, and noted that visibility was not one of the six criteria in the 1992 MOSO Guidelines Development Capability Maps and view protection might need to be enhanced.

Councilmember Trotter asked what options might be available to evaluate views and visibility, to which Mr. Early responded that there were two main approaches to view protection that were not necessarily mutually exclusive: key landmarks or features, such as a ridge, hilltop or outcropping, could be identified and views of those features could be protected; or specific important view corridors and viewpoints could be identified and views from those areas could be protected. He explained that using GIS technology, the views from a whole corridor could be identified. He added that, generally speaking, in California, local governments do not try to protect views from private property

Ben Noble referenced the Town's General Plan Policy CD 1.3 Town to Protect Viewsheds from the Town's Scenic Corridors, had been found to be ambiguous and more specificity as to what that meant was recommended, with more specific criteria to be developed to determine compliance with that particular policy and to identify more specifically the Town's most important viewsheds.

It was noted that no matter the regulatory standards and methodologies that applied, there should be some retained discretion on the planning side, which criteria or guidelines would need to be interpreted on a case-by-case basis by the Planning Commission and other decision makers

Ms. Clark advised that some quantitative standards could be developed, such as by defining a certain view plane above which a roofline could not project; however, she noted it would be more difficult to successfully regulate how much of a view could be obscured, how much of the view needed to be retained, and/or acceptable objects or structures that could be placed within a scenic vista. These latter items would constitute subjective judgments on the part of the decision makers as to a consistent interpretation of the regulations.

DRB Member Glover noted that suggested alternatives to viewshed protection were part of the practical definitions or solutions.

Mr. Early offered examples of the steps that could be taken to identify a viewshed, such as preserving the view from a specific area for instance, and then allowing the Planning Commission or DRB to determine whether that goal was being met or not. He explained that the consultants would provide examples, advice, and recommendations and the Steering Committee would determine how it wanted to proceed.

Mr. Early reported that *Balanced Grading* was currently a goal but not a requirement at this point. With respect to *Grading Standards,* he suggested that issue might need to be less proscriptive to allow site specific flexibility, given there was not as much flexibility as in other communities.

As to the *Hillside Development Permit Process*, Mr. Early explained that some had suggested that the Hillside Development Permit (HDP) process followed by the Planned Development Permit (PDP) had some redundancy and the process could be simplified, or streamlined.

Planning Commissioner Levenfeld asked why the PDP had been included in the process. She stated she felt it was a larger planning issue inappropriate as part of the discussion.

Ms. Clark explained that the PDP had been identified in workshops and the background report, although she agreed it had broader applicability to all subdivision development and should be removed from the hillside and ridgeline project and be discussed on its merits separately.

Councilmember Metcalf agreed and characterized a discussion of the PDP as mission creep given that it was a larger discussion.

With respect to the PDP, Ms. Clark advised that it was applicable to hillside properties as well as others but had broader applicability, and at the very least there was a need to clarify those regulations by themselves to make it a more understandable process.

Mr. Early stated the question with respect to *High-Risk Area Map* and *Land Capability Map,* was whether/how it should be updated, whether to have such a map in the future, and if so how to use it.

Councilmember Trotter advised that Issue 10 would be discussed by the Town Council in 2015.

As to the final issue on the list, *Town-Wide Growth and Development*, Mr. Early stated it was not staff's recommendation to open that issue up at this time but focus instead on Issues 1 through 9, and Issue 11.

PUBLIC COMMENTS:

Suzanne Jones characterized the list as comprehensive, agreed the PDP process was a broader issue, but asked if there were any PDP proposals that would not occur on hillside and ridgeline lands.

In response, Ms. Clark explained that Via Moraga and the Moraga Center were both PDP projects.

Ms. Jones noted that some of the 12 questions would be addressed through General Plan amendments, some through MOSO Guidelines, and some through land use or zoning. She also noted that it would be necessary to consider the treatment of the three different overarching land use areas including non-MOSO, Study lands, and MOSO lands. Addressing the 12 identified issues would require considering these three different contexts.

Ms. Clark agreed that changes could be made to several different documents and sets of regulations and suggested that there could also be consolidations of certain documents and sets of regulations in addition to or instead of individual revisions.

Mr. Early referred to Task C, Hillside Regulation Option and Task D Draft Regulations, which would allow comments from the Steering Committee, the public, the Planning Commission and the Town Council as to how to potentially revise the regulations and/or to consolidate regulations, policies, and associated documents. He emphasized that Task D could not be addressed until Task C had been addressed.

Councilmember Trotter referred to Issues 7 and 8, and questioned whether the Grading Ordinance needed to be revisited in that context. Given a recent update to the Grading Ordinance and the fact that balanced grading was a goal and not a requirement, and given that with environmental impacts it may be better to export material than require it to be balanced on site, he suggested that Issues 7 and 8 could be eliminated.

Ms. Clark agreed that Issues 7 and 8 could be pulled from the project, particularly given that the Grading Ordinance had recently been updated.

Mr. Early advised that he could then proceed with Issues 1 to 6, 9 and 11, although **Councilmember Trotter** was not certain that Issue 12 should be included.

Mr. Early urged members that any additional comments on the issues just discussed or new items that had not been offered to date should be submitted to Ms. Clark who would distribute them consistent with the Brown Act.

Referencing the comment of redundancy between a PDP and an HDP, Ms. Clark explained that the HDP was the permit required on any site that had a slope over 20 percent whether it was a new subdivision or an accesory building, which some had suggested was an excessive requirement, particularly in light of all of the other restrictions and regulations.

Mr. Early stated the issue would be whether the scope of the HDP was too broad.

Councilmember Trotter suggested that the policy question was whether an HDP needed to be required on top of Design Review for an existing homeowner who wanted to do something to improve an existing residential property, as opposed to a new residence or development.

9. PROJECT APPROACH MOVING FORWARD

Mr. Early summarized the current status of the project by stating that the collection and examination of background data under Task A, Project Initiation, and Task B, Background Analysis, was now complete. He stated that it was now possible to move forward as currently scoped; though the potential still existed for an extensive re-scoping or revised approach, it appeared that this was not the desire of the Steering Committee. Nevertheless, he took note of the comments received relating to the perceived need for a broader General Plan update. He suggested that the issues

discussed would be taken to the Town Council for its review at the January 28, 2015 meeting, where they would provide decisive direction on how to proceed with the project. Mr. Early reiterated that the committee had expressed a desire to see issues 1 through 6, issue 9, and issue 11 addressed. He confirmed that project goals remained to eliminate inconsistencies and ambiguities, close loopholes, address gaps, address discrete issues and ensure that the founding principles were consistent and clear. As previously stated, a central goal of the project remained ensuring that the function of the regulations met citizens' expectations for protection and that the regulations clear and enforceable. He also confirmed that the projected was not intended or anticipated to reexamine the overarching issues and principles of the General Plan, or change existing zoning or land use.

Mr. Early recommended continuing with the existing project scope with some minor modifications. These modifications would keep within the existing budget or a slightly augmented budget for the project, and the modfications would conform to the goal of the project to completely addressing the identified issues, relying on the foundation of the existing General Plan, without deferral to a future General Plan update. Although targeted amendments to the General Plan could be considered—for instance, in order to clarify terms or meanings—larger updates to the plans overarching goals or principles would not be considered. After completion of the Hillsides and Ridgelines Project, the Town could consider if and when a more comprehensive General Plan updated was merited. It was not recommended that the project be suspended for a larger General Plan update or to continue the project but focus in on very narrow technical issues. Instead, it would be better to pursue a middle ground under the current scope to address a wide range of issues that could be an amended General Plan but not a full General Plan update.

Mr. Early sought comments on a recommendation to move forward to the Town Council to be able to get started in the early part of 2015 to do that work.

Councilmember Trotter supported the staff recommended approach. He liked what had been done and when it did come to the Council on January 28 suggested it would be useful for the 12 key project issues to be identified for the benefit of the full Council with the understanding that some had been recommended for removal. He suggested that the recommendation be submitted in its entirety as a result.

Councilmember Metcalf supported the project and was encouraged by what had been presented as useful for the Town to solve some current problems. He stated that a General Plan update would have to be done at some point and that he supported the targeted approach, and he suggested that the project represented manageable steps to accomplish what was intended and improve things enough to have achieved something.

An unidentified member of the public also supported the targeted approach and what had been targeted.

Ms. Jones agreed and hoped the remediation and high-risk area issue would remain to be addressed. She questioned at what point the targeted amendments would trigger California Environmental Quality Act (CEQA) requirements.

In response, Ms. Clark noted that substantial changes to land use or things that were more impactful would require environmental review, although generally imposing similar protective or more protective measures would not trigger that review.

Mr. Early clarified that any change to a regulation was considered a project under CEQA and a finding would have to be made of whether there would be a significant impact or not. He suggested it was likely that the regulations would be found to have the same or lesser impact than the current regulations, and no environmental review would be needed. He added at this point no Environmental Impact Report (EIR) was expected.

When asked by Ms. Jones, Ms. Clark reported that any determination under CEQA could potentially be challenged.

Mr. Early verified with the Steering Committee that Issue 12 would be retained on the report although it would not need to move forward to the future phases. Over the next year the remaining issues would be addressed.

Ms. Clark clarified that the item would be presented to the Town Council on January 28, 2015, at which point a schedule would be determined for the project going forward. On the discussion of a meeting schedule, it was reported that meetings once a month for six months, starting in February, were expected, with a meeting schedule to be identified as soon as possible.

10. ADJOURNMENT

The meeting adjourned at 9:00 P.M.

ATTACHMENT C

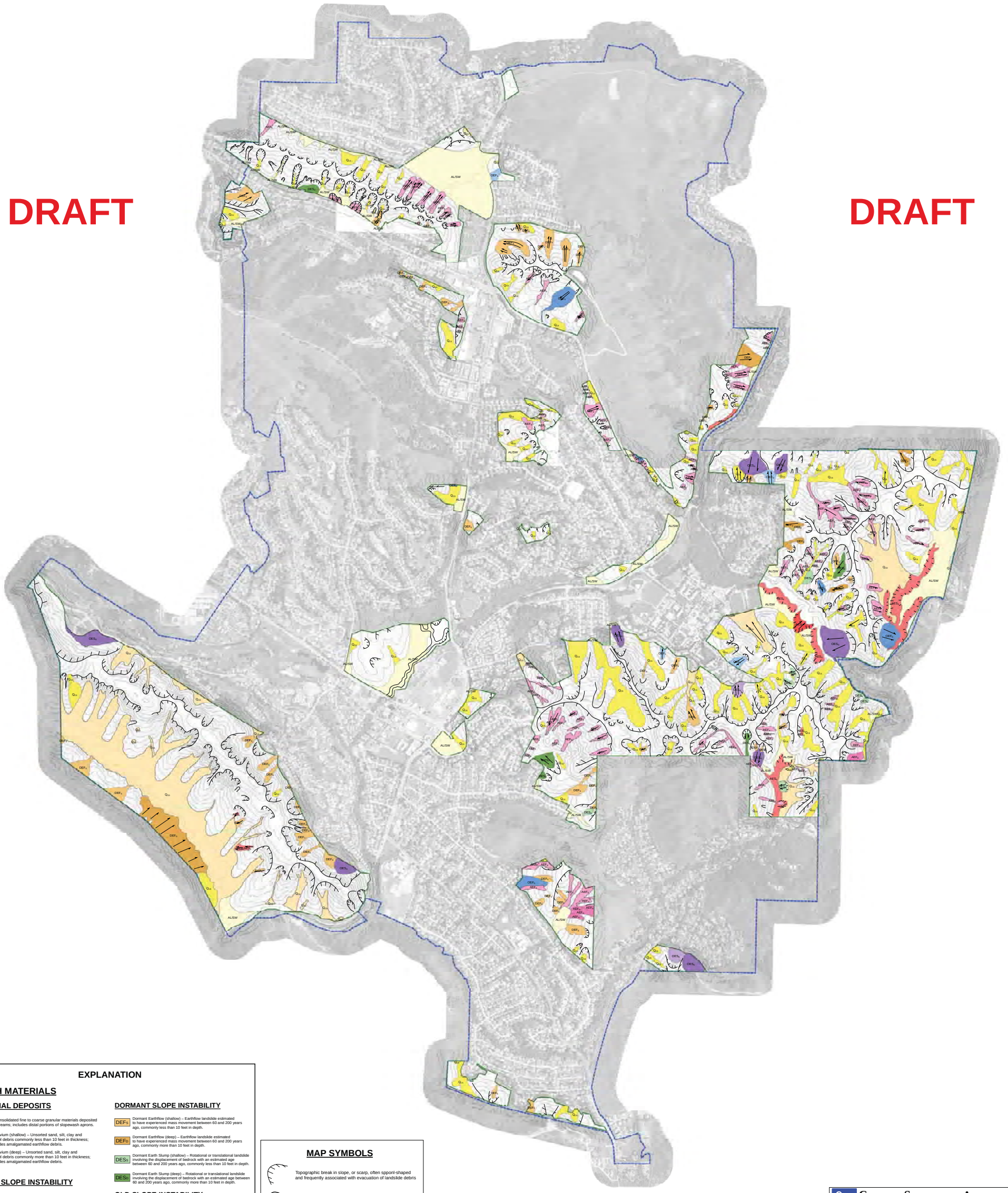
DRAFT LANDSLIDE INVENTORY MAP

Photo-Interpretation Landslide Inventory Map

Town of Moraga, California

DRAFT

DRAFT



EXPLANATION

EARTH MATERIALS

SURFICIAL DEPOSITS

- AL/SW — Unconsolidated fine to coarse granular materials deposited by streams; includes distal portions of slopewash aprons.
- Q_{CS} — Colluvium (shallow) – Unsorted sand, silt, clay and gravel debris commonly less than 10 feet in thickness; includes amalgamated earthflow debris.
- Q_{CD} — Colluvium (deep) – Unsorted sand, silt, clay and gravel debris commonly more than 10 feet in thickness; includes amalgamated earthflow debris.

ACTIVE SLOPE INSTABILITY

- AEF_S — Active Earthflow (shallow) – Earthflow landslide identified as active within the last 60 years, commonly less than 10 feet in depth. This category may include recent debris flows.
- AEF_D — Active Earthflow (deep) – Earthflow landslide identified as active within the last 60 years, commonly more than 10 feet in depth. This category may include recent debris flows.
- AES_S — Active Earth Slump (shallow) – Rotational or translational landslide involving the displacement of bedrock identified as active within the last 60 years, commonly less than 10 feet in depth.
- AES_D — Active Earth Slump (deep) – Rotational or translational landslide involving the displacement of bedrock identified as active within the last 60 years, commonly more than 10 feet in depth.

DORMANT SLOPE INSTABILITY

- DEF_S — Dormant Earthflow (shallow) – Earthflow landslide estimated to have experienced mass movement between 60 and 200 years ago, commonly less than 10 feet in depth.
- DEF_D — Dormant Earthflow (deep) – Earthflow landslide estimated to have experienced mass movement between 60 and 200 years ago, commonly more than 10 feet in depth.
- DES_S — Dormant Earth Slump (shallow) – Rotational or translational landslide involving the displacement of bedrock with an estimated age between 60 and 200 years ago, commonly less than 10 feet in depth.
- DES_D — Dormant Earth Slump (deep) – Rotational or translational landslide involving the displacement of bedrock with an estimated age between 60 and 200 years ago, commonly more than 10 feet in depth.

OLD SLOPE INSTABILITY

- OEF_S — Old Earthflow (shallow) – Earthflow landslide estimated to have experienced mass movement more than 200 years in the past, commonly less than 10 feet in depth.
- OEF_D — Old Earthflow (deep) – Earthflow landslide estimated to have experienced mass movement more than 200 years in the past, commonly more than 10 feet in depth
- OES_S — Old Earth Slump (Shallow) – Rotational or translational landslide involving the displacement of bedrock with an estimated age more than 200 years, commonly less than 10 feet in depth.
- OES_D — Old Earth Slump (deep) – Rotational or translational landslide involving the displacement of bedrock with an estimated age more than 200 years, commonly more than 10 feet in depth.

MAP SYMBOLS

- Topographic break in slope, or scarp, often spponl-shaped and frequently associated with evacuation of landslide debris
- Landslide deposit with arrows indicating approximate movement direction.
- Top of Bank
- Artificial cut slope
- Mapping of Designated Study Areas
- Town Boundary

NOTE TO USERS

This map was prepared utilizing stereo aerial photo mapping methods. Air photos taken in 1954 and 2002 were used to delineate areas of past landslide activity. All boundaries between zones are located approximately. Information on this map is NOT sufficient to serve as a substitute for detailed, site-specific geologic and geotechnical investigations. Mapping has been completed within designated areas selected by the Town for planning evaluation purposes.

N

0 600 1,200 2,400 3,600 Feet

COTTON, SHIRES AND ASSOCIATES, INC.
CONSULTING ENGINEERS AND GEOLOGISTS

Photo-Interpretation Landslide Inventory Map
Town of Moraga, Calfornia

GEO/ENG BY JW	SCALE 1"= 600'	PROJECT NO. G5014
APPROVED BY TS	DATE JUNE 2014	PLATE NO. 1 OF 1

ATTACHMENT D

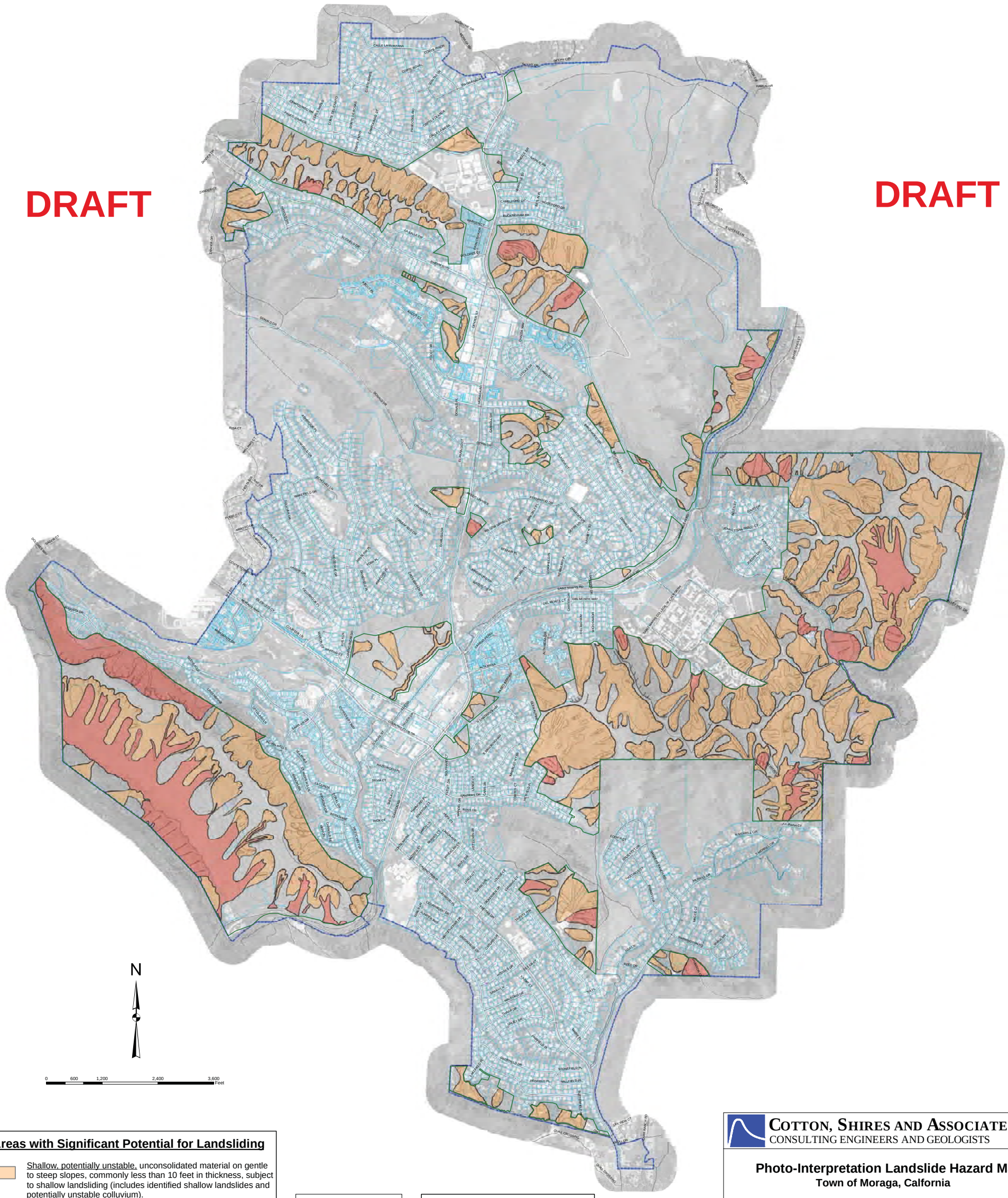
DRAFT LANDSLIDE HAZARD MAP

PHOTO-INTERPRETATION LANDSLIDE HAZARD MAP

Town of Moraga, California

DRAFT

DRAFT



Areas with Significant Potential for Landsliding

Shallow, potentially unstable, unconsolidated material on gentle to steep slopes, commonly less than 10 feet in thickness, subject to shallow landsliding (includes identified shallow landslides and potentially unstable colluvium).

Deep, potential unstable, unconsolidated or detached materials on moderate to steep slopes, commonly more than 10 feet in thickness, subject to more significant landsliding (includes identified deep landslides and earth materials susceptible to deep failure).

Map Symbols

Mapping of Designated Study Areas

Town Boundary

NOTE TO USERS:

This is an interpretive map derived from the Photo-Interpretation Landslide Inventory Map of the Town of Moraga. All boundaries between zones are located approximately. Information on this map is NOT sufficient to serve as a substitute for detailed, site-specific geologic and geotechnical investigations. The map illustrates landslide hazards of ground in its natural undisturbed state. Works of man may seriously alter the stability of the ground.

COTTON, SHIRES AND ASSOCIATES, INC.
CONSULTING ENGINEERS AND GEOLOGISTS

Photo-Interpretation Landslide Hazard Map
Town of Moraga, Calfornia

GEO/ENG BY JW	SCALE 1"= 600'	PROJECT NO. G5014
APPROVED BY TS	DATE JUNE 2014	PLATE NO. 1 OF 1

ATTACHMENT E

MOSO GUIDELINES DEVELOPMENT
CAPABILITY MAP

DEVELOPMENT CAPABILITY MAP

SUMMARY

LABEL	NAME	INSIDE TOWN LIMITS NO CELLS	ACRES	%	OUTSIDE TOWN LIMITS NO CELLS	ACRES	%
0	NO DATA	0	.00	.00	237	217.63	4.15
1	LOW -	0	.00	.00	0	.00	.00
2	LOW	309	283.75	4.66	166	152.43	2.91
3	LOW +	2285	2098.26	34.44	2444	2244.26	42.82
4	MEDIUM -	1226	1125.80	18.48	725	665.75	12.70
5	MEDIUM	420	385.67	6.33	612	561.98	10.72
6	MEDIUM +	831	763.09	12.53	714	655.65	12.51
7	HIGH -	410	376.49	6.18	123	112.95	2.15
8	HIGH	1153	1058.77	17.38	687	630.85	12.04
9	HIGH +	0	.00	.00	0	.00	.00

General Plan Program

TOWN OF MORAGA

OFFICIAL EXHIBIT

EXHIBIT D

MORAGA OPEN SPACE ORDINANCE INTERPRETATION GUIDELINES

FEBRUARY 12, 1992

COMARC DESIGN SYSTEMS

The Agriculture Building Embarcadero at Mission
San Francisco, California 94105

0 600 1800

ATTACHMENT F

LANDSLIDE HAZARD MAP LAYERED ON TOP THE MOSO GUIDELINES DEVELOPMENT CAPABILITY MAP

Data Sources:Town of Moraga, 2013; Cotton Shires, 2014; Contra Costa County, 2013; USGS, 2006, 2013; PlaceWorks, 2014.

1992 Development Compatibility

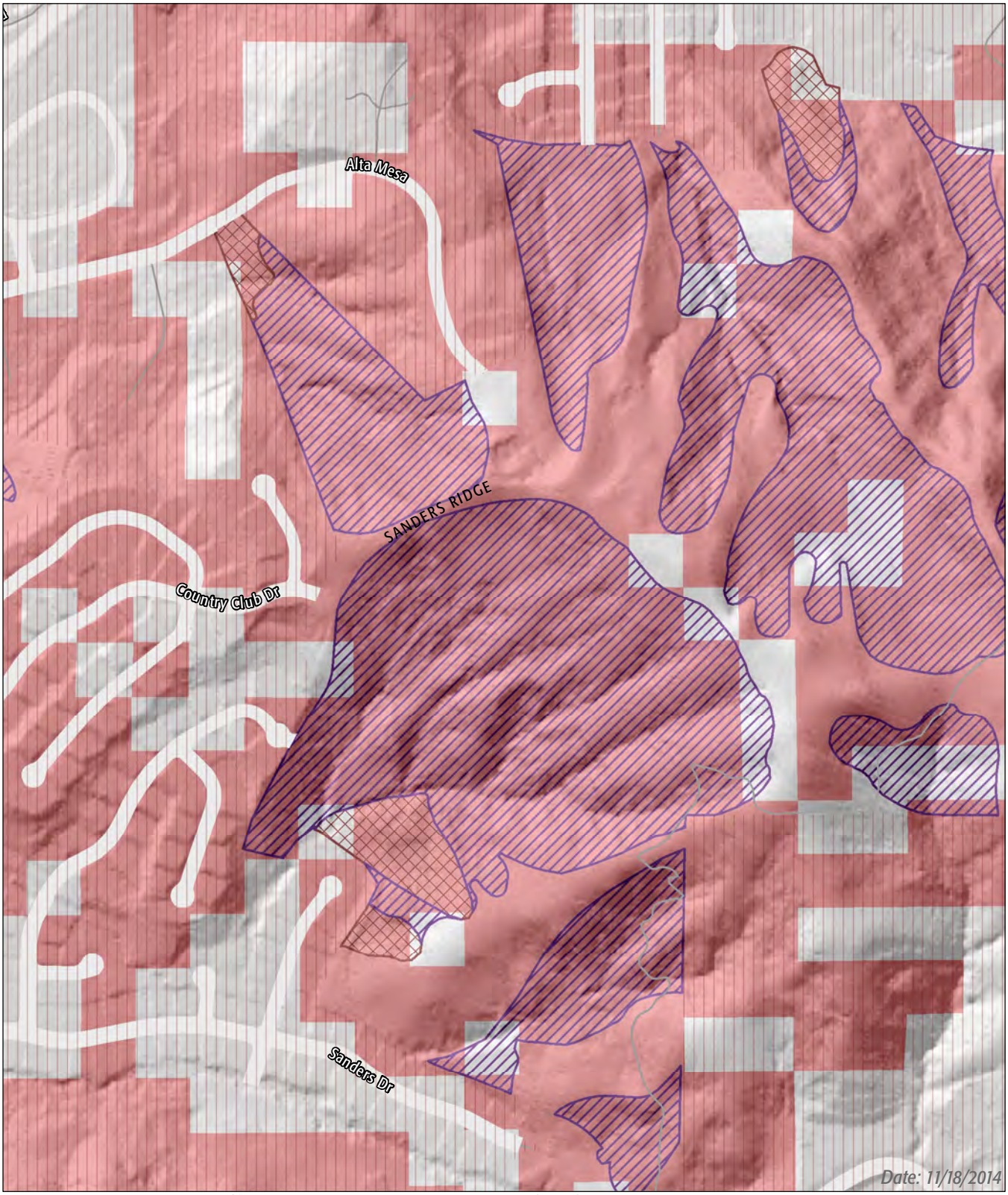
<5 - Low capability

Shallow unstable, unconsolidated material on gentle to steep slopes, commonly less than 10 feet in thickness, subject to shallow landsliding (includes identified shallow landslides and potentially unstable colluvium).

Deep unstable, unconsolidated or detached materials on moderate to steep slopes, commonly more than 10 feet in thickness, subject to more significant landsliding (includes identified deep landslides and earth materials susceptible to deep failure).

EXAMPLE COMPARISON OF 1992 DEVELOPMENT CAPABILITY FROM TOWN OF MORAGA EXHIBIT D AND 2014 LANDSLIDE MAPPING

0 250 500 Feet



Data Sources:Town of Moraga, 2013; Cotton Shires, 2014; Contra Costa County, 2013; USGS, 2006, 2013; PlaceWorks, 2014.

1992 Development Compatibility

<5 - Low capability

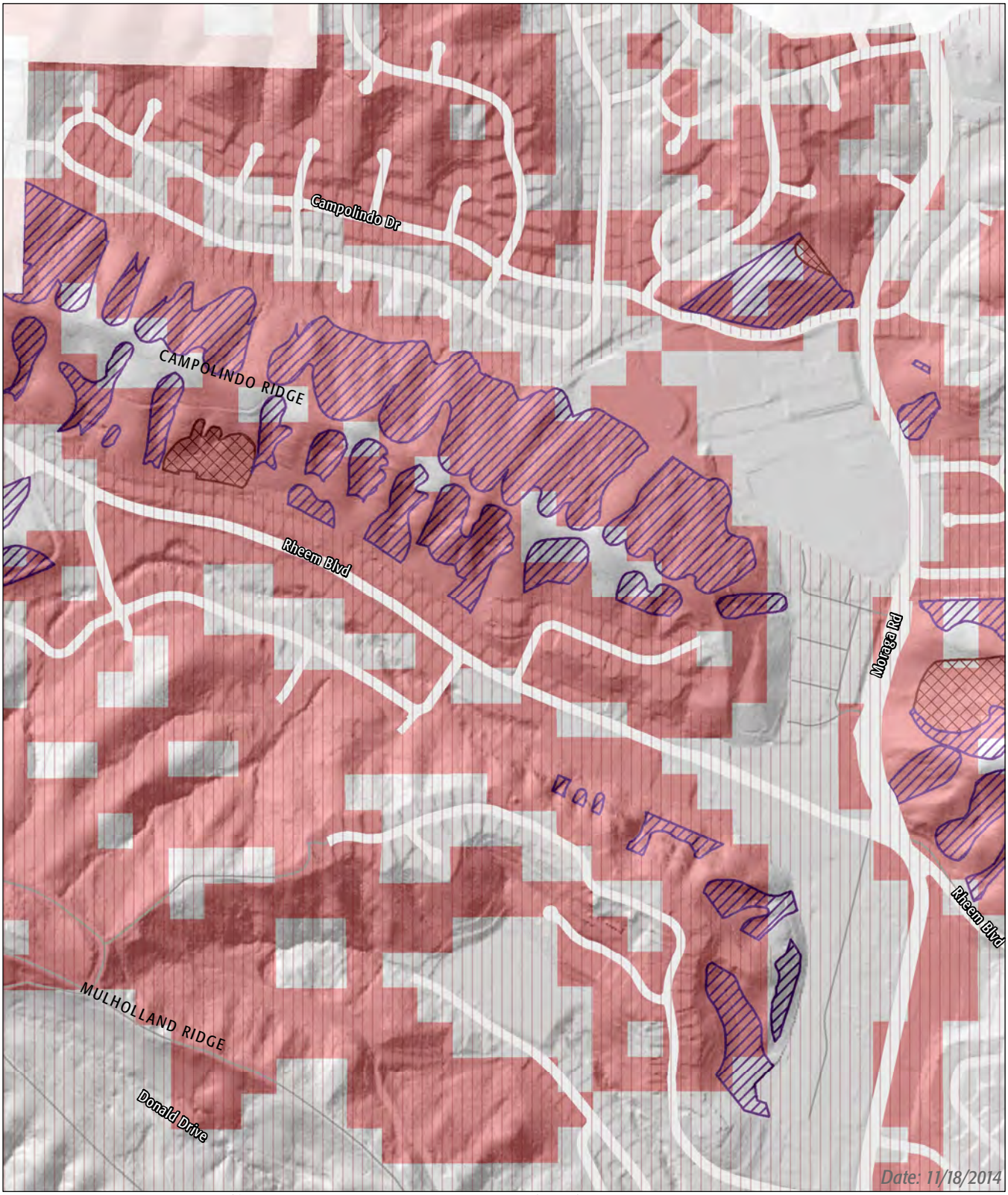
Areas not included in landslide mapping

Shallow unstable, unconsolidated material on gentle to steep slopes, commonly less than 10 feet in thickness, subject to shallow landsliding (includes identified shallow landslides and potentially unstable colluvium).

Deep unstable, unconsolidated or detached materials on moderate to steep slopes, commonly more than 10 feet in thickness, subject to more significant landsliding (includes identified deep landslides and earth materials susceptible to deep failure).

EXAMPLE COMPARISON OF 1992 DEVELOPMENT CAPABILITY FROM TOWN OF MORAGA EXHIBIT D AND 2014 LANDSLIDE MAPPING

0 250 500 Feet



Data Sources:Town of Moraga, 2013; Cotton Shires, 2014; Contra Costa County, 2013; USGS, 2006, 2013; PlaceWorks, 2014.

1992 Development Compatibility

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EXAMPLE COMPARISON OF 1992 DEVELOPMENT CAPABILITY FROM TOWN OF MORAGA EXHIBIT D AND 2014 LANDSLIDE MAPPING

0 250 500 Feet

ATTACHMENT G

REVISED BACKGROUND REPORT

Understanding Moraga's Hillside Regulations

Town of Moraga

REVISED November, 2014

Prepared by:

PLACEWORKS

Understanding Moraga's Hillside Regulations

Town of Moraga
REVISED November, 2014

Prepared by:

PLACEWORKS

1625 Shattuck Avenue, Suite 300
Berkeley, California 94709
510.848.3815
510.848.4315 (f)

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APPENDICES

Diagrams

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CHAPTER 1:
INTRODUCTION

Hillsides and ridgelines are a core component of Moraga's unique identity. They create the picturesque setting for the town's semi-rural character. They are an environmental resource with open space and habitat critical for a healthy environment. Moraga's hillsides and ridgelines contribute to a high quality of life, which residents wish to protect and preserve for future generations to enjoy.

Hillsides and ridgelines are also part of a larger fabric of community values. As described in the Town's General Plan, residents also value the ability to easily move around in town and commute to work. They value local shopping and commercial services, and high-quality community facilities such as schools, parks, and recreational facilities. Residents also value a variety of housing options that meet the needs of current and future residents.

Moraga's General Plan expresses the community's values and serves as the compass that guides both development and conservation in the town. In California, General Plans serve as a "constitution" for planning, development, and conservation decisions within a community. The policies of the General Plan provide the framework for zoning and other regulations, as well as for specific development decisions. Moraga's General Plan includes diverse policies that support a variety of stated community values, including environmental preservation, mobility, shopping and services, and housing, among others. As the Town considers changes to its hillside and ridgelines regulations, it will consider all of the values and principles established in the 2002 General Plan.

Different community values can come into conflict when development occurs. This is particularly true with development in Moraga's hillside and ridgeline areas. Many residents are familiar with a long history of conflict over hillside development, which prompted voters to adopt the Moraga Open Space Ordinance (MOSO) in 1986.

View north from Sanders Ridge foothills toward Corliss area

View northwest toward Mulholland and Campolindo Ridges from Saint Mary's College

Guiding Principles of the Moraga General Plan

Environmental Preservation

We value our beautiful natural setting, including its open spaces, environmental resources, and natural recreation opportunities.

Guiding Principle 1: Preserve the Town's natural setting and environmental resources, including its undeveloped ridgelines and significant open space areas.

Community Design and Character

We value our attractive community environment and our semi-rural setting, and we take pride in our well-maintained homes, abundant landscaping, and high design standards.

We value our sense of community and the opportunities we have to get together, formally and informally.

Guiding Principle 2: Protect and enhance the character and quality of residential neighborhoods, maintaining a predominantly single family character in a semi-rural setting.

Guiding Principle 3: Ensure that the design and quality of new development contributes to a positive community aesthetic and enhancement of the Town's scenic corridors, in keeping with Moraga's natural setting and high standards for good design.

Guiding Principle 4: Create a community 'focal point' in the vicinity of the Moraga Center shopping area and Moraga Commons.

Mobility

We value being able to get to and from work in other communities with relative ease.

We value having convenient and free parking in our commercial areas.

We value being able to get around town easily and being able to bike and walk safely between our homes, schools, and other places we need to go.

We value the potential benefits offered by new communication technologies that may allow us to both live and work in Moraga, either in home offices or small office spaces within the Town.

Guiding Principle 5: Strive to maintain traffic levels of service within the Town and to improve the traffic conditions on Lamorinda roadways leading to Highway 24.

Guiding Principle 6: Facilitate bicycle and pedestrian circulation in the Town for transportation and recreational uses, and encourage alternatives to single-occupancy motor vehicles on roadways leading to Highway 24 and BART.

Guiding Principle 7: Encourage land uses, development patterns, and utilization of new communication and transportation technologies that may help reduce automobile trips and air pollution, ensuring that new wireless communication facilities are sited and designed to preserve the Town's unique visual character.

Shopping and Services

We value our local business community and the convenient shopping and services they provide as well as their ongoing civic and community involvement.

Guiding Principle 8: Work closely with local businesses to ensure a positive business environment in keeping with local needs and priorities.

Housing

We value having a variety of quality housing options available in our community so that our children, seniors, and local work force can continue to call Moraga home.

Guiding Principle 9: Encourage a mix of housing types to help meet the needs of different households and different levels of affordability.

Community Facilities and Services

We value our excellent schools, beautiful parks, library, youth activities, senior services, community events, and recreational opportunities.

We value Saint Mary's College as part of our community and are committed to maintaining a positive, collaborative relationship with its administration, faculty and students.

Guiding Principle 10:
Provide high quality, cost-effective community facilities to meet the needs of all age groups and people of all abilities, within the means of the Town.

Guiding Principle 11:
Work closely with the local school districts and Saint Mary's College to ensure coordination on issues of mutual concern and enhance the quality of life in Moraga.

Public Safety

We value living in a safe environment.

Guiding Principle 12: Protect public health and safety, taking into consideration both natural and man-made hazards.

Community Decision-Making

We value our tradition of citizen activism and volunteerism, where all citizens have a voice in decision-making.

We value having productive working relations with our neighbors to ensure effective solutions to local and regional issues.

Guiding Principle 13: Ensure ongoing, meaningful citizen participation in the Town's decision-making processes.

Guiding Principle 14: Work closely with adjacent jurisdictions and other relevant agencies to ensure coordination on issues of mutual concern.

LAND USE REGULATION: BALANCING PUBLIC GOOD AND PROPERTY RIGHTS

Local land use regulations are subject to many State and federal laws, including constitutional provisions. Such regulations, which include laws like those governing hillside and ridgeline development in Moraga must also abide by legal precedents, reflecting interpretations decided by complex court cases and resultant case law.

Under U.S. constitutional law, state governments are permitted to use their "police power" to "protect the safety, health, welfare, and morals" of the public. State governments delegate some of these powers to counties, cities, and towns who use the police power to regulate land use at the local level. Courts have ruled that in some cases land use regulations may go too far, by infringing on the rights of the people who own property subject to those regulations.

Local governments must ensure that their land use laws are consistent with other applicable laws and relevant court decisions. An example of this is the "takings clause", which is included in the 5th Amendment to the US Constitution and states that private property shall not be taken for a public use without just compensation. Application of this clause has been extensively litigated over time, with courts concluding that if a land use regulation deprives a particular property of "all viable economic use," then it may be considered equivalent to a government taking and the property owner must be fairly compensated. Recent court cases have concluded that land use regulations must also advance a "legitimate" state or public interest.

In most court cases, judges have found that land use regulations do advance a legitimate public interest. Further, provided a property also continues to have some economic use or value, land use regulations that apply to it have typically been upheld. On the other hand, courts have applied stricter standards when local governments require projects to pay certain fees, or provide community benefits, such as public access or new facilities. Many of the court cases have considered whether there is an appropriate "nexus" or relationship between the type and amount of fee or benefit being demanded, and the impacts or effects of the development. Any changes to Moraga's policies and regulations must comply with State and federal law regarding land use regulations.

Many town residents, and many of the Town's adopted policies seek to maximize the amount of permanently protected open space in Moraga, whether as publicly-accessible areas, or simply areas kept in their natural state and free of development to protect habitat or views that are considered important. The fact that hillsides in Moraga are prone to natural hazards is also a rationale for limiting development in regard to public safety. These are the sort of legitimate public interests that can be served by creating or preserving permanently protected open space areas.

At the same time, much of Moraga's open space is privately owned and zoned to allow some amount of residential development. It would be unconstitutional for the Town to create regulations that prevented all development on these properties without providing compensation to the owners. Moraga must ensure that its regulations appropriately balance the benefits of open space with the constitutional rights of property owners. Furthermore, there is debate in the community about the public interests served by preserving open space; balancing those interests with those of a developer wishing to realize value from his or her property; and understanding that there are public interests served by, for example, increasing the property tax base to fund services, constructing off-site improvements, or by stimulating support for local businesses. The General Plan's policies equally recognize and reflect this set of interests.

As development projects have come forward, even with MOSO in place, each has been the subject of ongoing debate and controversy, lengthy and complex approval processes, and heated discussion on all sides. Such debate has even been given individualized attention in the Moraga General Plan, which specifically addresses the special studies and considerations applicable to the few remaining large areas with development potential within the town, such as Bollinger Valley.

Some of the conflict over development is caused in part by disagreements over fundamental questions of growth and change in the community. But it is also caused by disagreements over the meaning of specific development rules and regulations. For example, what exactly does "protect ridgelines" mean? Can remediation be used to increase allowable density in geologic hazard areas? Unresolved disagreements over these and other questions leave all sides frustrated—whether it's residents concerned about hillside development, or applicants or property owners who lack certainty about both the rules, and the likelihood or necessity of additional steps for project approval. Ideally, selected approaches to resolving these disagreements will be seen as fair by all stakeholders and will strike a balance among sometimes competing community values.

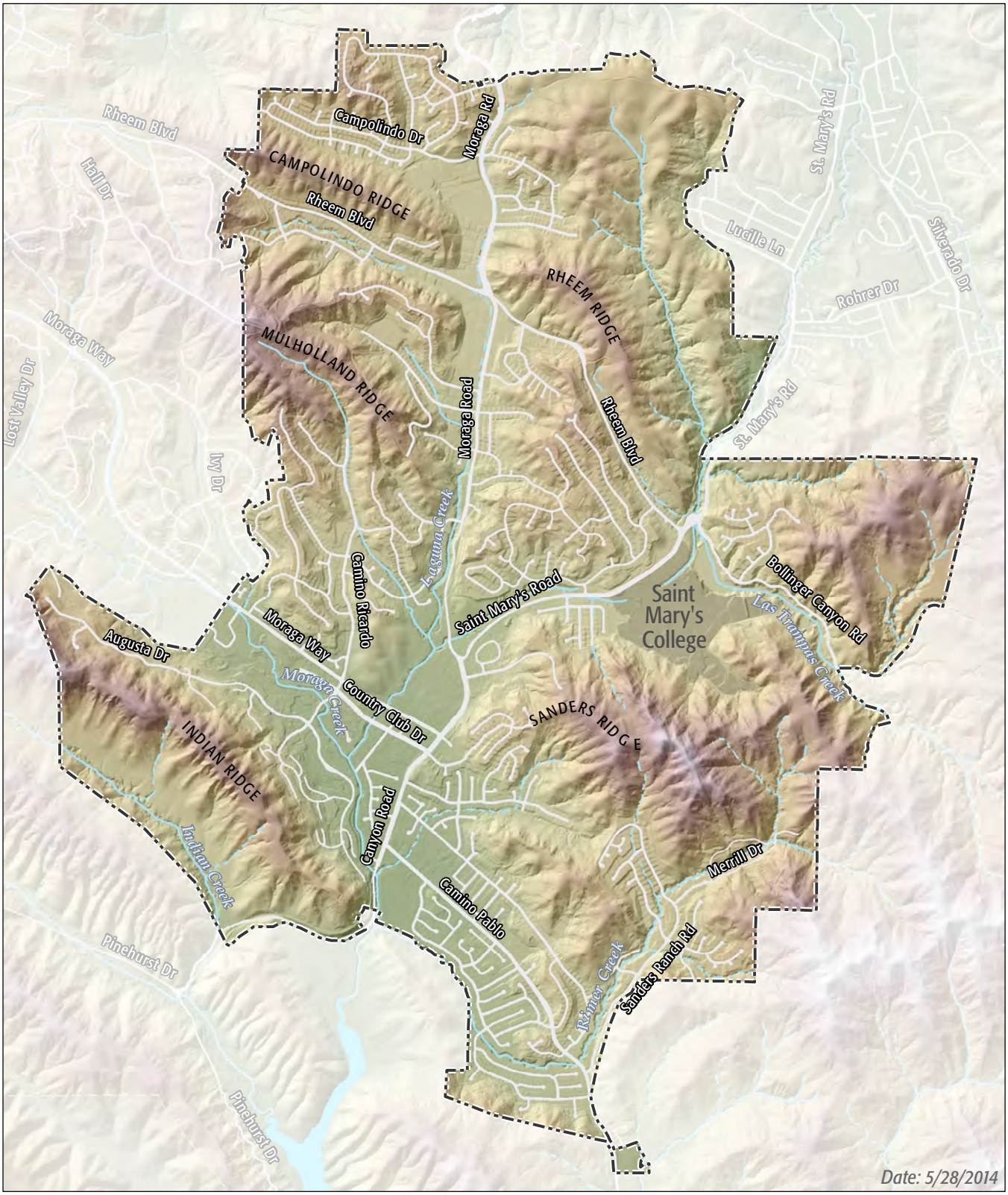
THE HILLSIDES AND RIDGELINES PROJECT

With these questions in mind, The Town Council initiated the Hillside and Ridgelines project in late 2013. The project aims to make targeted amendments to existing regulations to clarify requirements, increase certainty, and better support the town's goals and values. Rather than being tailored to address any particular development proposal, the project will create clear, factual, and technically-sound background data to support all future decision making, with the goal of ensuring better, less contentious outcomes for all development and conservation decisions.

The project will look at rules that apply to all of Moraga's hillsides areas, not just those in MOSO Open Space. Map 1 shows the general location of hillside areas in Moraga based on slope and elevation. Moraga's hillside rules and regulations are primarily found in the documents listed below. Note that this list does not reflect all regulations, fees, or other requirements that the Town has in place for development and conservation projects, discussion of which is outside the scope of this project.

Relevant documents include:

- Moraga General Plan
- Moraga Open Space Ordinance (MOSO)
- Guidelines for Interpreting and Implementing the Moraga Open Space Initiative ("MOSO Guidelines")
- Moraga Design Guidelines
- Grading Ordinance (Municipal Code Title 14)
- Moraga Zoning Ordinance, particularly chapters 8.48 (Planned Development District), 8.52 (MOSO and Non-MOSO Open Space), 8.128 (Ridgeline Protection), 8.132 (Scenic Corridors), 8.136 (Slope Density)



Data Sources: Town of Moraga, 2013; Contra Costa County, 2013; USGS, 2013; PlaceWorks, 2014.

MAP 1
MORAGA HILLSIDE AREAS

Major/Permanent Stream
Minor/Intermittent Stream
Town Boundary

0 0.5 1 Miles

Because MOSO was originally adopted as a voter initiative, the Town may not amend it without a vote of the people. Other documents may be amended as part of this project. This project may also result in new regulatory tools, such as a new hillside overlay zone or criteria for assessing visual impacts. The Town may also simplify or perhaps entirely eliminate existing regulations that are unnecessary or duplicative. As the Hillsides and Ridgelines Project proceeds, conservation and development decisions will remain subject to whatever policies and regulations are in place at the time those decisions are made. Projects that are already approved will be permitted to move forward in accordance with their particular entitlements or approvals.

Amendments to Moraga's hillside regulations must carefully balance numerous community values, including open space preservation, housing availability, and economic development. To help achieve this balance, amendments to hillside regulations will be guided by principles of "smart regulation." These principles reflect commonly held values, and articulate an approach to regulation that is effective, efficient, fair, and legitimate. They will provide a framework by which the community can evaluate options and select a preferred approach that is consistent with Moraga's values and goals. Although these are the primary principles suggested for crafting "smart regulation," specific communities may wish to incorporate additional principles or values.

The Hillside and Ridgelines project began in 2014 and will include the following tasks:

1. Project Initiation – Receive preliminary community input on key hillside issues
   (completed)
2. Background Analysis (including this report)– Develop background data and maps to address key issues
   (Early 2015)
3. Hillside Regulation Options – Prepare options for how to address key issues
   (Early 2015)
4. Draft Regulations – Prepare draft amendments to Town's policies and regulations
   (Mid 2015)
5. Review and Adoption – Adopt amended policies and regulations
   (Late 2015)

Community participation is an essential part of the Hillsides and Ridgelines project. The Town aims to provide for a fair, open, and transparent process and to solicit a diversity of opinions and points of view. The Town also seeks to promote civil and constructive engagement and to approach difficult issues in the spirit of creative problem solving.

Principles of Smart Regulation

1. Effectiveness

Smart Regulation produces its intended results. It is simple for the public to comply with and easy for the jurisdiction to enforce. Outcomes are predictable and uncertainty is minimized. Regulations are clear and easy to understand and consistent with other laws and policies at the local, state, and federal levels.

2. Efficiency

Smart Regulation utilizes the least burdensome tool to achieve its objectives. It is targeted at the core issue and minimizes negative side effects and unintended consequences. Regulations allow for varied approaches to achieve desired outcomes and promote freedom of choice, innovation, and creativity.

3. Fairness

Smart Regulation treats all persons fairly. Rules are reasonable and applied consistently. Residents are aware of pending decisions, and able to influence their outcomes. Regulations support decision-making that is equitable, accessible, and open to the public.

4. Legitimacy

Smart Regulation is grounded in adopted policy. It supports democratic representation with accountability of elected officials. Regulations appropriately balance competing community goals and values and are necessary to promote the public welfare.

What is the Moraga Open Space Ordinance (MOSO)?

Moraga voters approved the *Moraga Open Space Ordinance* (MOSO) in 1986. MOSO limits residential densities in certain areas designated as "Open Space Lands." MOSO also prohibits development in high slope areas and near ridgelines within MOSO Open Space Lands. Map 2 in Chapter 2 shows the boundaries of MOSO Open Space Lands.

As called for by MOSO, the Town Council adopted the *Guidelines for Interpreting and Implementing the Moraga Open Space Initiative* in 1986. Since adoption, these "MOSO Guidelines" were updated in 1987, 1992, and 1999. The MOSO Guidelines provide detailed guidance on the interpretation and application of the MOSO Initiative. Key contents of the MOSO Guidelines include definition of terms, rules for calculating slope of a development site, procedures for determining allowable density, and details on "high risk area" determinations in MOSO Open Space.

MOSO is also implemented through other Town documents, including the General Plan, Design Guidelines, and Zoning Ordinance. All Town policies and regulations must be consistent with MOSO.

MOSO was not the first set of regulations adopted in Moraga to help regulate hillside and ridgeline development. More recently, in 2008, two ballot measures were proposed that would have made changes to MOSO. Measure J would have increased the area covered by MOSO while also adopting development agreements for the Bollinger Canyon and Indian Valley areas. Measure K would have placed certain areas under a new category of open space called "MOSO 2008 OS," and also expanded areas subject to the 1986 MOSO regulations. Both of these measures failed, and ongoing disagreements surrounding hillside and ridgeline development and conservation have prompted the current Hillside and Ridgelines Project.

Timeline of Hillside and Ridgeline Regulation in Moraga

1974	Town of Moraga is incorporated
1975	Moraga Municipal Code is updated to include design review requirements (Chapters 2.20, 8.72, 14.08, and 14.12)
1980	Moraga Municipal Code is updated to include ridgeline protection, slope density regulations, and regulations for planned development districts (Chapters 8.128, 8.136, and 8.48)
1986	Moraga voters approve Moraga Open Space Ordinance (MOSO)
1986	Town Council approves MOSO Implementation Guidelines (Res. No. 20-86)
1987	Town Council approves updates to MOSO Implementation Guidelines (Res. No. 40-87)
1992	Town Council approves updates to MOSO Implementation Guidelines (Res. No. 14-92)
1999	Town Council approves updates to MOSO Implementation Guidelines (Res. No. 6-99)
2002	Town Council adopts current Moraga General Plan
2006	Town Council adopts the Grading Ordinance (Title 14 of the Municipal Code)
2008	Moraga voters reject ballot Measures J and K, which address issues related to MOSO and open space
2013	Town Council Initiates Moraga Hillsides and Ridgelines Project

Over the course of the project, the Town will host at least three community workshops to receive public input. Residents may also provide input through study sessions with the Town Council and Planning Commission, meetings of the Steering Committee, and formal public hearings. During the early phases of the Project, the Project Team also conducted multiple stakeholder interviews with diverse interest groups, including landowners and developers, open space advocates, engineers, and active Moraga citizens. The interviews provided the Project Team with a wide variety of perspectives on hillside and ridgeline preservation and development in Moraga.

Additionally, the project is being guided by a six-member Steering Committee composed of members of the Town Council, Planning Commission, Design Review Board, and Parks and Recreation Commission. The Steering Committee will provide feedback and direction on draft project materials to Town staff and will help ensure that project outcomes reflect the full diversity of opinions in the community.

For the Hillsides and Ridgelines project, the Town will supplement traditional in-person meetings with an online discussion forum called Open Town Hall. Key project questions will be posted on Open Town Hall throughout the process. Open Town Hall will make it easier for residents to provide input and will increase the amount and diversity of input received. Town official wills review input provided through Open Town Hall prior to making decisions during this process.

For more information on the Hillsides and Ridgelines Project, see www.moraga.ca.us/hillsides.

DOCUMENT OVERVIEW

This document aims to help the community better understand Moraga's hillside and ridgeline regulations. These regulations are extensive and complicated, and few people fully understand all of the important details. If more people understand these regulations, the Town can more easily identify and address existing problems in a way that benefits the community.

Chapter 2 explains existing regulations in the format of answers to a series of questions. Questions are organized around eight general topics. Answers to questions are in plain and simple English so that they can be easily understood by the average reader. Maps and diagrams provide additional guidance. Source materials are identified in margins and endnotes for readers who want to take a closer look. These source materials are attached to this document as Appendices.

Chapter 2 also highlights some aspects of the existing regulations that have been identified as potential issues or points of discussion that may be the subject of future study. These issues are noted with a question mark symbol. Highlighted items reflect public input provided at the first community workshop, at stakeholder interviews, and on Open Town Hall. Chapter 3 presents a summary of this initial issue list, with the expectation that the list is a starting point for discussion, and will be refined and/or expanded with additional input from the Steering Committee and community.

These potential issues are not policy recommendations, but instead reflect diverse topics of interest that may be explored further as the Project progresses. The list of issues and topics of interest were identified based upon feedback that the project team received from a variety of sources. If and when changes to policies or regulations are made as a result of the Hillside and Ridgelines Project, those changes may be subject to environmental study and review under the California Environmental Quality Act (CEQA).

The Town released a preliminary draft of this document on May 30, 2014. Town staff received public comments on this preliminary draft through June 30, 2014. This final draft reflects comments received, including corrections to any errors or omissions found in the preliminary draft.

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CHAPTER 2:
MORAGA'S HILLSIDE REGULATIONS

Learning more about Moraga's hillside regulations is the first step toward improving them and making them easier to understand. Moraga's hillsides and ridgelines are integral to Moraga's character and quality of life—this is one of the reasons why hillside regulations are so controversial and complex. The Hillsides and Ridgelines Project aims to promote informed discussion between members of the public and Town officials regarding hillsides and ridgelines. To help facilitate this informed discussion, this chapter introduces and explains Moraga's hillside regulations in concise, easily understood terms. It is acknowledged that the specific wording and interpretation of the regulations is at the heart of much of the current and past debate about hillside development. To the extent possible, the information presented in this chapter offers the most literal and direct meaning stated, without attempting to interpret or construe intent, except where explicitly stated. Points for which there does appear to be ambiguity or a need for clarification are called out in the items flagged with a "Question Mark" icon.

A. MOSO AND NON-MOSO OPEN SPACE

1. What is MOSO Open Space? What is non-MOSO Open Space?

Areas in Moraga subject to the Moraga Open Space Ordinance (MOSO) are referred to as "MOSO Open Space." MOSO regulations apply only in these areas. Moraga's General Plan Diagram and Zoning Diagram designate these areas as "MOSO Open Space."

Map 2 shows areas currently designated as MOSO and non-MOSO Open Space. Since MOSO was first adopted, the boundaries have been modified over time, through adoption of map amendments by the Town Council.

Open space areas in Moraga that are not subject to the Moraga Open Space Ordinance are referred to as "Non-MOSO Open Space." Development regulations for Non-MOSO Open Space are different than for MOSO Open Space. Moraga's General Plan Diagram and the Zoning Diagram designate these areas as "Open Space." Map 2 shows the boundaries for MOSO and Non-MOSO Open Space.

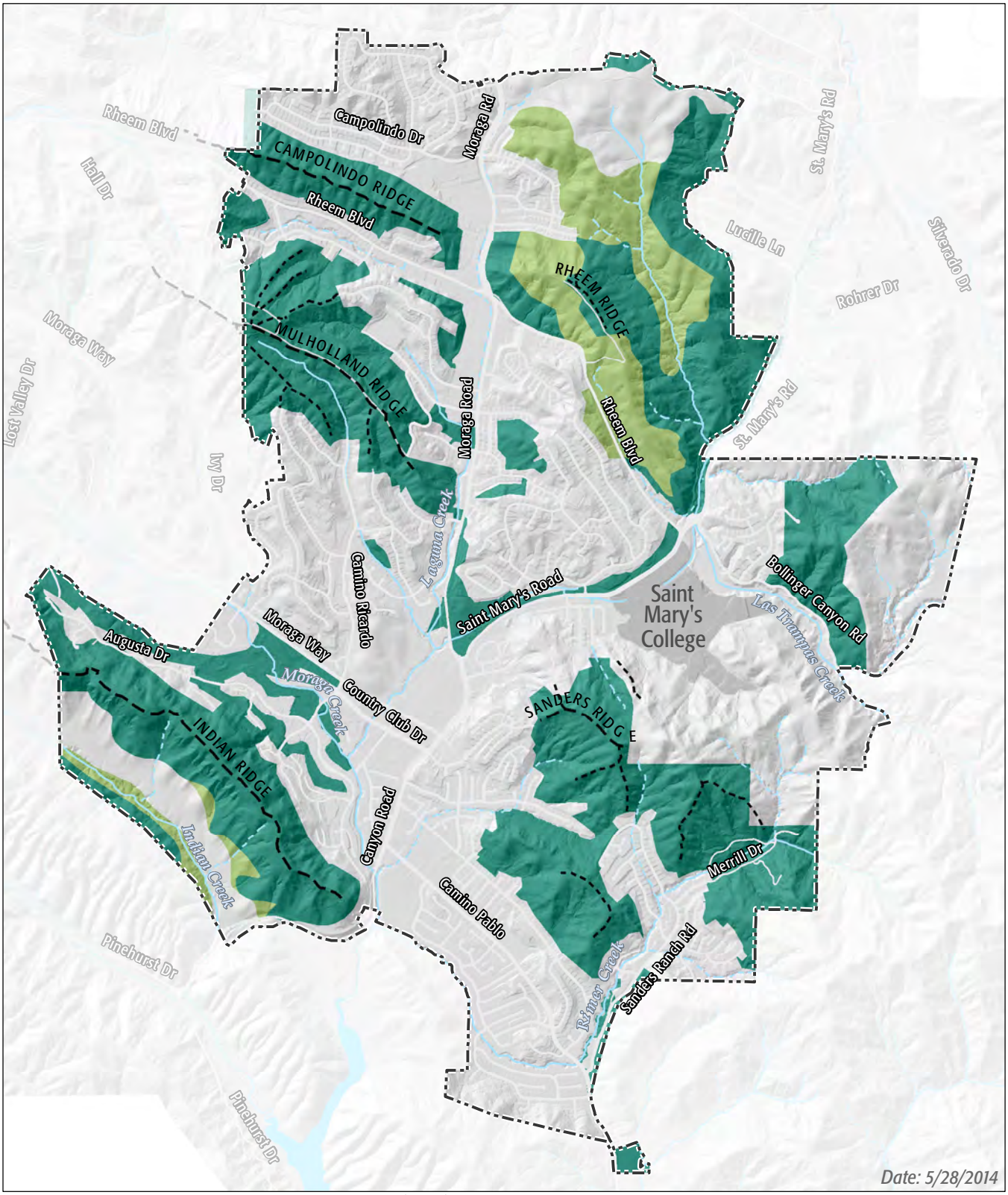
2. What land uses are allowed in open space areas?

Source: Zoning Ordinance Chapter 8.52 (MOSO and Non-MOSO Open Space Districts)

"Land use" means the type of activity on a property, or the function served by structures on a property. The following land uses are allowed in both MOSO and Non-MOSO Open Space zoning districts:

- Agriculture
- Single-family homes
- Parks and recreational facilities
- Schools

Agriculture is a "permitted land use," meaning it is allowed without Town approval. Single-family homes, parks and recreational facilities, and schools all require a Conditional Use Permit, which is a discretionary approval to which the Town may attach special conditions.



Data Sources: Town of Moraga, 2013; Contra Costa County, 2013; USGS, 2013; PlaceWorks, 2014.

MOSO Major Ridgelines
MOSO Minor Ridgelines
Major/Permanent Stream
Minor/Intermittent Stream
Town Boundary

Open Space Lands
MOSO Open Space Land
Non-MOSO Open Space Land

0 0.5 1 Miles

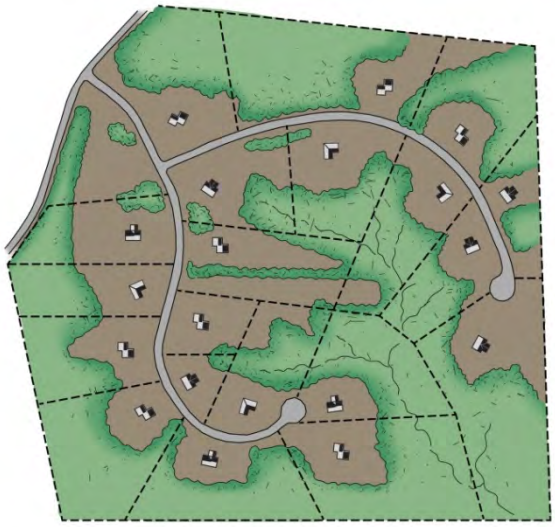
MAP 2
OPEN SPACE LANDS

3. What is residential density, and how much density is permitted in Open Space areas?

"Residential density" is the number of homes on a development site divided by the area of the development site. Residential density is typically expressed as dwelling units per acre. "Gross density" and "net density" are two different ways of calculating the density of a given area or development. Gross density is the number of units in a given place, divided by the full spatial area of that place, including features like roads or bodies of water, where it is not possible to build structures. Net density is the number of units in a given place, divided by the area of that place *minus* any areas where it would not be possible to build structures.

Diagram 1 shows an example of a property with a residential density of 1 unit per 5 acres. Density is calculated by dividing the property area (100 acres) by the number of homes on the property (20).

DIAGRAM 1: RESIDENTIAL DENSITY



Property area = 100 acres
Number of homes = 20
Density = 1 unit per 5 acres

The maximum density in MOSO Open Space is 1 unit per 20 acres. The Town may approve an increase in density to not more than one unit per 5 acres, subject to certain conditions. The maximum density in "high risk areas" in MOSO Open Space is always 1 unit per 20 acres. (See Question D.)

Sources: MOSO Guidelines Section III.C (Increase in Density in Open Space Land)

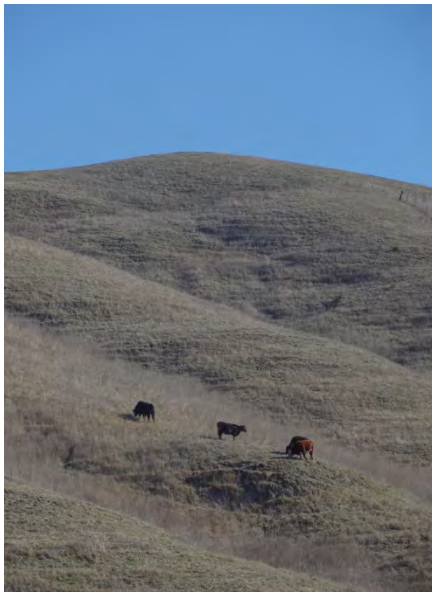
Zoning Ordinance Section 8.52.060 (Open Space Density)

The Town considers the following criteria when approving such increased density:

- Suitability of the site for increased density.
- Potential environmental and public health impacts.
- Distance from high risk areas and ridgelines.
- Visibility of development, including effect on views of ridgelines from scenic corridors.
- Provision of open space, park, and recreational facilities for the public.

In non-MOSO Open Space, the maximum density is determined by the Town on a case-by-case basis. Permitted density must be based on the property's physical constraints and factors listed above, and must comply with the General Plan.

Non-MOSO open space near Rheem Boulevard



MOSO open space near Sanders Ridge

Vineyards in open space
Photo by Andrew MacFarlane. Used under a Creative Commons License.

Example of a single-family home surrounded by undeveloped land.

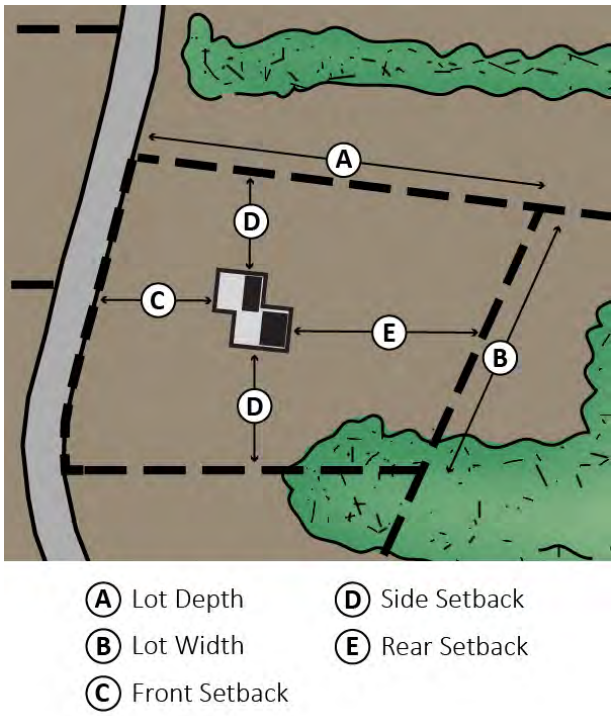
4. What other development standards apply to residential development in Open Space areas?

Sources: Zoning Ordinance Chapter 8.52 (MOSO and Non-MOSO Open Space Districts)

Zoning Ordinance Chapter 8.48 (Planned Development District)

"Development standards" refers to the Town's rules relating to lot size, building size, building height, and setbacks (distance from property lines). Diagram 2 illustrates some of these development standards.

DIAGRAM 2: ILLUSTRATION OF LOT DEVELOPMENT STANDARDS



Within MOSO Open Space, development standards vary depending on the size of the property. For properties less than 10 acres, the Town may set development standards for projects on a case-by-case basis, or may require such a property to be designated Planned Development. At a minimum, these standards need to be consistent with the requirements of MOSO.

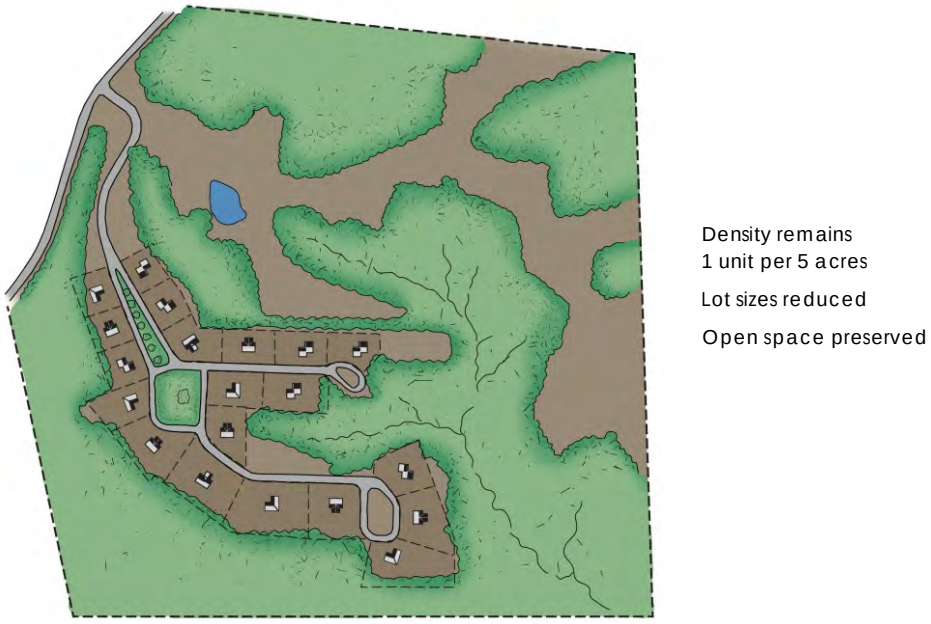
Development of property of 10 acres or more, or subdivisions of five or more lots in MOSO Open Space must follow the rules of the Planned Development district. The Planned Development district lists a series of land use classifications that assign potential maximum density (e.g. 1-PD [1 Dwelling Unit per Acre-Planned Development], 3-PD [3 Dwelling Units per Acre-Planned Development], etc.). Depending on the type of Planned Development district and density, the minimum lot size ranges from 10,000 square feet, to 20 acres or more. Minimum lot width, lot depth, and building setbacks are the same as stated in Zoning Ordinance Chapter 8.28 (Two and Three Dwelling Units per Acre Residential Districts).

The Planning Commission may allow deviation from these standards if doing so would:

- "Encourage a desirable environment, protect and maintain property values and foster and maintain the health, safety and general welfare of the of the town,"
- Be consistent with the General Plan, and
- Allow "remaining land holdings to be developed primarily as conventional detached single-family subdivisions."

The Planned Development standards allow for some limited clustering of units on smaller lots.[1] Clustering means that homes are placed closer to each other on a property, while permanently protecting remaining open space. Even though homes are closer to each other, the overall density in a clustered project remains the same as in a standard subdivision design. Clustering can help reduce the spatial extent of a development's environmental impacts. Depending on where the clustered development is located and how it is designed, clustering can also sometimes help reduce the visual impact of a development. Diagram 3 illustrates the concept of clustered development.

DIAGRAM 3: CLUSTERED DEVELOPMENT



In non-MOSO Open Space, development standards for projects are set by the Town on a case-by-case basis. The Town's regulations state that the standards "shall be based upon site constraints." It should be noted that the Planned Development requirements also apply to development of large parcels of over 10 acres, anywhere in Moraga, whether designated MOSO or not.

[1] 8.48.040.C.1.

B. RIDGELINES

1. What is a "ridgeline" in Moraga, and where are they located?

Sources: MOSO Guidelines Section II.A

General Plan, page D-4

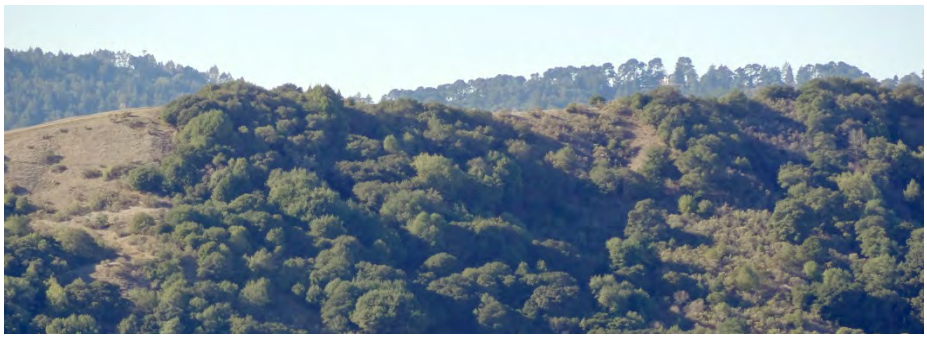
While the word "ridgeline" has a broad general meaning to describe a type of geographic feature, Moraga's regulations define, identify, and regulate specific ridgeline features in a particular way.

The MOSO Guidelines define a ridge as the "upper portion of a hill which rises to a crest or ridgeline," and "ridgeline" as the "centerline or crest of a ridge."

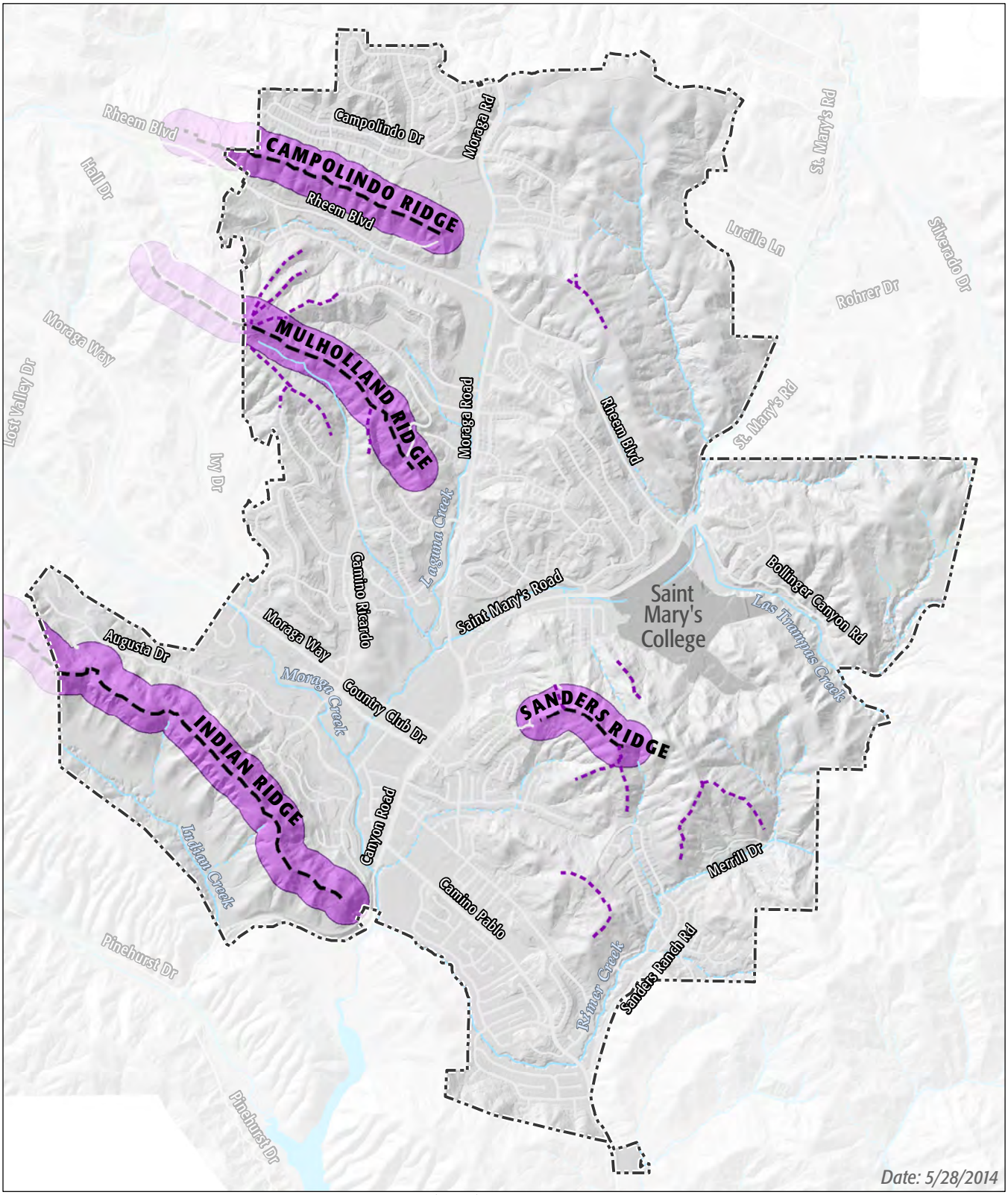
Moraga's regulations, including the General Plan, MOSO Guidelines, and Zoning Ordinance, define two types of ridgelines: "major ridgelines" and "minor ridgelines." Indian Ridge, Sanders Ridge, Mulholland Ridge, and Campolindo Ridge are specifically named as major ridgelines. A minor ridgeline is defined in the MOSO Guidelines and in the General Plan Definitions as any ridgeline, other than a named major ridgeline, that is 800 feet above sea level and is within an area designated as MOSO Open Space by the General Plan.

Map 3 shows the location of major and minor ridgelines in Moraga, based on these definitions, and illustrates the areas on or near ridgelines where development is prohibited. (See Question 2.)

Questions have arisen whether General Plan Policy OS1.5, which addresses ridgeline protection, properly reflects the intent of the MOSO Ordinance. The primary question is whether *all* ridgelines in Moraga should be protected, or whether such protections are reserved for major and minor ridgelines, as defined above, within MOSO Open Space. The definition of "ridgeline" used for the General Plan policies and MOSO regulations is therefore very important.



View west toward Indian Ridge



Data Sources: Town of Moraga, 2013; Contra Costa County, 2013; USGS, 2006, 2013; PlaceWorks, 2014.

MOSO Major Ridgelines
MOSO Minor Ridgelines
Major/Permanent Stream
Minor/Intermittent Stream
Town Boundary
500 ft Buffer of Major Ridgelines

MAP 3
DEVELOPMENT: MOSO RIDGELINES

0 0.5 1 Miles

2. Is development allowed on or near ridgelines?

Development is prohibited within 500 feet of the centerline of a major ridge and on the crests of minor ridgelines. (See Map 2.) Development is also prohibited on minor ridgelines immediately adjacent to and extending into MOSO Open Space if slopes exceed 20 percent and the elevation is greater than 800 feet above sea level. Chapter 8.128 of the Moraga Municipal Code also prohibits development within 500 feet of the centerline of a major ridgeline in areas designated as "private open space" or "public open space – study" by the General Plan. Throughout Moraga, including other ridgeline areas, all major development is subject to design review.

Sources: General Plan, pp. 7-2 & D-4
MOSO Section 3(e)(a)
Zoning Ordinance Section 8.128.020

Development in Rheem Valley Manor

Protecting Ridgelines. General Plan Policy CD1.5 says "protect ridgelines from development." This policy, and the related definitions of ridgeline, has been subject to debate. Some feel that the definition of ridgelines, and corresponding protection provided by the General Plan and MOSO Guidelines is inconsistent with that in the MOSO Initiative, which does not appear to explicitly limit ridgeline protection to only ridgelines included in MOSO areas. Others believe MOSO and the General Plan clearly define Moraga ridgelines. The definition of "protect" is also debated—whether referring to the nature and extent of the physical disturbance of ridgelines, effects of adjacent development on views of ridgelines, or other effects.

- Does General Plan Policy CD1.5 apply to all ridgelines in Moraga, including those outside MOSO and Non-MOSO Open Space, or only Major and Minor Ridgelines on MOSO and adjacent lands?
- What exactly does "protect" mean in the context of ridgeline development?

C. STEEP-SLOPE AREAS

1. Is development allowed in steep-slope areas?

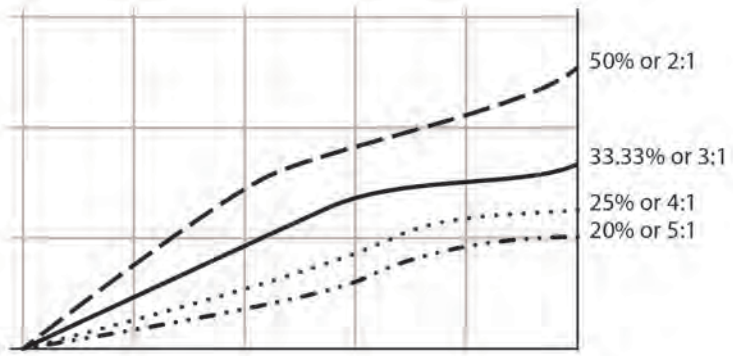
Sources: MOSO Initiative Section 3(b)(1)

General Plan Policy LU-1.8

Within MOSO Open Space, development is prohibited on development sites with an average slope of 20 percent or greater. As described elsewhere in this chapter, various other regulations, including the Grading Ordinance (Title 14), MOSO Initiative, and MOSO Guidelines, also address development on steep slopes within and outside of MOSO land, including land at and above 20 and 25 percent grades.

Gradients may be expressed as a ratio of horizontal run to vertical rise. For example, if over a horizontal distance of 100 feet, elevation increases by 50 feet, this would be a 100:50 or 2:1 slope. Dividing the vertical rise by the horizontal run and multiplying by 100 yields the percent gradient (or slope).

Such calculations only determine the overall gradient between two points. For an explanation of average slope calculations over larger areas, see Diagram 4, below.



Because of the way overall slope is calculated—based on the average—a given sub-area of a buildable site may have areas with slopes greater than 20 or 25 percent. If slope is calculated for an area that is very small, minute natural or human-made features, such as large rocks or an isolated escarpment can result small areas of apparently steep slope within a larger site that, on average, is much less steep.

Per General Plan Policy LU1.8, outside of MOSO land, the following restrictions apply to development on land with steep slopes, where "development" is defined in the General Plan to include virtually all types of construction, earthmoving, and change in intensity of land use (also see Question 6):

- Development must be "avoided" on slopes of 20 percent or greater and is permitted only if supported by site-specific analysis
- New homes are prohibited in a development area with an after-graded average slope of 25 percent or greater. (This restriction does not apply to lots legally created after March 1, 1951 or approved by the Town Council after April 15, 2002)
- Grading on land with an average predevelopment slope of 25 percent or more within a development area is prohibited without special Town Council approval.

Steep-Slope Portions of Development Sites. MOSO Initiative Section 3(b)(1) and General Plan Policy LU-1.8 discourage, prohibit development, or require special approval of "development" on slopes greater than 20 or 25 percent.

- Can homes be built on a portion of a site with a slope of greater than 20 percent if the average slope of the site is less than 20 percent?
- Can homes be built on a portion of a site with less than 20 percent slope, if the average slope of the entire site is greater than 20 percent?

2. How is "average slope" calculated?

Sources: Moraga Municipal Code Section 8.136.020

MOSO Guidelines Section II.A.3

Per Zoning Ordinance Chapter 8.136, average slope is calculated using the following formula:

$$S = (100*I* L)/a$$

S = average percent slope

I = contour interval in feet

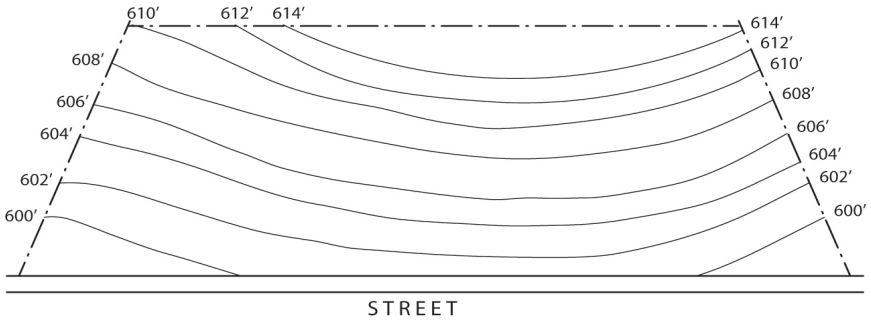
L = summation of length of all contours in cell[2]

A = area in acres of cell

a = area in square feet of cell

Diagram 4 shows an example of average slope calculations for a development site. In this example the contour interval is 2 feet, the sum of length of all contours in the areas shown is 838 feet, and the cell area is 6,200 feet. Using these numbers in the formula above, the average percent slope of the area is 27 percent.

DIAGRAM 4: EXAMPLE SLOPE CALCULATION



$$S = \frac{I \times L}{A}(100) = \frac{2 \times 838}{6{,}200}(100) = 27\%$$

I = 2 ft.

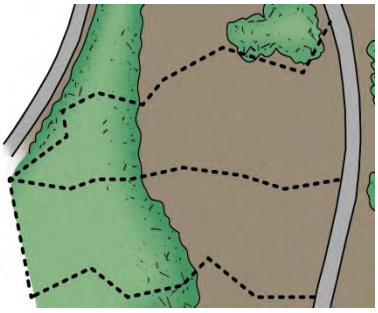
L = 838 ft.

A = 6,200 sq.ft.

Within MOSO Open Space, average slope is calculated for a more specifically defined area known as a "cell." A cell is "any polygonal area of at least 10,000 square feet."[3] A development project applicant may define the boundaries of a cell in order to calculate the average slope of a development site. Outside of MOSO, although the formula specified describes a calculation for an entire parcel, the Town typically requires average slope to be calculated for the area of development or site disturbance, which is felt to more accurately address the intent of the regulations to control development on steep slopes.

[2] The use of "cells" is only included in the MOSO Guidelines. Chapter 8.136 of the Municipal Code uses "parcel being considered."

[3] MOSO Guidelines, Section II.A.3.



Cell Shape / Slope Calculations. Moraga Municipal Code §8.136.020 and MOSO Guidelines §II.A.3 guide slope calculations. Project applicants may define a cell as any polygonal shape provided it has an area of at least 10,000 square feet. Some people believe "contorted" or highly irregular cell shapes and/or cells with areas far larger than the expected area of disturbance or development may allow applicants to circumvent slope development restrictions in MOSO lands by drawing the polygon to capture all areas of less steep grades, regardless of whether the shape constitutes a logical building site or sites.

- Do the rules for calculating the slope of a site or "cell" need to be modified to better reflect the intent of Moraga's hillside regulations?
- How could the Town use improved data, or more explicit guidelines to address this question?

D. HIGH RISK AREAS

1. What are "high risk" areas?

Sources: MOSO Section 3.a
MOSO Guidelines

High risk areas are areas in MOSO Open Space where development potential may be limited due to the physical characteristics of the site that may create hazards, such as steep slopes, unstable soils, limited access, or poor drainage. Residential development is allowed in high risk areas provided the residential density does not exceed 1 unit per 20 acres.

The high risk area concept does not apply outside of MOSO Open Space.

2. Where are high risk areas and how was this determined?

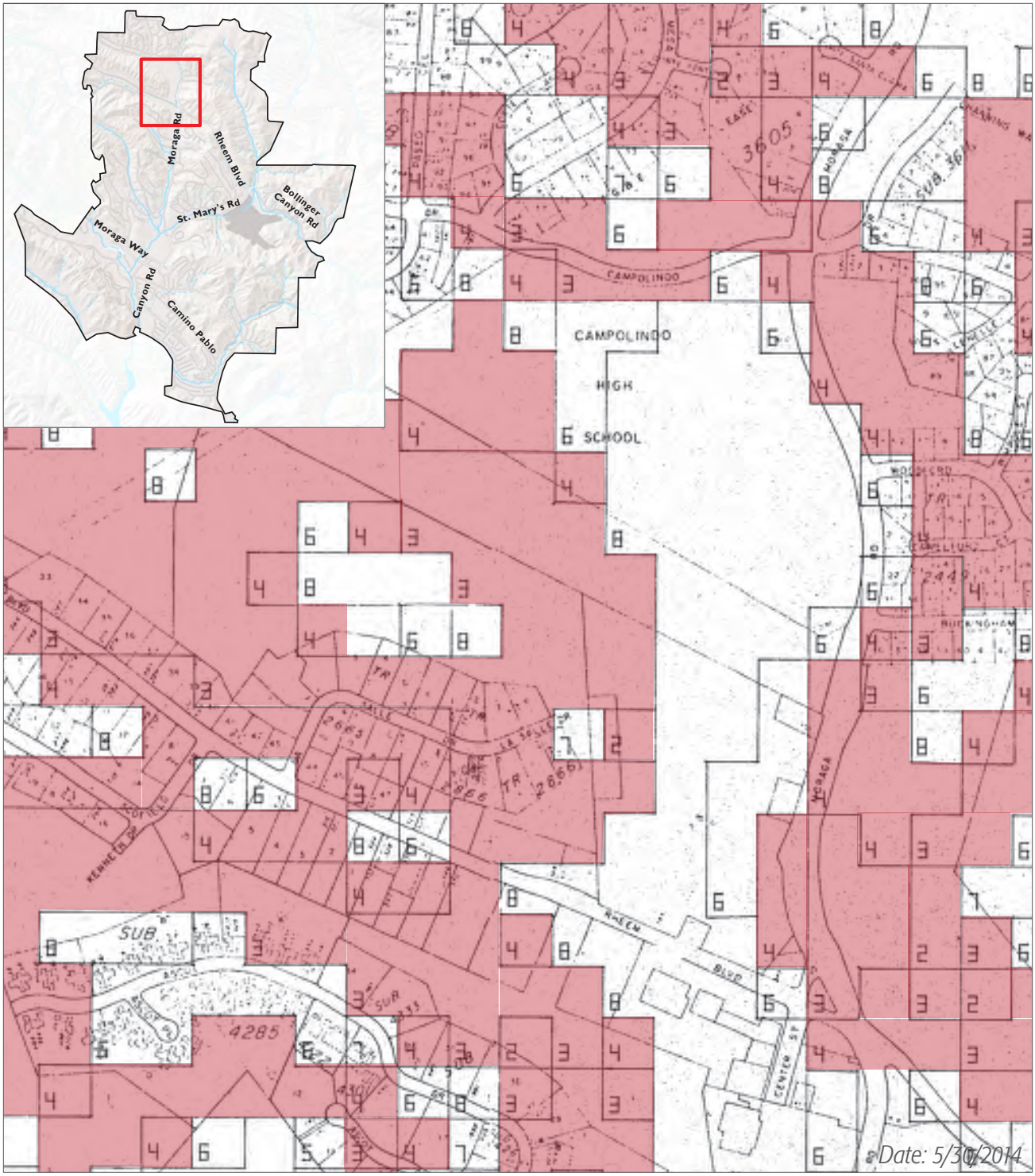
The process that was used to create the 1989 High Risk Areas Map was an early example of advanced Geographic Information System (GIS) techniques.

Source: Spatial Geologic Hazard Analysis in Practice, David Rogers, Member, ASCE

MOSO Guidelines Exhibit D (Development Capability Map) establishes a preliminary determination of high-risk areas in Moraga. The map was developed and adopted in 1989, to implement provisions of the MOSO Ordinance that call for the Town Council to identify and limit development densities on high risk lands. This map, which is based on data available at that time, divides Moraga into a grid of 200 by 200 feet squares, and assigns each square a numerical value between 0 and 9. A value of 0 means the square has the least development capability (i.e. is most constrained), and 9 means the square has most development capability (i.e. is least constrained). Per the MOSO Guidelines, Squares designated 1, 2, 3, or 4 are determined, on a preliminary basis, to be high-risk.

Development capability within squares was assigned based on six physical attributes: ridgelines, landslide susceptibility, slope, flood hazard, vegetation, and soil erosion. The MOSO Guidelines state that this capability determination is preliminary and governs until more accurate data are approved by the Town.

Map 4 shows the Development Capability Map zoomed into an area near the Moraga Road and Rheem Boulevard intersection. Squares with a high risk preliminary determination are colored red.



Source: Comarc Design Systems; PlaceWorks, 2014.

High Risk Area

Map 4
MORAGA DEVELOPMENT CAPACITY MAP

3. Can the status of a high risk area change?

A property owner can request the reclassification of a designated high risk area. The Planning Commission makes decisions, upon request, at a noticed public hearing. Based on information provided by the property owner, the Planning Commission considers the following conditions when deciding on the requested reclassification:

- Evidence of geologic hazards on the site, including landslides, unstable soil, slippage, and erosion.
- Susceptibility to seismic hazards, including landslides, liquefaction, and flooding.
- Presence of natural drainage ways on the site.
- Proximity to an earthquake fault trace.
- Proximity to a body of water of 1 acre or more.

4. Can geologic hazard remediation be used to change the status of a high risk area?

Source: MOSO Guidelines Section D.2

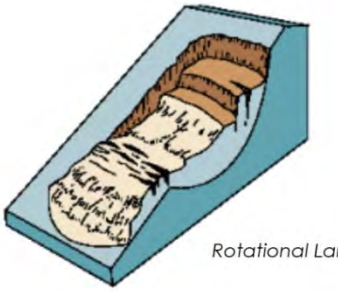
Engineered changes to a hillside site to reduce exposure to geologic hazards are referred to as "remediation" or "abatement." Such efforts frequently include extensive earthmoving to excavate landslides and install engineering structures, such as keyways, to stabilize these areas, before earth is replaced and re-contoured to original or modified grades.

MOSO Guidelines state that the Town may change the status of a high risk area if the characteristics making it high risk are "abated by appropriate remedial efforts which are consistent with [the California Environmental Quality Act (CEQA)], the Town's Environmental Guidelines, and the Goals and Policies of the General Plan." This statement is silent on whether this abatement may occur as part of a development project that would be prohibited without the abatement. The Town has historically interpreted this statement to mean that remediation within a high-risk area is permitted to increase the permitted density to greater than 1 unit per 20 acres.

Remediation in High Risk Areas.
MOSO Guidelines Section D.2 addresses High Risk Areas and allows for remediation and reclassification of such areas. There is disagreement as to the purposes for which remediation and reclassification are allowed. Some believe the remediation should only be to remove hazards that threaten public health and safety (e.g. stabilization of a landslide that threatens existing homes or a road). Some feel that if geologic hazards are removed, densities on that portion of a site should be allowed to increase. Others suggest that, because remediation is costly, allowing more development to occur on remediated lands is necessary to pay for and achieve broader public benefits from reducing these types of hazards. (One such example is the Rancho Laguna project, which is remediating a significant landslide area that affects Rheem Boulevard, and includes increased density on remediated portions of the site).

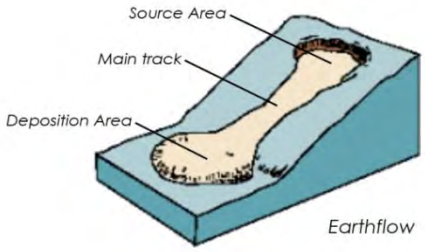
- Can geologic hazards in "high risk" areas be remediated as part of a development project to allow densities greater than 1 unit per 20 acres?
- Should remediation within MOSO areas only be allowed when it would address an existing threat to public health and safety?

DIAGRAM 5: TYPES OF LANDSLIDES COMMON IN MORAGA



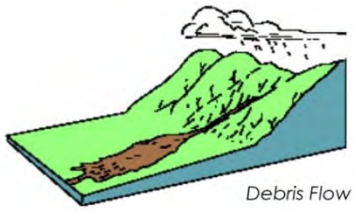
Rotational Landslide

In a **rotational landslide**, the boundary between the area of the slide and the underlying bedrock or soil is curved, so as the top of the landslide slips downward, material toward the bottom is thrust upward and outward before continuing downhill.



Earthflow

Earthflows have a characteristic "hourglass" shape. This shape is created when the source area of the flow destabilizes and "drains" into a narrower track, before spreading out again upon reaching flatter terrain.



Debris Flow

Debris flows are typically caused by intense flow of water across the surface of steep slope areas. Loose soil, rock, organic matter, air, and water combine into a slurry that moves powerfully and rapidly downhill, and then spreads out and slows down upon reaching flatter terrain.

Source: USGS

As part of the Moraga Hillsides and Ridgelines Project, new landslide maps will be prepared for the town of Moraga.

Some landslides in Moraga may be good candidates for remediation, either as part of a development or as a stand-alone project. Remediation means repairing or otherwise modifying a hillside or adjacent area to prevent landslides. Such remediation may be necessary to protect existing or future residents and structures. The list below describes a few key techniques, which may be used either separately or in combination to remediate landslides:

- Mass Grading: All debris from the landslide is removed and replaced with engineered fill that is notched into underlying bedrock. This approach requires drainage systems and may cause significant environmental disturbance.
- Stitch Piers: Landslide debris is pinned in place with steel-reinforced concrete piers placed into the landslide debris and the underlying bedrock. Although, numerous piers may be necessary at a variety of elevations, they are usually hidden under the surface.
- Buttress: Engineered fill is placed at the toe (bottom) or the landslide to prevent the landslide mass from advancing downhill. This approach usually also requires improvements to surface and underground drainage.

High Risk Area with steep slope and erosion

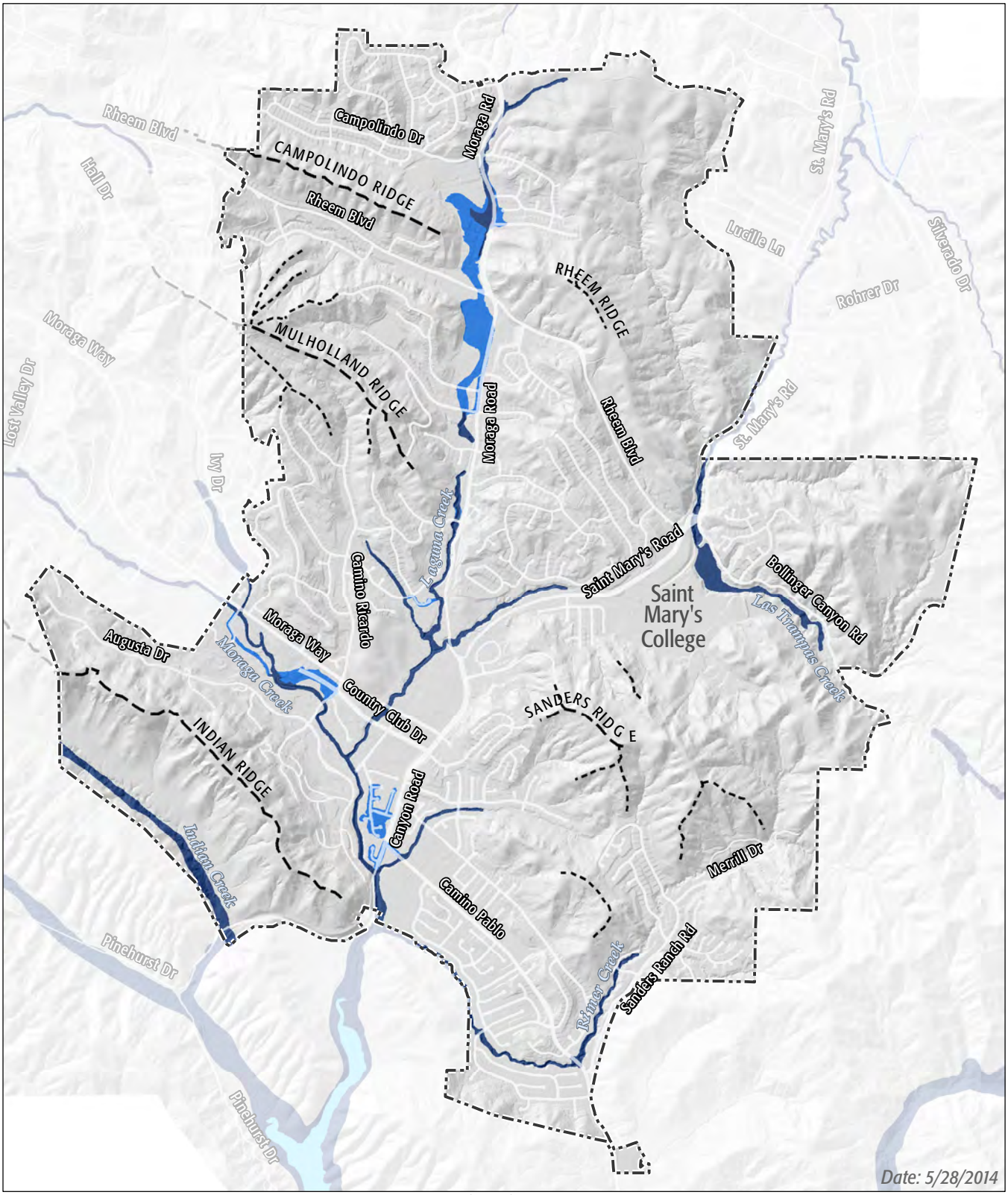
Example of slope remediation along Moraga Way in Orinda (Google Streetview)

5. Are landslides the only hazards in hillside areas? How can we know where the most hazardous areas are located

Landslides are the major hazard in hillside areas, though other hazards such as flooding and wildfire exist. Maps 5, 6, and 7 show flooding, wildfire, and liquefaction hazards in Moraga based on data available from State and federal sources, including FEMA, CalFire, and the United States Geological Survey.

The 1989 "Development Capability" map represents the most recent effort to map and identify natural hazards in Moraga. The available data, technology, and methods to map landslides and other hazards have vastly improved in the past 25 years, through Geographic Information Systems (GIS), increased computer power, and more advanced remote sensing techniques. The Town, as part of the Hillsides and Ridgelines project, is working to develop updated mapping of landslides and other soil instability issues to help inform the community about the nature and location of these hazard areas in Moraga.

The purpose of each of these maps and the updated landslide maps is to provide more up to date information on landslides and other hazards in Moraga. As the project moves forward, this information will help determine what updates, if any, are necessary for Town regulations or other decision making-taking tools used for individual projects.



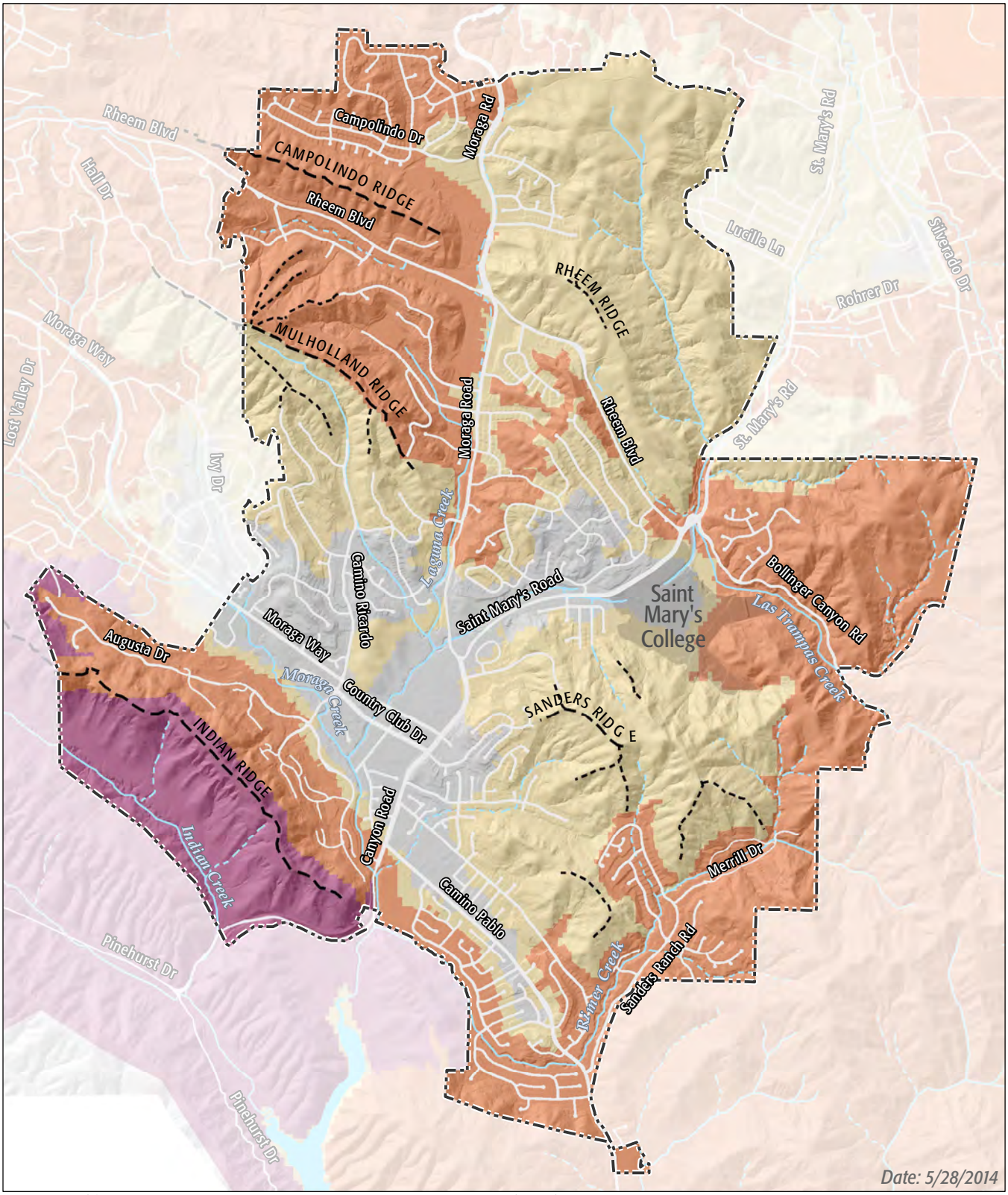
Data Sources: FEMA, 2009; Town of Moraga, 2013; Contra Costa County, 2013; USGS, 2013; PlaceWorks, 2014.

MOSO Major Ridgelines
MOSO Minor Ridgelines
Town Boundary

FEMA Flood Zones
100-year Flood Zone (1% annual probability)
500-Year Flood Zone (0.2% annual probability)

MAP 5
FEMA FLOOD ZONES

0 0.5 1 Miles



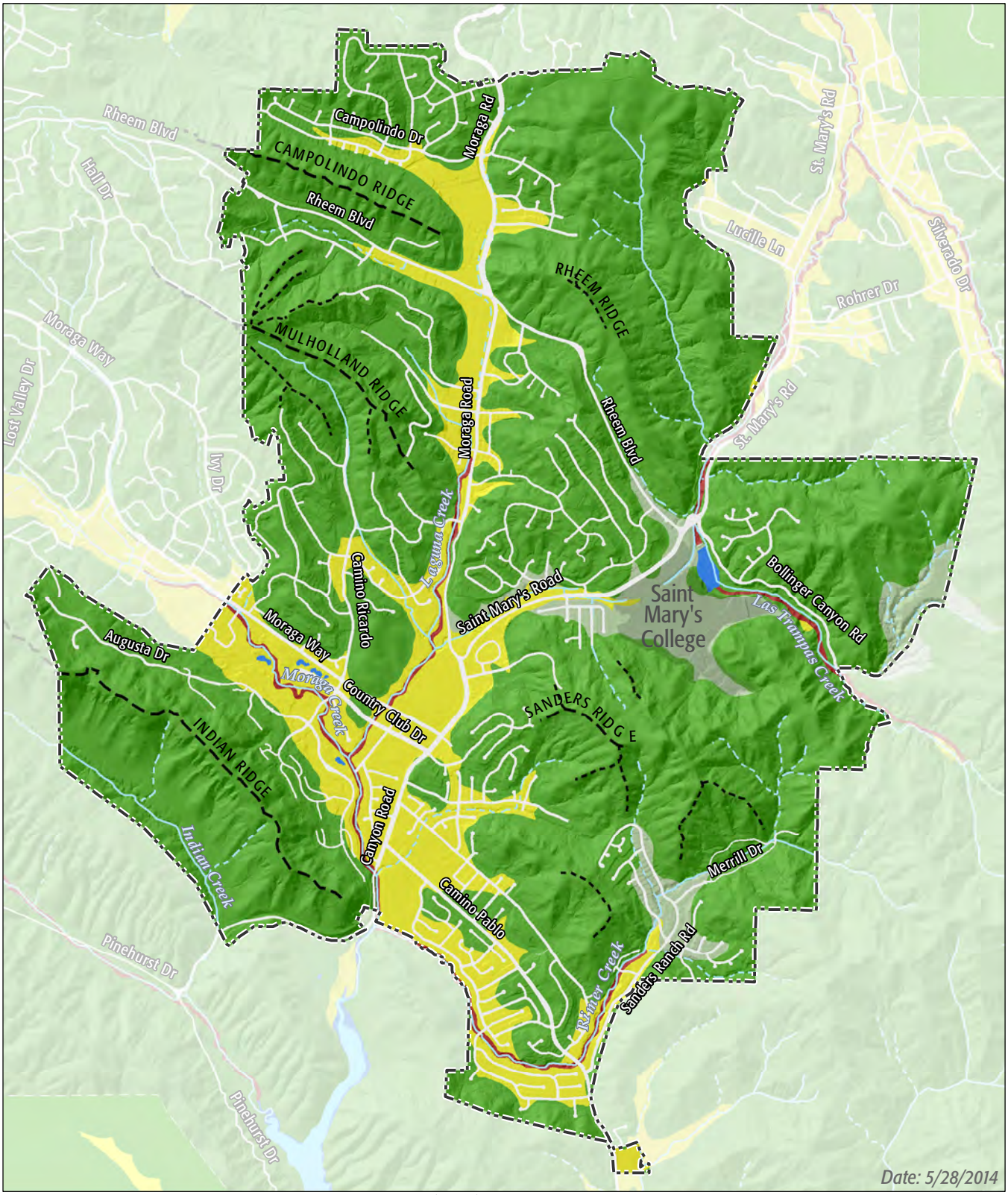
Data Sources: CalFire, 2007 & 2009; Town of Moraga, 2013; Contra Costa County, 2013; USGS, 2013; PlaceWorks, 2014.

MOSO Major Ridgelines
MOSO Minor Ridgelines
Major/Permanent Stream
Minor/Intermittent Stream
Town Boundary

CalFire Fire Hazard Severity Zones
Very High
High
Moderate
Urban Unzoned

MAP 6
WILDFIRE HAZARD AREAS

0 0.5 1 Miles



Data Sources: Town of Moraga, 2013; Contra Costa County, 2013; USGS, 2006, 2013; PlaceWorks, 2014.

MOSO Major Ridgelines
MOSO Minor Ridgelines
Major/Permanent Stream
Minor/Intermittent Stream
Town Boundary

USGS Liquefaction Susceptibility
Very High
High
Moderate
Low
Very Low
Water

0 0.5 1 Miles

MAP 7
LIQUEFACTION SUSCEPTIBILITY

6. What is the definition of "development?"

Moraga's hillside and ridgeline regulations apply to proposed "development," so the definition of this term is important. The Town defines development broadly to include most construction and grading activities. Moraga's General Plan defines development as follows:

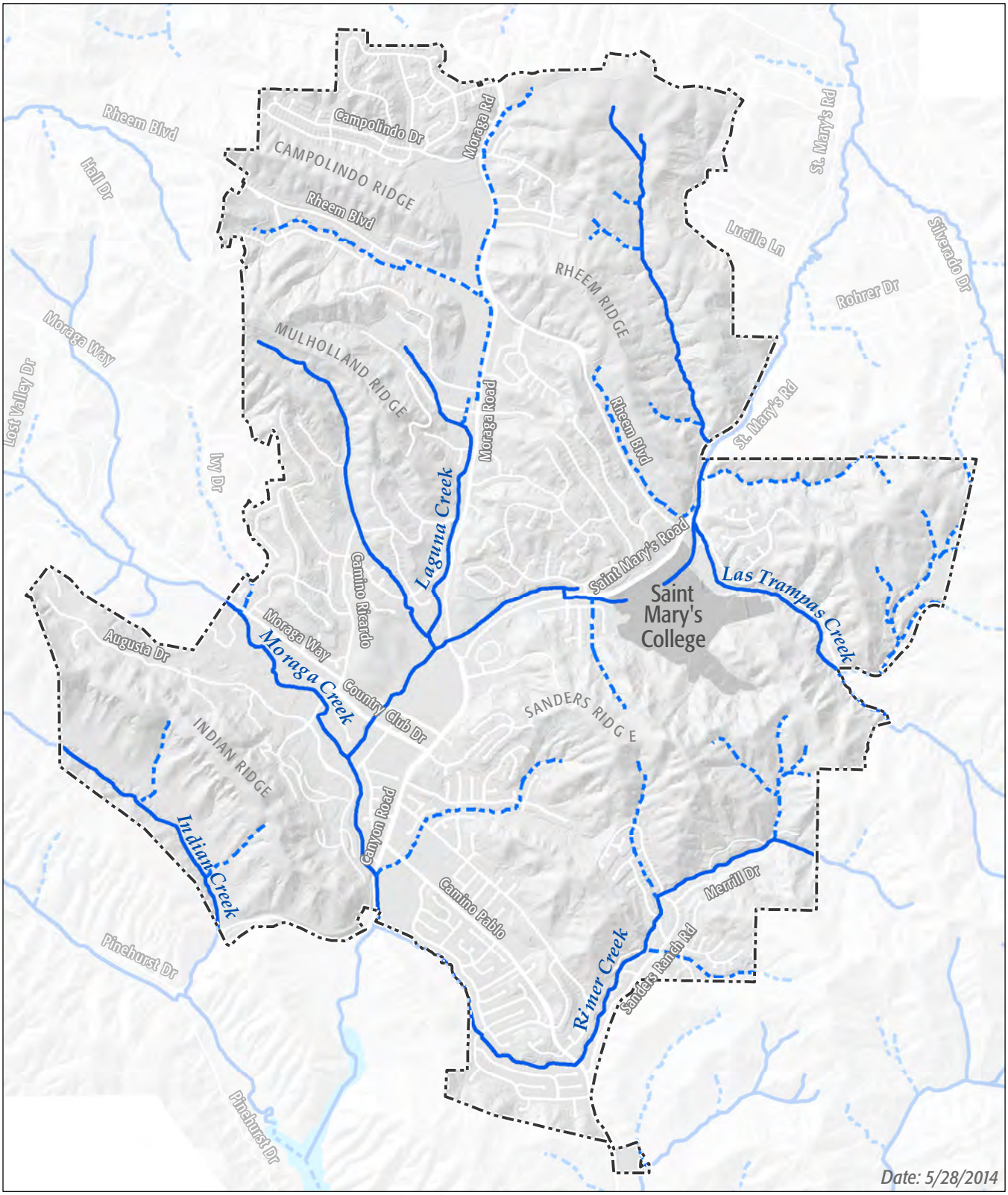
> Development means the placement, discharge or disposal of any material, the grading or removing of any material, the change in the density or intensity of use of land, the subdivision of land, or the construction or erection of a structure. Development does not include:
>
> 1. Work necessary to eliminate or prevent a condition which is determined by the Town to be a menace to life, limb or property or adversely affects the safety, use or stability of a public way or drainage way or channel;
> 2. Establishment of a fire trail approved by the Moraga-Orinda Fire Protection District; or
> 3. A road together with attendant underground utilities may cross a ridge, if the Planning Commission finds that the crossing is necessary for the orderly development of the Town and does not conflict with the Municipal Code.

E. NATURAL RESOURCES

1. What kinds of wildlife, habitat, and other natural resources are in hillside areas?

Map 8 shows major and minor streams in Moraga. Major creeks are Indian Creek, Moraga Creek, Laguna Creek, Las Trampas Creek, and Rimer Creek. Creeks and riparian corridors are often located outside of hillside areas as they are generally at lower elevations. However, some portions of creeks, their tributaries, and associated vegetation and riparian habitat are located in MOSO and Non-MOSO Open Space.

Mulholland Ridge contains potential wildlife habitat including native trees and grassland



Data Sources:Town of Moraga, 2013; Contra Costa County, 2013; USGS, 2013; PlaceWorks, 2014.

Town Boundary
Major/Permanent Stream
Minor/Intermittent Stream

MAP 8
MAJOR HYDROLOGY AND DRAINAGE PATTERNS

0 0.5 1 Miles

2. Must new development protect these natural resources?

Source: General Plan Policies OS2.1, OS2.2, OS2.3, OS2.4, OS2.5, OS2.8, OS2.9

Moraga's General Plan calls for the Town to protect wildlife areas and creeks, streams, and other waterways. General Plan policies also direct the Town to connect open space areas to provide wildlife corridors and to preserve tree-covered areas. In the context of natural resources, protection means maintaining those resources in an unadulterated (or restored) state, especially by disallowing urbanized land uses or other development.

To approve a proposed hillside development project, the Town must find the project consistent with these General Plan policies. The Town also must identify potential environmental impacts from a proposed project as required by CEQA. CEQA, in turn, includes various criteria or "thresholds" for determining if an impact is significant, and places particular emphasis on the protection of certain types of natural resources, such as special-status wildlife species. Impacts can be either direct or indirect. For example, disturbing a wetland area during development would be a direct impact; alternatively, if a development resulted in changed drainage patterns such that a downstream wetland dried out, this would be an indirect impact. Although completely avoiding natural resources is one way to protect them, CEQA also encourages impacts to be "mitigated" or lessened through specific measures. There is often disagreement about what resources are evaluated, what level of impact determined is "significant," and whether required measures are sufficient or appropriate to properly mitigate impacts to a "less-than-significant" level. These types of concerns frequently reflect those expressed about whether or how new development is adequately "protecting" natural resources.

F. SCENIC CORRIDORS

1. What is a scenic corridor?

Source: General Plan Policies LU 1.9, LU-1.12, CD-1.3, and CD3.1 through CD-3.7

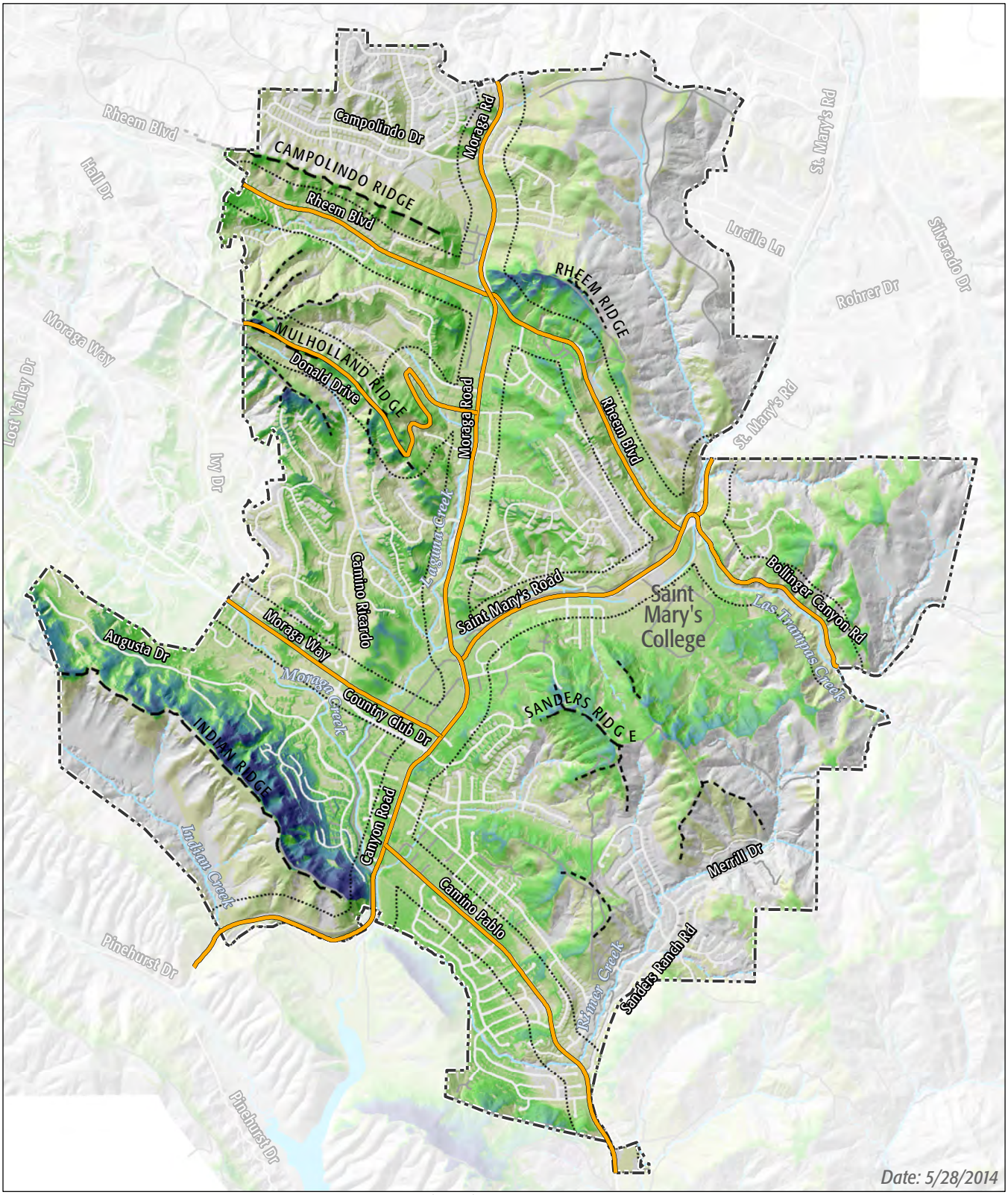
Scenic corridors are roadways with a visual character important to Moraga's identity and semi-rural feel.

Moraga's General Plan identifies the following roadways as scenic corridors:

- St. Mary's Road
- Canyon Road
- Moraga Way
- Moraga Road
- Rheem Boulevard
- Camino Pablo
- Bollinger Canyon Road
- Donald Drive (along ridgeline of Mulholland Hill)[4]

Map 9 shows the location of these scenic corridors.

[4] This corridor is listed in the Zoning Ordinance, but not in the General Plan



Data Sources:Town of Moraga, 2013; Contra Costa County, 2013; USGS, 2006, 2013; PlaceWorks, 2014.

MAP 9

SCENIC CORRIDORS AND HILLSIDE VISIBILITY

Visibility determined using view-points every 200 feet along Town-designated scenic corridors.

- Town Boundary
- MOSO Minor Ridgelines
- MOSO Major Ridgelines
- Major/Permanent Stream
- Minor/Intermittent Stream

Relative Visibility
- High Visibility
- Low Visibility

- Town-designated Scenic Corridors
- 500-foot Buffer of Scenic Corridors

0 0.5 1 Miles

2. Do any special rules apply to development adjacent to a scenic corridor?

Sources: General Plan Policy CD3.1. Zoning Code Section 8.132 (Scenic Corridors)

Yes – the Town must approve the design of all visible permanent structures within 500 feet of a scenic corridor. To approve the proposed structure, the Town must determine that the proposal complies with a series of design guidelines. These design guidelines address the structure's distance from the roadway, preservation of existing site features, structure size, quality of materials, screening of equipment, lighting, grading, vehicle access, parking, landscaping, and tree preservation. The Zoning Code's guidelines for scenic corridors generally emphasize the natural environment, terrain, and vegetation, and maintenance of natural over human-made features, as well as compatibility with surrounding areas and neighborhoods.

The Design Review Board reviews proposed structures and other features (such as signs) constructed on sites of less than 10 acres. Proposed structures on sites of 10 acres or more are reviewed by the Planning Commission and Design Review Board as part of a Planned Development application. (See Question I.)

3. What about hillside areas visible from scenic corridors?

Sources: General Plan Policy CD1.3, CD1.4

Moraga's General Plan directs the Town to pay particular attention to protecting viewsheds along the Town's scenic corridors. General Plan policies also state that the Town shall preserve near and distant views of the natural landscape from valley areas.

Map 9 illustrates which areas in Moraga are potentially most visible or prominent from scenic corridors. The map is based solely on elevation, does not account for vegetation or other visual barriers, and does not describe the visual quality or character of these hillsides. Visibility was determined using computer software that calculated visibility of hillside areas every 200 feet along the scenic corridors. Map 9 was created for the Hillsides and Ridgelines project, and the Town has not previously used such analysis to evaluate proposed projects. Appendix A provides additional technical background on this map and the other maps featured in this report.

To approve a proposed hillside project, the Town must find the project consistent with the General Plan, including viewshed protection policies. However, the Town's Design Guidelines and Zoning Regulations do not currently specify criteria or standards for protecting viewsheds in the same manner as they do for areas within the 500-foot scenic corridor buffer.

Viewshed Protection. General Plan Policy CD1.3 directs the Town to protect viewsheds along Town's scenic corridors, but the Town has not adopted any detailed standards or criteria for evaluating the visual effects of development on these viewsheds. Many communities define or map their most important viewsheds or visual resources to help guide this type of evaluation.

- What criteria should the Town use to determine compliance with General Plan Policy CD1.3?
- What standards should the Town use to determine if a project has a significant adverse impact on a visual resource?
- What are the Town's most important viewsheds?

Facing southeast along the Rheem Boulevard Scenic Corridor

G. PROJECT DESIGN

1. What are the Town's design requirements for new hillside development?

Moraga's General Plan establishes basic design requirements for hillside development. Policy CD.1.5 says that hillside development needs to:

Sources: General Plan Policy CD.1.5

- Conform to the site's natural setting.
- Retain the character of existing landforms.
- Preserve significant native vegetation.
- Encourage location of building sites so that visual impacts are minimized.
- Maintain a low profile.
- Use landscaping to blend hillside structures with the natural setting.

Moraga's Design Guidelines describe additional expectations for the design of hillside development. The design guidelines address the following topics:

- Location of structures on a site
- General visual impacts
- Rooflines
- Building profile
- Landscaping
- Grading
- Fences, walls, and other accessory structures
- Lot size
- Views
- Roads

H. GRADING

1. What is a grading permit? When is one required, and who approves it?

The Town issues two types of grading permits: discretionary permits required by the Town's Grading Ordinance (Title 14) and ministerial permits issued by the Building Division[5]. "Discretionary" means that Town officials exercise individual judgment as a basis to approve or deny the permit. Ministerial means that Town staff approves or denies the permit based only on fixed standards and objective measurement.

A discretionary grading permit is required to move 50 cubic yards or more of earth or to grade an area of 10,000 square feet or more. The Town may also require a grading permit depending on the distance from a watercourse or adjacent property, depth of grading, use and location of fill, and resulting slope. Certain activities are exempt from the permit requirements, such as utility trenches, below-grade excavation for basements and building footings, and emergency work.

Moraga's Grading Ordinance defines grading as "the physical movement of earth material by forces other than nature including, but not limited to, excavating, filing, compacting, hauling, and related work, excluding discing[sic]."

Depending on the type of project, grading permits are approved by the Design Review Administrator, the Design Review Board, or the Town Council. The Design Review Administrator approves permits for grading on slopes less than 20 percent slope and involving less than 200 cubic yards of soil. The Design Review Board approves permits for grading on slopes greater than or equal to 20 percent, or on predevelopment average slopes of less than 25 percent, with soil disturbance less than or equal to 200 cubic yards. The Town Council approves permits for grading on predevelopment average slopes of 25 percent or greater, following a recommendation from the Planning Commission.

[5] These ministerial grading permits are issued by the Contra Costa County Department of Conservation and Development, on behalf of the Town of Moraga.

Design Guidelines influence the appearance of Moraga's homes and neighborhoods

2. What are the Town's basic requirements for grading?

Moraga's General Plan and Design Guidelines establish the Town's basic expectations for grading in hillside areas.

In general, grading must:

- Preserve the natural topography of the land.
- Achieve a natural appearance by following natural contours and blending with natural slopes.
- Round off graded slopes in a manner that conforms to the natural contours of the land and to the surrounding terrain.
- Avoid sharp angles produced by earth moving, specifically at the top and toe of graded slopes.
- Minimize the displacement of soil and use of retaining walls.
- Blend slopes with the contours of contiguous properties to create smooth transitions.
- Minimize scars caused by cuts, fills, and drainage benches on natural slopes.
- Adapt new road construction to topography and natural features.

Moraga's Grading Ordinance also states that "all grading should be balanced on site." Balanced grading means that cut and fill amounts on a site are equal, requiring no import or export of materials. In Moraga balanced on-site grading is preferred, but not mandatory.

Balanced Grading. Grading Ordinance §14.48.030 states that "All grading should be balanced on site," indicating that it is a guideline, rather than a strict standard. In some cases, particularly where there is significant excavation required, but not a corresponding need for fill material, strict adherence to the guideline may mean that less of the natural topography of the site will be preserved because the deposited fill needs to be placed on an area that might not otherwise need to be disturbed.

- Are there circumstances where not balancing cut/fill on site is acceptable?

3. Are there more specific rules that grading projects need to follow?

Moraga's Grading Ordinance establishes more specific design standards for hillside grading. Although these standards are technical in nature, they strongly affect the aesthetics of new developments.

Sources:
Grading Ordinance Sections:
14.48.011
14.48.013
14.48.014
14.48.021
14.48.025
14.48.026
14.48.027

For example, the design standards of the Grading Ordinance include requirements that developments conform to the surrounding terrain and that slopes must be "rounded-off." Illustrated in Diagrams 6, 7, and 8, these standards serve to give developed areas a more natural appearance and blend them with adjacent natural areas.

Although these design standards provide ample guidance for development projects, some question whether the standards are too rigid. Such rigidity also creates the potential for loopholes, because even though a development might meet all the requirements, the resulting topography may not be ideal for a particular location.

Many of these provisions, such as maximum gradients, are established as standards, but allow for deviation from those standards where strict adherence is infeasible, or where justified by site-specific conditions or supported by technical studies. Maximum gradient is a key issue that exemplifies some of the perceived shortcomings of the current grading ordinance.

Grading Standards. Chapter 14.48, the Grading Ordinance adopts a set of detailed grading standards with limited flexibility. Municipal Code Chapter 14.48.011 and 14.48.021 generally limit maximum gradients for cut and fill slopes to a ratio of three horizontal to one vertical. In some cases, however, steeper slopes or other deviation from current standards may be preferable, even if strict adherence to current standards is technically feasible.

- Should any specific grading standards be changed?
- Should the Town continue to apply a strict limit on maximum gradient for cut/fill slopes?
- Should slopes steeper than three horizontal to one vertical (3:1) be allowed, provided they are adequately engineered for stability?

DIAGRAM 6: MAXIMUM GRADIENT

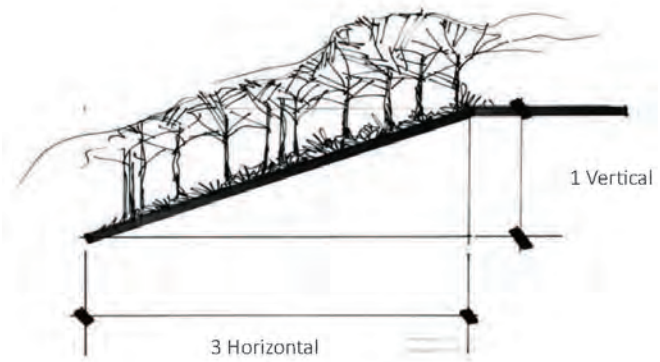


DIAGRAM 7: ROUNDING OFF OF SLOPES

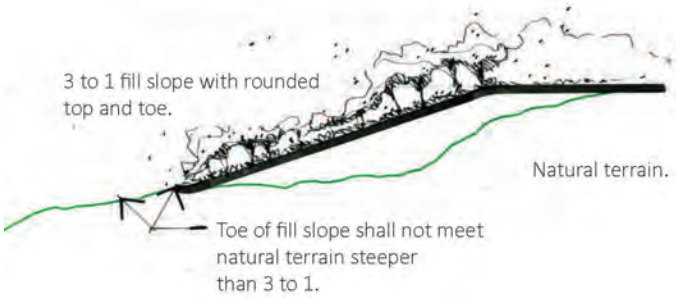
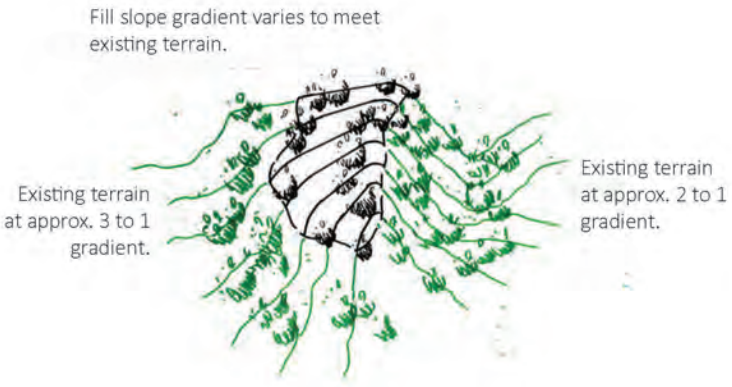


DIAGRAM 8: CONFORMANCE TO SURROUNDING TERRAIN



4. When is grading prohibited?

In all areas of Moraga, grading is prohibited on predevelopment average slopes steeper than 25 percent. Grading that could result in materials being washed, eroded, or moved off of the property is also prohibited.

Source: Grading Ordinance Section 14.04.033 (Grading – Restrictions)

The Town may allow grading on slope of over 25 percent if required for landslide repair, slope stabilization or other emergencies, or at the specific direction of the Town Council. The General Plan says that the Town Council may approve grading on slopes over 25 percent if "supported by site-specific analysis and shown that a minimum amount of grading is proposed in the spirit of and not incompatible with all other policies of the General Plan."

Specific areas in Moraga may have additional grading restrictions. In MOSO Open Space, grading is prohibited on slopes of 20 percent or greater, crests of minor ridgelines, and within 500 feet of the centerline of a major ridge.

I. PERMITS AND APPROVALS

1. What permits are required to develop hillside and ridgeline areas?

Permits required for a hillside development project vary depending on the type of project.

Table 1 lists the permits required for a typical residential subdivision in a hillside area. Permits are approved by the Design Review Administrator, Design Review Board, Planning Commission, and Town Council, depending on the type of permit. Additional permits, such as a variance or an encroachment permit, may be required for some projects.

TABLE 1 PERMITS TYPICALLY REQUIRED FOR NEW RESIDENTIAL SUBDIVISIONS IN HILLSIDE AREAS

Permit	When Required	Who Approves
Conditional Use Permit	Land uses other than agriculture in MOSO and Non-MOSO Open Space	Planning Commission
Hillside Development Permit	Development on slopes 20 percent or more	Varies (See Question I.)
Grading Permit	Moving 50 cubic yards or more of earth or grading an area of 10,000 square feet or more	Varies (See Question H.)
Tentative Map	Subdivision of land	Planning Commission
Final Map	Subdivision of land	Town Council
Design Review	New structures, landscaping, lighting, etc.	Design Review Board
Conceptual, General, and Precise Development Plan	Development in Planned Development District (See Question I.)	Planning Commission

2. What is a Hillside Development Permit?

Findings required by Municipal Code Section 8.136.070, Standards for review and approval of hillside development permit:

A. In reviewing an application the reviewing body shall consider the following factors: slope, soil instability, drainage, soil characteristics, seismic factors, existing and future residential development, view shed, access, potential traffic congestion, fire risk, noise, glare, wildlife, dust and impact on existing vegetation.

B. The site plan shall provide an appropriate living space on a site consistent with the site's constraints in relation to the review and approval criteria set forth in this section.

C. A building site which is adjacent to a steep slope not abutting a ridge shall be located at the lowest possible elevation on the site.

D. Residential development that is adjacent to a steep downslope shall be designed so that the principal and accessory structures blend with the topography.

A Hillside Development Permit (HDP) is required to grade, clear, construct upon, or alter land that "has a slope of twenty (20) percent or greater." This requirement applies throughout Moraga, not just in Open Space areas. Grading on hillsides requires a Hillside Development Permit even if a grading permit is not required.

A Hillside Development Permit is approved by the review authority for the land use entitlement. For example, if the project requires Planning Commission approval of a Conditional Use Permit, the Planning Commission also approves the Hillside Development Permit. For a project that requires only a building permit, the Design Review Board approves the Hillside Development Permit.

To approve a Hillside Development Permit, the Town must find that the project fits within constraints on the site, based on consideration of a broad range of factors. Constraints include slope, geologic conditions, drainage pattern, surrounding development, natural wildlife, fire risk, views, and traffic. The Town may require lot areas greater than the minimum required by the applicable zoning district to ensure a "suitable building site."

While it is not explicit in the Chapter, the Town has required a Hillside Development Permit for all modifications to structures on land with a slope of 20 percent or greater. This can include small projects on existing developed single-family lots, such as retaining walls, accessory structures, and small additions, as well as new subdivisions. The Town has not formally adopted a policy to guide the implementation of Chapter 8.136 of the Municipal Code, and, anecdotally, this requirement has not been uniformly applied over time.

Hillside Development Permit. The Planning and Zoning Ordinance (Title 8) requires Hillside Development Permits (HDP) for all projects on slopes of 20 percent or greater, without considering other factors. Further, the policy is not explicit as to whether an HDP is required if any portion of a site has a slope of 20 percent or greater, or only where the development would affect or disturb such a slope. Finally, Chapter 8.136 of the Municipal Code has been in the Town's regulations since Moraga incorporated, before MOSO, the Design Guidelines, or the Grading Ordinance were adopted. Some have suggested that these newer, more detailed regulations make the Hillside Development Permit redundant or duplicative of other permits or approvals otherwise required by the Town.

- Should a Hillside Development Permit be required for all projects, even development on a single-family lot?
- Is a Hillside Development Permit required if any portion of a property has greater than 20 percent slope?
- Are Hillside Development Permit requirements redundant for projects that otherwise need grading or building permits, design review, or MOSO approval?

3. What is a Planned Development District?

A Planned Development district is a type of zoning district for large-scale development, which allows for flexibility in development standards and permitted land uses. All parcels 10 acres or more are zoned as Planned Development. Subdivisions of 5 or more units within MOSO Open Space are also subject to Planned Development district requirements.

Source: Zoning Ordinance Chapter 8.48(Planned Development District)

4. What type of development is allowed in a Planned Development District?

For a Planned Development District that is in MOSO Open Space, the permitted land uses are the same as in the MOSO Open Space District. Agriculture is allowed by right; single-family homes, parks and recreational facilities, and schools require a Conditional Use Permit. Outside of MOSO Open Space, any land use consistent with the underlying General Plan land use designation is permitted.

The minimum lot size ranges from 5,000 to 40,000 square feet, with allowances for some clustering of homes and variation in lot size. Development standards (e.g. building height, setbacks) are set by the Planning Commission, and usually parallel those of the residential land use district that is most similar to the intensity and type of development proposed. However, the town may "*vary the development standards and impose additional standards when it is desirable to do so to encourage a desirable environment, protect and maintain property values and community amenities, and foster and maintain the health, safety and general welfare of the town*." (MMC §8.48.060.B).

Land uses consistent with the underlying General Plan land use designation are permitted.

5. What is the process for the Town to approve a Planned Development?

Approval of a Planned Development project follows a three-step process: (1) Conceptual Development Plan (CDP); (2) General Development Plan (GDP); (3) Precise Development Plan (PDP). Diagram 9 describes the type of information required for these steps.

The Planning Commission approves each type of development plan. To approve a Conceptual Development Plan, the Planning Commission must make certain findings, including that the project:

- Creates an environment of "sustained desirability and 'stability.'"
- Is served by adequate infrastructure, including streets and utilities.
- Will not generate traffic that overloads the Town's street network.
- Includes design features and amenities that warrant exceptions to basic zoning standards.
- Is compatible with surrounding areas.

Chapter 8.48 of the Municipal Code does not identify specific findings for approval of General Development Plan or a Precise Development Plan. The Town has historically approved General and Precise Development Plans if they are consistent with an approved General Development Plan.

Once a CDP is approved, the Town tends to be limited to a very particular site plan or density because of the requirement for conformance between the CDP and subsequent GDPs and PDPs. This requirement can cause notable challenges when many years elapse between a CDP and GDP approval, especially when market, regulatory, or other conditions have changed. Additionally, securing timely CEQA approval for a project can also be challenging as a result of this process, since physical conditions and CEQA requirements or project features may also change in the time between CDP, GDP, and PDP approvals.

Planned Development Process. Chapter 8.48 of the Planning and Zoning Ordinance in the Municipal Code requires a three-step process for planned developments. Moraga's three-step Planned Development approval process may be lengthy and expensive for some project applicants. Because the initial approval establishes fundamental components of the project, such as density and a site plan, and details of the proposal are not always available during the conceptual development plan phase, the three-step process can limit the ability to suggest or require changes to a project by the community or the Town in light of new information, regulations, or concerns. The three-step process can also limit applicants' ability to improve a project. However, some feel that the current process is not unduly inefficient or costly for applicants, and important for public participation, and should therefore not be modified.

- Should Moraga modify its Planned Development approval process so that the Town has more complete information when making initial approvals?
- Would a modified process provide the public with adequate opportunities for comment?

DIAGRAM 9: PLANNED DEVELOPMENT PROCESS

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CHAPTER 3:
INITIAL LIST OF ISSUES FOR FURTHER DISCUSSION

The Hillsides and Ridgelines Project addresses a great deal of complex regulation, but the questions at the core of this process are fairly simple. Chapter 2 covered a large amount of information relating to Moraga's hillside and ridgeline regulations. This chapter briefly restates the key questions and issues brought up in Chapter 2.

As stated in Chapter 1, it is expected that this list will serve as a starting point for discussion, and will be refined and/or expanded with additional input from the Steering Committee and community.

1. Protecting Ridgelines

    1.1. Does General Plan Policy CD1.5 apply to all ridgelines in Moraga, including those outside MOSO and Non-MOSO Open Space, or only Major and Minor Ridgelines on MOSO lands?

    1.2. What exactly does "protect" mean in the context of hillside development?

2. Steeply-Sloping Portions of Development Site

    2.1. Can homes be built on a portion of a site with a slope of greater than 20 percent if the average slope of the site is less than 20 percent?

    2.2. Can homes be built on a portion of a site with less than 20 percent slope, if the average slope of the entire site is greater than 20 percent?

3. Cell Shape / Slope Calculation

    3.1. Do the rules for calculating the slope of a site or "cell" need to be modified to better reflect the intent of Moraga's hillside regulations?

    3.2. How could the Town use improved data, or more explicit guidelines to address this question?

4. Remediation in High Risk Areas

    4.1. Can geologic hazards in "high risk" areas be remediated as part of a development project to allow densities greater than 1 unit per 20 acres?

    4.2. Should remediation within MOSO areas only be allowed when it would address an existing threat to public health and safety?

5. Viewshed Protection

   5.1. What criteria should the Town use to determine compliance with General Plan Policy CD1.3?

   5.2. What standards should the Town use to determine if a project has a significant adverse impact on a visual resource?

   5.3. What are the Town's most important viewsheds?

6. Balanced Grading

   6.1. Are there circumstances where not balancing cut/fill on site is acceptable?

7. Grading Standards.

   7.1. Should any specific grading standards be changed?

   7.2. Should the Town continue to apply a strict limit on maximum gradient for cut/fill slopes?

   7.3. Should slopes steeper than three horizontal to one vertical (3:1) be allowed, provided they are adequately engineered for stability?

8. Hillside Development Permit

   8.1. Should a Hillside Development Permit be required for all projects, even development on a single-family lot?

   8.2. Is a Hillside Development Permit required if any portion of a property has greater than 20 percent slope?

   8.3. Are Hillside Development Permit requirements redundant for projects that otherwise need grading or building permits, design review, or MOSO approval?

9. Planned Development Process

   9.1. Should Moraga modify its Planned Development approval process so that the Town has more complete information when making initial approvals?

   9.2. Would a modified process provide the public adequate opportunities for comment?

NEXT STEPS

After a period of public review, this Background Report was updated to reflect comments and additional information provided by the public. Prior to being finalized, this report will also be reviewed by members of the project Steering Committee and members of the Town Council. Feedback from these decision makers will also be incorporated into the final report. A key component of this process will be determining whether the questions presented above accurately reflect the most important issues and community priorities relating to Moraga's hillsides and ridgelines. The questions listed above are only an initial list and may undergo notable changes in response to feedback from the public and decision makers.

Following publication of the Draft Background Report, there was a public workshop to receive feedback on the report and other aspects of the Hillsides and Ridgelines Project. The public workshop solicited in-person public comment on the Draft Background Report, and Open Town Hall forums enabled the public to provide additional online comment. This version of the report will be reviewed at an upcoming meeting of the project Steering Committee. At this meeting, members of the Steering Committee will have an opportunity to engage in discussion and provide additional feedback, bearing in mind the comments provided by members of the public at the preceding workshop and through Open Town Hall. Finally, a joint Town Council/Planning Commission meeting will be held to review the Background Report and provide direction for the upcoming phases of the Hillsides and Ridgelines Project.

PLANNED PROCESS

Following finalization of the Background Report:

- The project Steering Committee, Planning Commission, and Town Council will determine what questions to address as the Hillsides and Ridgelines Project moves forward.
- Town staff and the project team will identify and present options for addressing these questions.
- Decision makers will pick the best options for addressing the questions, and preliminary revisions to existing policies and regulations will be prepared to reflect these options.
- The Town Council and Planning Commission will undertake the process to review and adopt revised policies and regulations.

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APPENDICES

Understanding Moraga's Hillside Regulations

Town of Moraga
REVISED November, 2014

Prepared by:

PLACEWORKS

APPENDIX A

MAP DESCRIPTIONS

MAP DESCRIPTIONS

Map 1 Moraga Hillside Areas

The primary feature of Map 1 is a hillshade with a color ramp depicting relative elevations within the Town of Moraga. These elevation data were produced from LiDAR data provided by Contra Costa County. LiDAR is composed of point-based data depicting elevation. These points are collected using specialized laser-based systems mounted on aircraft. By measuring how the laser beams bounce of the earth's surface and other objects, these data provide a highly accurate measure of elevation; however, data may be less precise or accurate in areas with numerous buildings or heavy foliage.

Map 2 Open Space Lands

The primary features of Map 2 are the MOSO and non-MOSO Open Space areas within the Town of Moraga. These areas are based on the zoning and land use GIS data maintained by the Town, which are derived from maps adopted as part of MOSO and the General Plan.

Map 3 Development: MOSO Ridgelines

The primary features of Map 3 are the major and minor ridgelines defined by MOSO within the Town of Moraga, as well as the 500-foot development buffers surrounding major ridgelines. The ridgelines shown are based upon the GIS data maintained by the Town, which are in turn derived from maps adopted as part of MOSO and the General Plan. Buffers of the major ridgelines were created using the ArcGIS software suite.

Map 4 Moraga Development Capability Map

The primary features of Map 4 are the areas designated as "High Risk" ie., Low Development Capability. This map is derived from a scan of the paper map that was included as Exhibit D and adopted under the MOSO Interpretation Guidelines in 1992.

Map 5 FEMA Flood Zones

The primary features of Map 5 are the 100- and 500-year floodplains as determined by the Federal Emergency Management Agency (FEMA) for the creation of 2009 Flood Insurance Rate Maps. The 100-year floodplain comprises areas where in any given year there exists a 1 percent probability of inundation. The 500-year floodplain comprises areas where this probability is 0.2 percent in any given year. It is important to note that these areas are based purely on probability, and this does not mean that a 100 year flood will occur once in every 100 year period or that a 500-year flood will occur once in every 500 year period. These areas are determined through hydrological analysis, based on the period for which historical climate and flood records are available. Due to natural variability, these numbers only represent an average of what could potentially be expected long-term.

Map 6 Wildfire Hazard Areas

The primary features of Map 6 are the Wildfire Hazard Severity Zones developed by the California Department of Forestry and Fire Protection (CalFIRE) in 2007 and 2009. These zones offer a relative measure of the overall risk posed by wildfire in a given area. CalFIRE determines these risks using a combination of fuel conditions, development levels, climate, and other factors. Areas with dense vegetation, dry climates, and nearby urban development are generally regarded as the highest risk, whereas central urban locations are usually regarded as lower risk due to their distance from highly flammable natural vegetation.

Map 7 Liquefaction Susceptibility

The primary features of Map 7 are liquefaction susceptibility areas, as determined by the US Geological Survey (USGS). Liquefaction is a soil condition that can occur as a result of seismic shaking during an earthquake. A combination of factors, including poorly consolidated and water saturated soils, can lead to amplified shaking, ground failure, or even the surfacing of groundwater. Liquefaction can therefore lead to severe structural damage, including sinking or even complete collapse in some instances. The USGS determines the level of liquefaction risk through a variety of factors, including proximity to active faults, proximity to streams or other bodies of water, and local soil types/conditions.

Map 8 Major Hydrology and Drainage Patterns

The primary features of Map 8 are permanent and intermittent watercourses in Moraga, as provided by the Contra Costa County Department of Conservation and Development. Intermittent watercourses are creeks or streams that typically cease to flow during dry periods of the year or during droughts. Permanent watercourses are those that typically flow throughout the year, even during the dry season. However, even permanent water courses may partially or entirely dry up during periods of extreme drought. This inventory of creeks and drainages was digitized in 2003 by the Contra Costa County Public Works Department and community volunteers.

Map 9 Scenic Corridors and Hillside Visibility

The primary features of Map 9 include the Town-designated Scenic Corridors, 500-foot buffers of those Scenic Corridors, and colored shading indicating the relative visibility of areas, as viewed from along these Scenic Corridors. Scenic Corridors are designated by the Town under Policy CD3.1 of the General Plan. The roadway line data that served as the basis for determining and illustrating the locations of these corridors were provided by Contra Costa County. 500-foot buffers of the corridors, as well as the relative visibility data, were created using the ArcGIS software suite.

To create the relative visibility data, a set of points was generated along each Scenic Corridor roadway, at a frequency of one point every 200 feet. Using the LiDAR-derived elevation dataset discussed previously, an algorithm was run to determine the frequency with which each raster cell within the elevation data would be visible from the points along the roadways. (Each raster cell represents a square 64-sq ft area measuring 8 feet on each side.) The more frequently a particular cell was visible from the points along the Scenic Corridor, the higher its relative visibility. It should be noted, however, that these relative visibility data do not account for the presence of intervening structures or vegetation, which may in some cases significantly impact views from along Scenic Corridors.

APPENDIX B

TEXT OF MOSO BALLOT INITIATIVE

Exhibit B

MORAGA OPEN SPACE INITIATIVE MEASURE A
(Full Text of Ordinance)

The people of the Town of Moraga DO ORDAIN as follows:

SECTION 1. Short Title.

This ordinance shall be known as the "Moraga Open Space Ordinance".

SECTION 2. Findings.

The people of the Town of Moraga find and declare the following:

a. The character and feel of the Town of Moraga is contingent upon the preservation of a substantial amount of open space, the protection of the scenic views of major and minor ridgelines, and the regulation of development in sensitive open space areas.

b. The Town has experienced significant development pressures in recent years which threaten the amount and quality of open space resources of the Town and which adversely affect the capacity of the Town's public facilities, such as drainage and traffic facilities, and are otherwise altering the character of the community.

c. It is the intent of the people of the Town to protect the remaining open space resources within the Town in the interest of: (1) preserving the feel and character of the community; (2) ensuring the adequacy of recreational opportunities which are contingent on such open spaces; (3) ensuring the protection of local and regional wildlife resources which are dependent on the habitat provided by such open space; (4) ensuring that development does not occur in sensitive viewshed areas; (5)protecting the health and safety of the residents of the Town by restricting development on steep or unstable slopes; and (6) ensuring that development within the Town is consistent with the capacity of local and regional streets and other public facilities and does not contribute to the degradation of local or regional air quality.

d. It is the purpose of this Ordinance to revise and augment the policies of the Town recorded in the General Plan and the ordinances of the Town relating to the preservation of open space and protection of ridgelines. This ordinance is consistent with and implements the policy in General Plan Amendment 3, enacted November 18, 1981, which established a policy of minimum lot size designations of twenty (20), ten (10), and (5) acres in some open space areas.

e. In addition to the reasons described above, this Ordinance is necessary to promote the general health, safety and welfare of the residents of Moraga.

SECTION 3. Protection of Open Space.

a. The following policy is added to Goal 1 of the Open Space Element of the General Plan:

"3) Any use of or development on lands designated in the General Plan or by this Ordinance as 'Open Space Private' or 'Public Open Space-Study' (hereinafter 'Open Space Lands') shall be limited to a maximum density of one (1) dwelling unit per twenty (20), ten (10), or five (5) acres, but in no case shall density on such lands exceed one (1) dwelling unit per five (5) acres. Areas identified as 'high risk' areas, as defined in this Ordinance, shall be limited to a maximum density of one (1) dwelling unit per twenty (20) acres. Density transfers from Open Space Lands to other lands shall be encouraged; provided that in no event shall dwelling units be transferred to Open Space Lands or to 'high risk' areas. The Town Council shall identify 'high risk' areas after taking into account soil stability, history of soil slippage, slope grade, accessibility, and drainage conditions."

b. Policy Number 1 of Goal 4 of the Open Space Element of the General Plan is revised to read as follows:

"1) Development shall be prohibited on slopes with grades of twenty percent (20%)or greater and on the crests of minor ridgelines. The Town Council shall reduce the allowable densities on slopes of less that twenty percent (20%) through appropriate means such as requiring proportionally larger lot sizes or other appropriate siting limitations. For the purposes of this paragraph, the term 'minor ridgeline' means any ridgeline, including lateral ridges, with an elevation greater than 800 feet above mean sea level, other than a major ridgeline."

c. The following policy is added to Goal 1 of the Land Use Element of the General Plan:

"8) Notwithstanding any other provision of the General Plan, any development on lands depicted in the General Plan or by this Ordinance as 'Public Open Space-Study' or 'Private Open Space' shall be limited to a maximum density of one (1) dwelling unit per twenty (20), ten (10), or five (5) acres, but in no case shall density on such lands exceed one (1) dwelling unit per five (5) acres. Areas identified as 'high risk' areas, as defined in this Ordinance, shall be limited to a maximum density of one(1) dwelling unit per twenty (20) acres."

d. Section 8-3805 is added to Chapter 38 of the Zoning Ordinance of the Town of Moraga as follows:

"Section 8-3805 Open Space Density.

"(a) Notwithstanding any other provision of the ordinances of the Town of Moraga: (1) all land within the Town of Moraga

designated 'Public Open Space-Study' or 'Private Open Space' (hereinafter referred to as 'Open Space Lands') in the Moraga General Plan as such Plan existed on October 16, 1985, or which is designated such by this Ordinance is hereby zoned 'Open Space' ('OS'); and (2) any development on such Open Space Lands shall be limited to a maximum density of one (1) dwelling unit per twenty (20), ten (10), or five (5) acres, but in no case shall density on such lands exceed one (1) dwelling unit per five (5) acres. Areas identified as 'high risk' areas, as defined in this Ordinance, shall be limited to a maximum density of one (1) dwelling unit per twenty (20) acres. The Town Council may authorize density transfers from Open Space Lands to other lands pursuant to the procedures set forth in Chapter 47 herein; provided that in no event shall dwelling units be transferred to Open Space Lands or to high risk areas. In determining the appropriate density transfer credit applicable to any such Open Space Lands, the Town Council may authorize the transfer of a net density of no greater than one (1) dwelling unit per ten (10) acres.
"Development shall be prohibited on slopes with grades of twenty percent (20%) or greater and on the crests of minor ridgelines. The Town Council shall reduce the allowable densities on slopes of less than twenty percent (20%) through appropriate means such as requiring proportionally larger lot sizes or other appropriate sitting limitations. For the purposes of the Ordinance, the term 'minor ridgelines' means any ridgeline, including lateral ridges, with an elevation greater than 800 feet above mean sea level, other than a major ridgeline.

"(b) Development shall be prohibited on minor ridgelines immediately adjacent to and extending into Open Space Lands if slopes exceed twenty percent (20%) and elevation of said ridges is greater than 800 feet above mean sea level."

e. Section 8-5702 of Chapter 57 of the Zoning Ordinance of the Town of Moraga is amended as follows:

"(a) Development shall be prohibited within 500 feet of the centerline of a major ridge (as defined in subsection (b)) located in an area designated on the General Plan as 'Private Open Space' or 'Public Open Space-Study' and development shall be subject to strict design review control in all other ridge areas. A road, together with attendant underground utilities, may cross a ridge, if the Planning Commission finds that the crossing is necessary for the orderly development of the Town and does not otherwise conflict with the Municipal Code.

"(b) For the purpose of this section, the centerline of a major ridge is the line running along the highest portion of the ridge located within those areas designated on the General Plan as 'Private Open Space' or 'Public Open Space-Study'."

f. Without limiting the generality of the Moraga Open Space Ordinance, General Plan Amendments No. 6 adopted in Resolution No. 28-83 on June 15, 1983, and No. 8 adopted in Resolution No. 39-83 on September 7, 1983, are hereby repealed and are of no further force or effect. Such lands as were affected

by those amendments are hereby given a General Plan designation of "Public Open Space-Study" and are zoned "Open Space" as provided in Section 3d above.

SECTION 4. Applicability.

The provisions of this Ordinance shall apply to any person who, as of the date of the election, has not (a) obtained a building permit for the development project, and (b) incurred substantial construction expenses in good faith reliance on such building permit.

SECTION 5. Implementation: Interim Development Controls: Interpretation

a. Promptly after the enactment of this Ordinance, the Town Council shall adopt such revisions to the General Plan and the Zoning Ordinance as may be necessary to fully implement the Moraga Open Space Ordinance or to ensure the internal consistency of the General Plan or the consistency of the Moraga Open Space Ordinance with the General Plan; providing that the Town Council shall not amend or modify any requirement of this Ordinance without approval by the electorate at the general election.

b. Until the full implementation of the Moraga Open Space Ordinance as contemplated by subsection (a) or until January 1, 1987, whichever occurs first, the Town Council, or any other reviewing authority, shall not issue any permit or otherwise authorize or approve any use or development, including but not limited to divisions of land, with a density greater than one (1) dwelling unit per twenty (20) acres on: (1) any lands designated in the General Plan or by this Ordinance as "Open Space", "Public Open Space-Study" or "Private Open Space", or (2) major or minor ridgelines, or on slopes greater than twenty percent (20%), or on slopes which are unstable or subject to erosion or deterioration. Nothing in this subsection is intended to authorize issuance of any permit or approval of any development except in compliance with Section 3d above.

c. In the event of any conflict between the Moraga Open Space Ordinance and the Zoning Ordinance, the provisions of the Moraga Open Space Ordinance shall prevail.

SECTION 6. Severability.

In any section, subsection, paragraph, subparagraph, clause or phrase of this Ordinance, or any amendment or revision of this Ordinance is, for any reason, held to be invalid or unconstitutional, the remaining sections, subsections, paragraphs, subparagraphs, clauses and phrases shall not be affected, but shall remain in full force and effect.

APPENDIX C

GUIDELINES FOR INTERPRETING AND IMPLEMENTING THE MORAGA OPEN SPACE INITIATIVE (MOSO GUIDELINES)

GUIDELINES FOR INTERPRETING AND IMPLEMENTING THE MORAGA OPEN SPACE INITIATIVE

Appendix "A" To Town Council Resolution No. 14-92
as amended by Town Council Resolution No. 6-99

Table of Contents

INTRODUCTION.

A. Findings.

The Town Council of the Town of Moraga finds that:

1. The Moraga Open Space Initiative Measure A (the Open Space Ordinance) was adopted by the voters of the Town of Moraga at the General Municipal Election held on April 8, 1986. The Ordinance took effect on April 26, 1986.

2. By adopting the Ordinance, the people of Moraga have declared their intent "to protect the remaining open space resources within the Town in the interest of: (1) preserving the feel and character of the community; (2) ensuring the adequacy of recreational opportunities which are contingent on such open spaces; (3) ensuring the protection of local and regional wildlife resources which are dependent on the habitat provided by such open space; (4) ensuring that development does not occur in sensitive viewshed area; (5) protecting the health and safety of the residents of the Town by restricting development on steep or unstable slopes; and (6) ensuring that development within the Town is consistent with the capacity of local and regional streets and other public facilities and does not contribute to the degradation of local or regional air quality." (Ordinance Section 2a[1])

3. The Open Space Ordinance directs the Town Council to implement the Ordinance promptly after its enactment. (Ordinance Section 5a)

4. These Guidelines are in partial fulfillment of this mandate and represent implementation. Additional measures to implement the Open Space Ordinance will be presented for adoption as mandated by Section 5 of the Ordinance. As these Guidelines are applied, it may become necessary to amend and supplement them.

5. These Guidelines are not intended to amend or modify a requirement of the Ordinance (Ordinance section 5a)

6. These Guidelines are intended to balance fairly the restrictions on development in open space lands under the Open Space Ordinance consistent with the Town's police power with the rights of owners of open space lands.

B. Purpose.

[1] Unless stated otherwise all parenthetical references are to sections of the Open Space Ordinance, attached to these Guidelines as Exhibit "D".

These Guidelines are adopted in order to provide for the interpretation, implementation and application of the Open Space Ordinance.

II. INTERPRETATION.

A. Definitions.

In these Guidelines unless the context otherwise requires:

1. building permit means an entitlement issued under the Uniform Building Code to erect, construct, alter, repair or demolish a building or structure regulated by the Uniform Building Code;

2. building permit for a development project refers to the permission given to a development project which on or before April 6, 1986:

   a. had a final subdivision map approved by the Town; and

   b. had a fully executed subdivision agreement for completion of tract improvements; (Ordinance Section 4)

3. cell refers to a polygonal shaped area comprised of a minimum of 10,000 square feet. Its function is to describe a specific area for the purpose of ascertaining the average slope grade of the cell. The resulting slope grade calculation determines whether development within the cell may be permitted or is prohibited (Ordinance sections 3b, 3d). In the absence of a submittal by an applicant showing one or more cells as defined, cell refers to an area 200' by 200' as designated on Exhibit "C";

4. centerline of a ridge or crest of a ridge is the line running along the highest portion of a ridge; (Ordinance section 3e)

5. design review control is the function of design review prescribed in sections 8-1301 through 8-1341 of the Municipal Code; (Ordinance section 3e)

6. development means the placement, discharge or disposal of any material, the grading or removal of any material, the change in the density or intensity of use of the land, the subdivision of land, or the construction or erection of a structure. Development does not include (1) work necessary to eliminate or prevent a condition which is determined by the Town to be a menace to life, limb or property or adversely affects the safety, use or stability of a public way or drainage way or channel, or (2) establishment of a fire trail approved by the Moraga-Orinda Fire Protection District, or (3) a road together with attendant underground utilities, may cross a ridge, if the Planning Commission finds that the crossing is necessary for the orderly development of

the Town and does not otherwise conflict with the Municipal Code; (Ordinance Sections 3a-e, as amended by the Town Council on February 24, 1999 by Resolution 6-99).

7. hearing body means the Town Council in the case of an application for vested rights exemption and the Planning Commission in the case of an application for status determination;

8. high risk area is an area located in Open Space Land determined to be high risk in accordance with Part II D. of these Guidelines; (Ordinance sections 3a, 3c, 3d)

9. major ridgeline means the centerline or crest of the ridges known as Indian Ridge, Sanders Ridge, Mulholland Hill, and Campolindo Ridge, where the centerline is located in the lands designated as "public open space study" as shown on the General Plan as it existed on October 16, 1985; (See Exhibit "B")

10. minor ridgeline means the centerline or crest of a ridge other than a major ridgeline, which rises above 800 feet from mean sea level; (see Exhibit "B"); (Ordinance sections 3b, 3d)

11. open space land is an area designated as open space in the General Plan, adopted on August 15, 1990. Open Space Land includes an area designated as "Open Space" by the Open Space Ordinance;

The lands described in GPA 6--Resolution No. 28-83 adopted June 10, 1983, GPA 8--Resolution No. 39-83 adopted September 7, 1983, are included within the term Open Space Land (see Exhibit A); (Ordinance sections 3a, 3c, 3d, 3e, 3f, 5b)

12. Open Space Ordinance means Measure A adopted at the Consolidated General Municipal Election held April 8, 1986, a copy of which is attached as Exhibit "E";

13. parcel means all land which is contiguous and under one ownership.

14. project means a Town approved plan prepared in sufficient detail to permit the completion of physical efforts necessary to accomplish the plan's ultimate objective;

15. ridge is the upper portion of a hill which rises to a crest or ridgeline;

16. ridgeline is the centerline or crest of a ridge;

17. slope with grade of 20% or greater refers to land located within open space land which contains an average slope of 20% or greater using the slope

calculation method set forth in section II.C. of these Guidelines; (Ordinance sections 3b, 3d, 5b)

18. substantial construction expense means performing work in good faith reliance on a building permit for the development project. The term refers to expense incurred in actual construction as opposed to expense incurred in planning, engineering or architectural drawings. The existence of substantial construction expense requires a factual determination in each case, taking into account the nature of the project, Town approvals, and time factors. Among the elements to consider are the physical size and substantiality of work performed, the dollar cost of the work performed and liabilities incurred and the percentage of the total project represented by the work and expenditures already undertaken. (Ordinance section 4)

B. Reference To Exhibits.

The maps described as

Exhibit "A" — Moraga Open Space Ordinance, Preliminary Interpretation (May 12, 1986) Open Space Land Use Designations

Exhibit "B" — Moraga Open Space Ordinance, Preliminary Interpretation (May 12, 1986 Ridges Above 800-foot Elevation

Exhibit "C" — Slope Map, General Plan Program, Town of Moraga (December 1975) (COMARC Design Systems)

Exhibit "D" — Development Capability Map, General Plan Program, Town of Moraga (December 1975) (COMARC Design Systems)

Exhibit "E" — Sample Ballot and Voter Information Pamphlet, Consolidated General Municipal Election, Tuesday, April 8, 1986

the originals of which are on file in the office of the Planning Director are made a part of these Guidelines. A copy of each is attached for reference purposes.

Exhibits "C" and "D" depict only preliminary determination as to slopes and development capability, respectively. An applicant may submit current information which is more refined and more accurately characterizes the site, in which case that information if accepted by the Town supersedes Exhibit "C" and "D".

C. Slope Calculations.

A preliminary determination of slopes with grades of 20% or greater is shown on the Slope Map, attached as Exhibit "C". On that map the cells (200' x 200') designated 5, 6 and 7 represent areas with slopes of greater than 20%. A submittal under these Guidelines shall include a slope analysis map of at least a scale of 1 inch equals 100 feet showing (1) the boundaries of each parcel, (2) elevations every five feet and (3) the average slope for each cell throughout the parcel.

D. Standards for Determining Whether Open Space Land is Within a High Risk Area.

1. Preliminary Identification of High Risk Areas.

The areas located within a cell designated 1, 2, 3 or 4 on the Development Capability Map (Exhibit "D") are determined, on a preliminary basis, to be high risk areas.

This is a preliminary determination and governs until more accurate data are submitted to and approved by the Town.

2. Final Determination of High Risk Areas.

The final determination of a high risk area shall be made under the procedure provided for a status determination and in accordance with the following criteria and standards:

An area shall be classified as a high risk area depending upon both (1) its own site characteristics and (2) its location in relation to other geological and topographical conditions.

The standards for classification of a high risk area as they relate to a site's characteristics include evidence or history or both of soil instability, steepness of slopes, difficulty of access, and adverse drainage conditions. Other standards to be included are whether the site is adversely affected by an off site landslide and whether or not these characteristics can be adequately mitigated consistent with the California Environmental Quality Act (CEQA), the Towns' Environmental Guidelines, and the Goals and Policies of the General Plan.

The Conditions that determine classification as a high risk area include but are not limited to:

a) whether the area has the potential to be adversely impacted by a landslide, unstable soil, soil with a history of slippage or a slope subject to severe surface erosion or deterioration;

b) whether it serves as a natural drainage way or swale, with a drainage basin of 50 acres or more or crossed by a perennial or ephemeral (intermittent) drainage channel;

c) within 50 feet of a known active or dormant fault trace;

d) containing a regular or intermittent spring or adverse ground water conditions;

e) within 100 yards upstream or 500 yards downstream of a reservoir, detention basin or pond of one acre or more in surface area;

f) within an area subject to enhanced seismically induced ground shaking or a seismically induced ground failure such as a landslide, lateral spread, rockfall, ground lurching, liquefaction, soil settlement, differential compaction and compression;

g) within an area subject to the effect of seismically induced flooding and/or dam or stock pond failure.

An area which is classified as a high risk area through the application of the foregoing criteria may be changed from that classification, upon submittal by the applicant, it is found and determined to the Towns' satisfaction that the characteristics making it high risk may be abated by appropriate remedial efforts which are consistent with CEQA, the Town's environmental guidelines, and the Goals and Policies of the General Plan.

Within a single parcel one area could be determined to be "high risk area" and another may not. If a high risk area exists on a parcel, each cell within the parcel which is <u>not</u> designated high risk must be at least 10,000 square feet in area to be excluded from the high risk area classification.

III. <u>RESTRICTIONS ON DEVELOPMENT IN OPEN SPACE LAND</u>.

A. <u>Prohibition of Development</u>.

Development is prohibited in the following areas:

1. Property situated within open space land (Exhibit "A") as follows:
   a) on a slope within open space land where the slope has a grade of 20% or greater (See definition of cell and Exhibit "C";

   b) within 500 feet of a major ridge (Exhibit "B");

   c) on a minor ridgeline (Exhibit "B") and

2. Property situated on a minor ridgeline immediately adjacent to open space land which meets the slope and elevation criteria of section 3.d.(b) of the Open Space Ordinance.

B. Density in Open Space Land.

1. In a high risk area, the density is one dwelling unit per 20 acres and may not be increased.

2. In open space land other than a high risk area density is one dwelling unit per 20 acres unless density is increased as provided in III.C and IV.B of these Guidelines.

3. Density may be transferred from open space land to another residential area located in a land use district other than an open space land use district. Density may not be transferred to a high risk area. (Ordinance section 3d(a))

C. Increase in Density in Open Space Land.

1. The Planning Commission may approve an increase in density from one unit per 20 acres to not more than one unit per 5 acres based upon findings that a proposed development is consistent with the following criteria:

a. the site is physically suitable for the type of development and requested density;

b. the development is not likely to cause environmental damage;

c. the development is not likely to cause public health problems;

d. the distance and relationship to high risk areas is sufficient so that development will not cause undue risk to the subject and surrounding properties and will not increase risk to the public health, safety and welfare;

e. the dwelling units in the proposed development can be substantially concealed from scenic corridors by vegetation or the terrain;

f. public benefit will result from the dedication of open space lands, trails or park and recreational facilities beyond those otherwise required for development;

g. the distance of development from ridgelines is such that the view of ridgelines from a scenic corridor is protected;

h. the project is in compliance with Goal 5 and related policies of the

Open Space and Conservation Element of the General Plan;

i. the proposed development is consistent with the information provided regarding development capability (See II.D.)

2. The procedure for determining density in open space land which is not classified as high risk is prescribed in IV.B.

D. Design Review.

Development on land located on a major or minor ridge is subject to design review control. A road may cross a ridge only if the Planning Commission finds that the crossing is necessary for orderly development and does not otherwise conflict with the Municipal Code. (Ordinance section 3e)

IV. DETERMINING APPLICABILITY OF THE OPEN SPACE ORDINANCE.

A. Application for Vested Rights Exemption (Section 4).

1. Restrictions on development unless vested rights exemption applies.

The restrictions on development set forth in III apply to "...A person who, as of [April 8, 1986] has not (a) obtained a building permit for the development project and (b) incurred substantial construction expenses in good faith reliance on such building permit...". (Ordinance section 4)

2. Certificate of vested rights exemption.

A person seeking an exemption under section 4 of the Open Space Ordinance may apply to the Town for a vested rights exemption.

3. Application for vested rights exemption.

A person seeking a vested rights exemption shall apply to the Planning Director setting forth:

(1) the status of the project and amount of construction work completed as of April 8, 1986;

(2) a statement of the construction expenses incurred for grading, subdivision improvements and structures as of April 8, 1986;

(3) the percentage of the total project represented by the work and expenditures in (1) and (2) above;

(4) other information required by the Director which in his opinion is necessary to determine entitlement to a vested rights exemption.

4. Scope of Vested Rights Exemptions.

A vested rights exemption does not exempt the person receiving the exemption from a permit approval, or requirement other than that imposed by the Open Space Ordinance. Further development on land within a development project for which a person has obtained a vested rights exemption is not subject to the requirements of the Open Space Ordinance.

B. Determining Applicability of Open Space Ordinance to Open Space Land.

1. Status Determination.

A person whose property is or may be affected by the Open Space Ordinance may apply to the Town for a status determination.

The property owner may apply for a status determination at any time and need not await determination until a development plan is submitted. The application may request a determination as to whether the property is subject to the Open Space Ordinance and if so may request a finding of:

a) the slope calculation of the property;

b) whether or not located in a high risk area;

c) the maximum permitted density, applying the criteria set forth in III.C.1 of these Guidelines

2. Application for status determination.

The application for status determination shall be on a form provided by the Town. The application shall be accompanied by:

a. a map showing:

(1) the size and location of the property

(2) the present general plan and zoning designations

(3) the location of major and minor ridgelines

(4) the area within 500 feet of each major ridgeline;

b. a slope analysis map with a scale of no smaller than 1 inch equals 100 feet showing:

(1) the boundaries of each parcel

(2) elevations at intervals of no more than five feet

(3) the average slope for each cell throughout the parcel, SEE II C (Slope calculation)

(4) the actual slope for each portion of the parcel when the slope is 20% or greater

This slope analysis map must be accompanied by supplemental information explaining differences, if any, between the map submitted and the Town's Development Capability Map. (Exhibit "D");

c. a map identifying all applicable geologic and topographic conditions set forth in section II.D. (characteristics of a high risk area) of these Guidelines;

d. sketches showing generally the areas which because of terrain or existing vegetation are concealed from view from scenic corridors;

e. soils, geologic or other study which the developer believes would aid the Planning Commission in its determination.

C. Hearing, Determination and Appeal.

1. Fixing hearing and giving notice.

a. Procedure in the case of vested rights exemption.

(1) Preliminary exemption determination.
Upon the filing of an application for a vested rights exemption, the Planning Director shall determine from the application and the Town's records whether the applicant, in the Director's opinion, is entitled to an exemption.

(2) Director's recommendation.
If the Director concludes that the applicant is entitled to an exemption, he shall so advise the applicant and have the recommendation placed on the agenda of the first available meeting of the Town Council. No other notice need be given.

(3) Town Council action on recommendation.

The Town Council shall act on the Director's recommendation at the earliest practicable time and in no case later than 30 days following the date of the meeting at which the Town Council receives the Director's recommendation unless the time period is waived by the applicant.

(4) Failure of Director to recommend.

If the Director concludes that there is reasonable doubt as to whether the applicant is entitled to an exemption the Director shall set the application for hearing before the Town Council.

Notice and conduct of the hearing and decision on the application shall be as provided for in the case of an application for status determination.

b. Procedure in the case of status determination.

Upon the filing of an application for status determination, the Planning Director shall set the application for public hearing before the Planning Commission to be held within 30 days after the submittal is complete. Notice of the hearing shall be sent to all owners of property within 300 feet of the property which is the subject of the application and to any other person who has requested in writing to be notified for that specific application.

2. Reference of application.

In the case of an application for status determination, the Planning Director may refer the application to the Town Engineer, subcommittee of any Town reviewing body or other technical or professional person.

The cost incurred in referring the application shall be borne by the applicant.

3. Hearing.

At the hearing, the hearing body shall consider the application, the testimony, evidence and all pertinent information presented.

4. Burden of proof.

The applicant has the burden to present evidence which supports the findings necessary to the decision which it seeks.

5. Form of and time for decision.

The hearing body shall make its decision in writing together with appropriate findings.

a) in the case of an application for vested rights determination, not later

than 15 days from the close of the public hearing; and

b) in the case of an application for status determination, not later than 60 days from the close of the public hearing unless the applicant consents to an extension.

The Planning Director shall mail a copy of the decision to the applicant and to each person who has requested in writing to be notified of that decision.

6. Findings and decision.

a) Vested rights determination

The Town Council may not grant an exemption unless it finds that the applicant has:

(1) obtained a building permit for the development project; and

(2) incurred substantial construction expenses in good faith reliance on the permit.

b) Status determination

In its decision on a status determination, the Planning Commission shall make findings to support its decision with specific reference to the criteria applicable to the request:

(1) as to slope calculation, see II C (Slope Calculation)

(2) as to high risk areas, see II D (Standards for Determining Whether Open Space Land is within a high risk area)

(3) as to density see III C (Increase in Density in Open Space Land)

The Planning Commission decision shall, to the extent practicable, advise the applicant (1) which areas of the property may and may not be developed and (2) the maximum density permitted on the site.

The density determination may be modified based upon new information developed for a specific project and environmental studies conducted for that project.

7. Appeal of Status Determination.

A person desiring to appeal the status determination decision of the Planning Commission to the Town Council shall file a written notice of appeal with the Planning Director within 15 days of the date of the Planning Commission decision. The Town Council shall make its decision on the appeal within 60 days of the date of the notice of appeal.

8. Supplemental rules and procedures.

The Planning Commission may adopt additional rules and procedures governing proceedings under these Guidelines which are not inconsistent with these Guidelines.

D. Miscellaneous Provisions.

Fees.

The fee for filing an application for a vested rights exemption or a status determination is the same as the fee fixed for filing an application for a conditional use permit prescribed by Council Resolution No. 39-91.

The fee for appealing a status determination of the Planning Commission is the fee fixed for an appeal of a Planning Commission decision prescribed by Council Resolution No. 39-91.

Appendix D

Title 14: Grading Ordinance

Title 14 GRADING

Chapters:

Chapter 14.04 GENERAL PROVISIONS

Sections:

14.04.010 Title.

This chapter is the "Grading Ordinance" of town of Moraga and may be so cited.

(Ord. 210 (part), 2006)

14.04.020 Scope.

This chapter sets forth regulations for control of grading and discharge of stormwater generated pollutants resulting from grading.

(Ord. 210 (part), 2006)

14.04.021 Purpose.

The purpose of this chapter is to regulate grading on public and private property in the town of Moraga to:

A. Ensure compliance with goals, policies, and programs of the general plan, municipal code and the town design guidelines;

B. Minimize hazards to life, limb, health, property, and public welfare from grading operations;

C. Preserve the natural environment, site amenities and topography of the land;

D. Mitigate geologic hazards and adverse soil conditions;

E. Avoid pollution of watercourses with nutrients, sediments, or earthen materials generated on or caused by surface runoff on or across graded area;

F. Ensure compliance with county, state and federal laws and regulations.

(Ord. 210 (part), 2006)

14.04.030 Grading general.

Grading is generally allowed except that a permit is required pursuant to Section 14.04.031 of this chapter. All grading requiring a permit shall comply with the provisions of this chapter. All grading on hillside land shall require a hillside development permit in accordance with Section 08.136.040(B) of this code regardless of whether or not a grading permit is required.

(Ord. 210 (part), 2006)

14.04.031 Grading—Permits required.

A permit is required where:

A. The cumulative volume of earth material moved is fifty (50) cubic yards or greater;

B. The area to be graded is ten thousand (10,000) square feet or greater;

C. The grading occurs within one hundred (100) feet of a natural watercourse, or within fifty (50) feet of a man-made watercourse not located in the public right-of-way, or alters existing drainage patterns, or has a significant adverse impact on unique natural features or vegetation;

D. The grading exceeds three feet at its deepest point, measured vertically from the elevation of the ground surface prior to the grading;

E. The fill is intended to support structures or buildings;

F. The fill is placed on a ground surface that has a slope of twenty (20) percent or steeper (five horizontal to one vertical);

G. The earthwork creates a slope equal to or steeper than five horizontal to one vertical;

H. The earthwork is unretained and occurs within nine feet of any adjacent property;

I. Excavation or stockpiling of rock, sand, gravel, aggregate or soil where such operations affect the lateral support or increase the stresses in or pressure upon any adjacent or contiguous property; or

J. The grading is associated with the construction of a water well, but excluding the excavation in accordance with Section 14.04.032(D).

Prior to the issuance of a permit, the application shall be approved by the design review administrator, the design review board, the planning commission, or the town council, in

accordance with applicable provisions contained in Chapters 14.08, 14.12 and 14.16 of this code. However, an applicant for a permit whose project has received town approval or been deemed or determined complete prior to the effective date of the grading ordinance is exempt from review under Chapters 14.08, 14.12 and 14.16 of this code.

(Ord. 210 (part), 2006)

14.04.032 Grading—Permits not required; exemptions.

Notwithstanding the requirements of Section 14.04.031 of this chapter, a permit is not required for the following:

A. Improvement, construction, repair or maintenance of watercourses or levees for river and local drainage control, and construction of drainage, irrigation and domestic water supply systems and facilities performed under the supervision of the flood control district, an agency of the federal or state government, a water or sanitation district, or an irrigation or reclamation district if the work is otherwise categorically exempt from local and state ordinances and regulations;

B. Exploratory excavations under the direction of a civil or geotechnical engineer, or certified engineering geologist or professional geologist provided the drainage pattern remains the same. This exemption does not provide an exemption from obtaining a well drilling permit pursuant to Contra Costa County regulations;

C. Emergency work approved by the town and necessary to protect life, limb or property, or to maintain the safety, use or stability of a public way or watercourse. The town shall be notified prior to commencement of emergency work and if a permit is required for the grading under Section 14.04.031 of this chapter an application for the permit shall be submitted no later than forty-eight (48) hours after the commencement of the emergency work. The permit shall be obtained within five calendar days of commencement of the emergency work. Once an emergency situation has been stabilized, town council approval is required for landslide repair or slope stabilization for a predevelopment average slope steeper than twenty-five (25) percent (four horizontal to one vertical);

D. Construction of water wells when a valid permit has been obtained from the county health department;

E. Maintenance of existing fire trails, or access roads to public utility gas and electric transmission lines provided the drainage pattern remains the same;

F. Grading conducted by an agency of the federal, state or county government that is otherwise statutorily exempt from local ordinances, regulations and standards.

G. Utility trenches with an encroachment permit from the town of Moraga;

H. An excavation below finished grade for basements and footings of a building, retaining wall, swimming pool, or other structure authorized by a valid building permit;

I. When approved by the town engineer, grading in an isolated, self-contained area if there is no danger to private or public property.

Exemption from the permit requirements of this chapter shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this chapter or any other laws or ordinances of this jurisdiction.

(Ord. 210 (part), 2006)

14.04.033 Grading—Restrictions.

Except as otherwise permitted by the provisions of this chapter, grading is prohibited as follows:

A. Where dirt, soil, rock, debris, or other material that if washed, eroded, or moved from the property by natural or artificial means would create a public hazard, or an unlawful encroachment on other property, watercourse, or on a public road or street, easement or right-of-way;

B. During the wet season (October 15 through April 15), except that the town may approve wet season grading if all of the following conditions are met:

1. Applicant has an erosion control plan approved by the town,
2. A letter from the project geotechnical engineer or certified engineering geologist stating that such grading is acceptable and will not create a hazard to life, limb, property and public welfare,
3. Wet weather best management practices (BMPs) for grading operations in conformance with approved plans and SWPPP have been placed and approved by the town and installed and are kept continuously in place,
4. Security acceptable to the town has been provided;

C. On weekends and town of Moraga holidays and outside the hours of eight a.m. to five p.m. Monday through Friday except where required to abate an emergency situation as specified in Section 14.04.032(C) of this chapter;

D. No grading shall occur on predevelopment average slopes steeper than twenty-five (25) percent (four horizontal to one vertical) unless grading is required for landslide repair, slope stabilization or other emergencies, and at the specific direction of the town council;

E. Blasting or other use of explosives shall not be permitted.

(Ord. 210 (part), 2006)

14.04.040 Applications—General.

To obtain a permit, the applicant shall file a written application on the appropriate applications form provided by the town and submit all documents required by the planning department. Every application shall conform to the requirements set forth in this chapter. The permit shall be issued only to the owner or his or her authorized agent.

An encroachment permit is required for grading within a public right-of-way, or within an easement under the jurisdiction of the town.

A hauling permit is required for movement of five hundred (500) cubic yards on public streets in accordance with Resolution 46-82 PC.

Grading within an area designated as a "Special Flood Hazard Area" as defined in Section 8.108.040 of this code must comply with the provisions of Chapter 8.108 of this code.

(Ord. 210 (part), 2006)

Chapter 14.08 DESIGN REVIEW ADMINISTRATOR AUTHORITY

Sections:

14.08.010 Design review administrator—Approval required.

All grading operations on slopes less than twenty (20) percent and less than two hundred (200) cubic yards that require a permit shall be reviewed and approved by the design review administrator prior to the issuance of a permit.

(Ord. 210 (part), 2006)

14.08.020 Design review administrator—Consideration.

Upon determining the application complete, the design review administrator shall consider the application for a permit if it is consistent with the town guidelines and is recommended for approval by the town engineer.

If the design review administrator determines the application is inconsistent with the town design guidelines, the application shall be reviewed by the design review board.

(Ord. 210 (part), 2006)

14.08.030 Design review administrator—Required findings.

The design review administrator may grant a permit under this chapter, only after a determination that the grading is:

A. Consistent with the town design guidelines and does not require a design exception;
B. Does not result in any slope of twenty (20) percent or more;
C. Consistent with the regulations and restriction of this chapter and does not require a modification;
D. Not detrimental to public safety;
E. Not detrimental to stormwater runoff; and
F. Not inconsistent with the general plan.

(Ord. 210 (part), 2006)

14.08.040 Design review administrator—Term of approval.

All permit applications approved by the design review administrator shall be valid for two years. The approval may be extended for an additional year, if other approvals required to implement the proposed project are not obtained within one year of the design review administrator approval.

(Ord. 210 (part), 2006)

14.08.050 Design review administrator—Appeal.

Any person wishing to appeal the decision of the design review administrator may do so in accordance with Section 8.72.160 of this code.

(Ord. 210 (part), 2006)

Chapter 14.12 DESIGN REVIEW BOARD AUTHORITY

Sections:

14.12.010 Design review board—Approval required.

All grading operations on (1) slopes greater than or equal to twenty (20) percent, or (2) predevelopment average slopes less than twenty-five (25) percent and equal to or greater than two hundred (200) cubic yards that require a permit shall be reviewed and approved by the design review board prior to the issuance of a permit.

(Ord. 210 (part), 2006)

14.12.020 Design review board—Consideration.

Upon determining the application complete, the design review administrator shall schedule the application for consideration by the design review board.

Notice of the design review board meeting shall be made in accordance with Section 8.72.150 of this code.

(Ord. 210 (part), 2006)

14.12.030 Design review board—Action.

On slopes less than twenty (20) percent, a permit may be granted only after a determination that the grading is:

A. Consistent with the town design guidelines;
B. Does not result in any slope of twenty (20) percent or more;
C. Consistent with the regulations and restriction of this chapter and does not require a modification;

D. Not detrimental to public safety;
E. Not detrimental to stormwater runoff; and
F. Not inconsistent with the general plan.

On slopes greater than or equal to twenty (20) percent, a permit may be granted only after a determination that the grading is:

A. Consistent with the town design guidelines;
B. Consistent with the regulations of Chapter 14.12 of this code;
C. Not detrimental to public safety;
D. Not detrimental to stormwater runoff;
E. Consistent with the requirements of Chapter 8.136 of this code.

On average slopes less than twenty-five (25) percent and greater than or equal to twenty (20) percent, a permit may be granted only after a determination that the grading is:

A. Consistent with the town design guidelines;
B. Consistent with the regulations of this chapter;
C. Not detrimental to public safety;
D. Not detrimental to stormwater runoff;
E. Consistent with the requirements of Chapter 8.136 of this code;
F. Natural contour grading;
G. Minimizes soil displacement;
H. Minimizes the use of retaining walls;
I. Not inconsistent with the general plan.

(Ord. 210 (part), 2006)

14.12.040 Design review board—Term of approval.

All permit applications approved by the design review board shall be valid for two years. The approval may be extended for an additional year by the design review administrator, if other approvals required to implement the proposed project are not obtained within one year of the design review board approval.

(Ord. 210 (part), 2006)

14.12.050 Design review board—Appeal.

Any person wishing to appeal the decision of the design review board may do so in accordance with Section 8.72.160 of this code.

(Ord. 210 (part), 2006)

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Chapter 14.16 TOWN COUNCIL AUTHORITY

Sections:

14.16.010 Town council—Direction required.

All grading operations, including, but not limited to, landslide repair or slope stabilization or grading, on predevelopment average slopes greater than or equal to twenty-five (25) percent that require a permit shall be reviewed by the planning commission and specifically directed by the town council prior to the issuance of a permit.

(Ord. 210 (part), 2006)

14.16.020 Planning commission recommendation.

Upon determining the application complete, the planning director shall schedule the application for consideration by the planning commission and the planning commission shall make a recommendation to the town council in accordance with the findings listed in Section 14.16.030 of this chapter. Notice of the planning commission and town council meetings shall be made in accordance with Section 8.72.150 of this code.

(Ord. 210 (part), 2006)

14.16.030 Town council—Direction.

On land with a predevelopment average slope greater than or equal to twenty-five (25) percent, a permit may be granted only after a determination that the grading is:

A. Consistent with the town design guidelines;
B. Consistent with the regulations and restrictions of this chapter;
C. Not detrimental to public safety;
D. Not detrimental to stormwater runoff;
E. Consistent with the requirements of Chapter 8.136 of this code;
F. Natural contour grading;
G. Minimizes soil displacement;
H. Minimizes the use of retaining walls;
I. The minimum amount of grading possible on the site; and
J. Not inconsistent with the general plan.

The direction of the town council is final.

(Ord. 210 (part), 2006)

14.16.040 Town council—Term of approval.

All permits approved by the town council shall be valid for two years, but may be extended for an additional year by the design review administrator, if other approvals required to implement the proposed project are not obtained within one year of the town council approval.

(Ord. 210 (part), 2006)

Chapter 14.20 FEES

Sections:

14.20.010 Fees—General.

Deposits and fees for the review, processing, permit issuance, and observation and testing of grading shall be established by town council resolution.

(Ord. 210 (part), 2006)

Chapter 14.24 ISSUANCE OF GRADING PERMITS

Sections:

14.24.010 Issuance of permits—Effect in general.

The issuance of a permit under this chapter authorizes only that work described or illustrated in the permit as issued. The permittee shall bear full responsibility for the performance of the work in accordance with the approved plans and specifications and any approved modifications thereof.

A permit issued under this chapter shall not relieve any person from liability, nor impose liability on the town, for damage to persons or public or private property; nor shall compliance with such permit or any conditions therein relieve any person from such liability.

(Ord. 210 (part), 2006)

14.24.011 Issuance of permits—Conditions upon issuance.

In granting any permit under this chapter, the design review administrator, design review board, town council, and/or town engineer may attach such conditions thereto as they deem reasonably necessary to safeguard life, public and private property, and to insure that the work will be carried out in an orderly manner in conformance with all regulations and without creating a public nuisance. The town engineer may add to, or change such conditions from time to time during the duration of the permit as he or she deems necessary as a result of changed conditions.

(Ord. 210 (part), 2006)

14.24.012 Issuance of permits—Final application submittal package.

After approval or conditional approval of an application by the design review administrator, design review board, or town council as appropriate, the town may issue a permit upon approval by the town engineer of the following:

A. Grading plans and specifications shall include applicable standards, notes and other conditions of approval as required by the town;
B. Geotechnical engineering report and/or engineering geology report;
C. Work schedule;
D. Erosion control plan, copies of notice of intent (NOI), stormwater pollution prevention plan (SWPPP) and/or best management plan (BMP) when required;
E. Waste material recycling plan;
F. Final application review and processing deposit;
G. Security, if required pursuant to Chapter 14.28 of this code;
H. Fees pursuant to Section 14.20.010 of this code;
I. Supplementary material required by the town including, but not limited to, evidence of neighborhood notification.

(Ord. 210 (part), 2006)

14.24.013 Issuance of permits—Town engineer review.

The town engineer shall review all plans, specifications, reports and other required data submitted by applicant. All submitted documents shall be reviewed for consistency and compliance with the requirements of this chapter and approvals by the design review administrator, design review board, or town council, as applicable. The town engineer may require applicant to modify the grading plan, SWPPP, erosion control plan and schedules ("Order to Modify").

(Ord. 210 (part), 2006)

14.24.014 Issuance of permits—Job plans.

When an application is approved and a permit issued, two sets of plans and accompanying documents shall be clearly marked as reviewed and approved and shall be returned to the applicant. One set shall be kept available for reference at the job site during grading and construction. The applicant may submit additional sets of plans and documents for notation as reviewed and approved.

(Ord. 210 (part), 2006)

14.24.015 Issuance of permits—Posting required.

The permit shall be posted securely in a conspicuous location on the site.

(Ord. 210 (part), 2006)

14.24.016 Issuance of permits—Jurisdiction of other agencies.

Permits issued under this chapter do not relieve the owner of the responsibility of securing permits or licenses that may be required from other departments or divisions of the town or other governing agencies.

(Ord. 210 (part), 2006)

14.24.017 Time limits—General.

The permittee shall complete all of the work required within the time limit specified in the permit conditions. If no time limit is specified work shall be completed within two years of the date of issuance of the permit.

(Ord. 210 (part), 2006)

14.24.018 Time limits—Extension.

Sixty (60) days before the expiration of a permit, the permittee may apply for an extension of time to complete the work. One extension may be granted by the town engineer if, in his or her judgment, the public welfare is not impaired. The extension shall be for a period the town engineer deems appropriate, but not longer than twelve (12) months. If the town has required surety bond from the permittee seeking an extension, the permittee shall file the surety's written consent to any extension of time before approval is effective. Denial of an extension shall not preclude the permittee from applying for a new permit.

(Ord. 210 (part), 2006)

14.24.030 Issuance of permits—Amended permit.

Permits may be amended as follows:

A. Minor Changes. Minor changes in the plans, grades, or extent of work shall be submitted to the town for written approval and incorporation into the permit, accompanied by any necessary fees, before any change in the approved work is begun. The town may amend the permit to approve altered plans, or may deny approval of the changes;

B. Significant Changes. Significant changes to the plans, grades, or extent of work, as determined by the town, shall require a new application.

Failure to obtain prior approval for any change in the work shall be cause for the town to order suspension of all work until approval is obtained, and may result in revocation of the permit if it deems the changes will increase the hazard to adjoining properties or public roads, or otherwise be detrimental to public welfare.

(Ord. 210 (part), 2006)

14.24.040 Issuance of permits—Assignment of permit.

A permit issued pursuant to this chapter may be assigned, provided that all of the following requirements are satisfied:

A. The permittee notifies the town of the proposed assignment;

B. The proposed assignee satisfies all of the following:

1. Submits an application pursuant to this chapter,
2. Agrees in writing to all the conditions and duties imposed by the original permit and to any modification thereof that may be required because of changes in the condition of the site or change in plans since the permit was issued,
3. Agrees in writing to assume responsibility for all work performed prior to the assignment,
4. Provides security pursuant to Chapter 14.28 of this code, and
5. Agrees to pay all applicable fees.

(Ord. 210 (part), 2006)

Chapter 14.28 SECURITY

Sections:

14.28.010 Security—Generally.

As a condition of issuing a permit, the town may require the permittee to post a surety bond and/or to provide other security in an amount determined by the town. The security shall be of sufficient amount to insure compliance with the conditions of the permit, this chapter, and to repair any damage that may result from the permitted:

A. Amount. The amount of the security shall be determined by the town after consideration of the estimated cost of the work, the possible consequences of noncompletion, particularly with respect to adjacent properties, public safety and any other relevant factors, including, but not limited to:

1. The performance of the work delineated on approved revegetation, planting or landscaping plan in an amount to be determined by the town but not less than one hundred (100) percent of the approved estimated cost of performing the work,
2. The performance of the work described and delineated in the applicant's stormwater pollution prevention plan in an amount as approved by the town as set forth in this chapter but not less than one hundred (100) percent of the approved estimated cost of performing the work,

3. The performance of the work described and delineated in the applicant's best management practices plan in an amount to be determined by the town but not less than one hundred (100) percent of the approved estimated cost of performing the work;

B. Term. The security shall remain in full force and effect until the statement of completion in accordance with Section 14.56.030 of this code has been accepted by the town;

C. Form. The security shall be in a form approved by the town.

(Ord. 210 (part), 2006)

14.28.020 Security—Notice of default.

Whenever the town engineer finds that the permittee has failed to comply with the conditions of the permit, this chapter or to repair damage resulting from the permitted grading, he or she shall give written notice thereof ("Notice of Default") separately to the permittee and surety, giving the permittee an opportunity to cure. The notice of default shall state the work to be done to achieve a safe and satisfactory condition, its estimated cost, and the period of time deemed reasonably necessary to complete the work.

(Ord. 210 (part), 2006)

14.28.030 Security—Right of entry of town engineer.

Should the required work specified in the notice of default not be cured within the time specified by the town, the town engineer or surety or any person employed or engaged on behalf of either, shall have the right to go on the site to complete the required work. If the town completes the required work, the town may deduct the cost thereof from any cash deposit or collect such amount from the surety.

No person shall interfere with, obstruct, hinder, or prevent the ingress or egress to or from any such premises by which an authorized representative, or agent of any surety, or of the town is engaged in completing the work required under the permit, checking on compliance of the work with the terms or conditions of the permit and the provisions of this chapter, or taking emergency actions for the protection of the public and abutting properties.

(Ord. 210 (part), 2006)

14.28.040 Security—Noncompliance.

The security shall be conditioned on the faithful performance of the work under the permit and the immediate abatement of any hazardous conditions. Failure of the permittee to abate such hazard(s) shall be considered noncompliance in accordance with Chapter 14.52 of this code.

(Ord. 210 (part), 2006)

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Chapter 14.32 OBSERVATION AND MONITORING

Sections:

14.32.010 Observation and monitoring—General.

Town representatives may enter the site at any time to observe its condition and the methods of operation, review any design modifications proposed during grading; review all record drawings and to check or test any feature or operation involved in fulfilling the conditions of the permit.

(Ord. 210 (part), 2006)

14.32.020 Observation and monitoring—Standard grading requirements.

The town representative shall observe the work at the following stages and shall review the portion then completed and shall notify the permittee or his or her agent wherein it fails to comply with the requirements of this chapter:

A. Initial. When the project area has been cleared of vegetation in accordance with the plans;

B. Rough Grading. When rough grading has been completed and approximate final elevations have been established; drainage terraces, swales and other drainage devices have been graded and are ready for paving; and berms installed at the top of slopes;

C. Final. When work has been completed, all drainage devices, systems and facilities installed, and stormwater control measures implemented.

Failure to allow the town representative to observe the work may result in suspension of the permit as provided for in Section 14.41.030 of this code. In addition to the observations specified above, the town may observe the site at any time.

(Ord. 210 (part), 2006)

14.32.030 Observation and testing—Supervised grading requirements.

In addition to the requirements of Section 14.44.020 of this code, when the town determines that the work shall be designated supervised grading, the work shall adhere to the following requirements:

A. It shall be the responsibility of the permittee's civil engineer to provide periodic surveying during the grading operations to ensure compliance with the approved plans;

B. It shall be the responsibility of the permittee's geotechnical engineer or engineering geologist, to observe the operations and provide qualified observation and testing services to assure compliance of the work with the approved plans and the requirements of this chapter. Should the geotechnical engineer or engineering

geologist determine that adverse conditions exist on the site, the appropriate remedial measures shall be implemented. The proposed remedial measure shall be submitted to the town's geotechnical engineer or geological consultant for review and comment.

C. Progress reports may be required to be submitted regularly to the town for review describing the work to date.

(Ord. 210 (part), 2006)

Chapter 14.36 PERMITTEE DUTIES

Sections:

14.36.010 Permittee duties—General.

Permittee shall adhere to the requirements of this chapter.

(Ord. 210 (part), 2006)

14.36.020 Permittee duties—Required notifications.

Unless this requirement is waived by the town, permittee shall notify the town in writing seventy-two (72) hours prior to:

A. The beginning of the permitted activity;

B. The completion of rough grading;

C. The completion of finished grading;

D. The installation of all erosion control devices and the completion of planting requirements;

E. Readiness of the site for final observation and testing, including, but not limited to, finished grading, installation of drainage devices and final Erosion control measures.

(Ord. 210 (part), 2006)

14.36.030 Permittee duties—Reporting requirements.

Permittee shall notify the town if:

1. There are delays in implementing the approved plans as scheduled;

2. There are any archeological or skeletal remains discovered;

3. The work is not being done in conformance with the approved plans;
4. There are any departures from the approved plan, including unanticipated slope destabilization either within or outside of the approved grading envelope;
5. There are any delays in the implementation of the SWPPP and/or BMP plan.

(Ord. 210 (part), 2006)

14.36.040 Permittee duties—Meetings.

Prior to starting work, or project mobilization, when deemed appropriate by the town, the permittee, geotechnical engineer and civil engineer shall attend an on-site meeting with the town's representative. In addition, the permittee shall attend any meeting required by the town.

(Ord. 210 (part), 2006)

14.36.050 Permittee duties—Notification of noncompliance.

If the project engineering geologist, geotechnical engineer or civil engineer finds that the work is not in conformance with this chapter or with the plans approved by the town, or with good accepted practices, he or she shall immediately notify the permittee and the town in writing of the nonconformity and of the corrective measures to be taken.

(Ord. 210 (part), 2006)

14.36.060 Permittee duties—Notification of termination of consultant services.

If the engineering geologist, geotechnical engineer or civil engineer is relieved of, or otherwise terminates his or her duties prior to completion of the work, he or she shall report the fact in writing to the town within forty-eight (48) hours with a progress report on the status of the work.

(Ord. 210 (part), 2006)

14.36.070 Permittee duties—Notification of cessation of work.

If the permittee ceases work for any reason before the work is completed, he or she shall take all necessary steps to leave the premises in a condition that will be safe and will not cause on- or off-site damage.

(Ord. 210 (part), 2006)

Chapter 14.40 NONCOMPLIANCE

Sections:

14.40.010 Noncompliance—General.

If the town determines that the work is not being performed in conformance with the approved permit and plans, it shall apply the procedures set forth in this section before taking any other enforcement actions set forth in this chapter.

(Ord. 210 (part), 2006)

14.40.020 Noncompliance—Notice to stop work.

On issuance of a written notice to cease work ("Stop Work Order"), the permittee shall immediately cause all grading and hauling connected therewith to cease until written permission is received from the town engineer allowing the permittee to proceed after correcting the objectionable conditions or operations to eliminate the hazard or encroachment and to prevent recurrence of the situation.

(Ord. 210 (part), 2006)

14.40.030 Noncompliance—Suspension of permit.

A. The town may suspend the permit and issue a stop work order, pursuant to Section 14.40.020 of this chapter in any of the following circumstances:
   1. The town determines that the permit was issued in error, or on the basis of incorrect information supplied by applicant, or in violation of any provisions of this chapter, or other ordinance or regulation;
   2. Permittee fails to submit reports when required under Chapter 14.48
   3. Permittee bars the town staff from entering the site;
   4. Observation and testing by the town reveals that the work or the work site:
      a. Is not in conformity with the grading plan, interim or final plan, or other condition(s) of approval as approved or as modified pursuant to this chapter, or
      b. Is not in compliance with an order to modify pursuant to this chapter;
   5. Permittee fails to comply with an order to modify within the time limits imposed by the town;
   6. Permittee fails to obtain permission for wet season activity pursuant to this chapter;
   7. The town finds that conditions at the site vary appreciably from those shown and stated in the application and plans;
   8. Cessation of work before completion has left the site in a condition hazardous to the public or to the adjacent properties, and the permittee has not complied with reasonable requirements for completion of the work within the time specified in the permit or an approved extension thereof;
   9. The permittee does not comply with reasonable requirements to safeguard the workmen, the public, or other persons acting in a lawful manner, during grading or construction activities;
   10. In transporting materials or equipment, or in the operation of equipment the permittee allows materials or litter to encroach, obstruct, or be deposited on pavement, or in

drainage channels, on private property not under the control of the permittee and covered under a lawful permit, or causes unauthorized obstruction or diversion of drainage channels; or

11. Permittee fails to have a qualified inspector, when required, working under the geotechnical engineer on the site during grading.

B. When a permit is suspended the permittee shall be given written notice containing the findings of violation and stop work order. Upon suspension of the permit, the town may seize the permit and/or make appropriate notations on it of the suspension on the permit. Upon further written order of the town, any suspended permit may be either revoked pursuant to Section 14.40.050 of this chapter or reinstated. The town shall reinstate a suspended permit upon permittee's correction of the cause of the suspension.

(Ord. 210 (part), 2006)

14.40.050 Noncompliance—Hearing for revocation.

A grading permit may be revoked, pursuant to a hearing, for any of the circumstances listed in Section 14.40.030 if, in the opinion of the town engineer, the situation is sufficiently serious and the permittee is not making progress in, or is refusing to, remedy the problem. The town engineer shall hold a hearing on the proposed revocation of a permit. Written notice of the time and place of such hearing shall be served upon the permittee five days prior to the date set for such hearing. Such notice shall also contain a statement of the grounds for revoking the permit. Notice may be given either by personal delivery thereof to the person to be notified, or by deposit in the United States mail in a sealed envelop with postage prepaid, addressed to the person(s) to be notified at the address(es) appearing in the application. In the event an appeal is made regarding the decision of the town engineer, all work shall be stopped while the appeal is pending.

In the event of revocation, the town shall have the right to use the bond proceeds to remedy the problem. Resumption of the work will be subject to a new grading permit application.

(Ord. 210 (part), 2006)

14.40.060 Noncompliance—Appeal.

In the event the town engineer makes the determination to revoke the permit, the permittee may appeal such determination to the town manager or his or her designee. Such an appeal shall be made in writing and shall state in clear and concise language, the grounds therefore and shall be filed with the town engineer within ten (10) days of the date of the town engineer's determination.

The town manager may make such modifications in the requirements of these provisions as may grant such waivers or modifications of the determinations which are appealed to him or her as he or she shall determine and are warranted to prevent any unreasonable hardship under the facts of each case, provided that such modifications or waiver is in conformity with the general intent of the requirements of this chapter.

(Ord. 210 (part), 2006)

14.40.070 Noncompliance—Nuisance abatement.

In addition to any other legal remedies, any violation of this chapter, a permit or stop work order shall be considered a nuisance and be abated pursuant to Chapter 7.16 of this code.

(Ord. 210 (part), 2006)

14.40.080 Noncompliance—Cumulative enforcement procedures.

The procedures for enforcement as set forth in this chapter are cumulative and not exclusive.

(Ord. 210 (part), 2006)

Chapter 14.44 COMPLETION OF WORK

Sections:

14.44.010 Completion of work—Post-grading procedures.

Upon completion of the grading and the installation of permanent improvements, where such permanent improvements are planned at the time grading is performed, permittee shall submit:

A. A maintenance plan and schedule for all drainage facilities, including inlets, outlets, cleanouts and access ports. The maintenance plan and schedule is subject to review and approval by the town;

B. Executed contract(s) or other approved evidence for the perpetual maintenance and upkeep of stormwater pollution prevention measures;

C. The following reports and drawings prior to the issuance of certificate of completion:

1. An as-graded plan prepared by the civil engineer of record, that includes the original ground surface elevations, as-graded ground surface elevations, lot drainage patterns, locations of any keyways, slide repair areas, and "as-constructed" locations and elevations of all surface and subsurface drainage facilities. The engineer of record shall provide certification that the work was done in accordance with the final approved grading plan. The project geotechnical engineer or certified engineering geologist shall also sign the plan indicating that the work was performed in accordance with the recommendations contained in the projects geotechnical and/or geological reports and subsequent approved revisions,
2. A "Building Pad Certification" drawing or set of drawings prepared by the civil engineer of record indicating that all building pads are located horizontally and vertically in accordance with the approved grading plans,
3. A final grading report prepared by the geotechnical engineer or certified engineering geologist, that includes locations and elevations of field density tests, summaries of field and laboratory tests and other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the geotechnical report and/or geologic report. The geotechnical engineer or certified

engineering geologist shall provide an opinion as to the adequacy of the site for the intended use,

4. A final report by the civil engineer of record certifying that all grading, lot drainage and drainage facilities have been completed and the slope planting installed in conformance with the approved plans and the requirements of this chapter,

5. A final engineering geology report based on the final contour map including specific approval of the grading as affected by geological factors. The report shall include a revised geologic map and cross-sections, with recommendations regarding the location of buildings or sewage disposal systems;

D. At the discretion of the town, geologic grading report prepared by the engineering geologist including a final description of the geology of the site including any new information disclosed during the grading and the effect of it on recommendations incorporated in the approved grading plan. He or she shall provide an opinion as to the adequacy of the site for the intended use as affected by geologic factors. The geologic report may be incorporated into the final grading report.

(Ord. 210 (part), 2006)

14.44.020 Completion of work—Maintenance guaranty.

Prior to issuance of a certificate of completion the town may require the permittee to submit a one year guaranty bond in an amount determined by the town. This is to ensure adequate maintenance of the site as set forth in Section 14.44.010 of this chapter.

(Ord. 210 (part), 2006)

14.44.030 Completion of work—Certificate of completion.

The town shall issue a certificate of completion upon satisfactory completion of work under an approved permit.

(Ord. 210 (part), 2006)

Moraga, California, Code of Ordinances >> - SUPPLEMENT HISTORY TABLE >> Title 14 - GRADING >> Chapter 14.48 REGULATIONS >>

Chapter 14.48 REGULATIONS

Sections:

14.48.010 Excavations—General.

Unless otherwise recommended in the approved geotechnical engineering or engineering geologic report and approved by the town, excavations and cut slopes shall conform to the provisions of this section. These regulations apply to all grading whether or not a permit is required. All grading should be balanced on site.

(Ord. 210 (part), 2006)

14.48.011 Excavations—Maximum gradient.

Cuts slopes shall not be steeper than three horizontal to one vertical, except in conform areas where natural slopes are greater. Where steeper slopes are unavoidable, the applicant shall furnish geotechnical engineering or an engineering geology report, or both, certifying that the site has been evaluated and giving an opinion that a cut at a steeper slope will be stable and not create a hazard to public or private property. The town engineer, or geotechnical engineering or geologic consultant may require the excavation slope face be made flatter than three horizontal to one vertical if he or she finds it necessary for stability and safety.

(Ord. 210 (part), 2006)

14.48.012 Excavations—Drainage terraces.

Cut slopes exceeding thirty (30) feet in vertical height shall have drainage terraces not less than eight feet in width, at vertical intervals not exceeding twenty-five (25) feet, except where only one such terrace is required, it shall be located at mid-height. For cut slopes exceeding sixty (60) feet in vertical height, the drainage terrace near mid-height shall be not less than twelve (12) feet in width. Design and construction of drainage terraces shall conform to the requirements of Sections 14.20.060(E) through (G) of this code. Other drainage methods may be approved by the town as appropriate. Suitable access shall be provided to the drainage terraces to permit proper cleaning and maintenance

(Ord. 210 (part), 2006)

14.48.013 Excavations—Conformance to existing terrain.

Cut slopes shall be rounded off at the top and toe and shall be contour graded to achieve a natural appearance and to blend and conform to existing terrain.

(Ord. 210 (part), 2006)

14.48.014 Excavations—Setbacks.

Cut slopes shall be set back from property lines and structures as far as necessary to provide for safety of adjacent property, safety of pedestrians and vehicular traffic, required slope rounding, adequate foundation support, required swales, berms and drainage facilities.

Except where special foundation design has been approved by the town, setbacks for structures shall meet the following requirements:

A. Excavations shall be set back from property lines or project boundaries a minimum distance equal to one-fifth the height of the slope. In any circumstance, the minimum distance will be three feet and the maximum will be ten (10) feet.

B. Excavations shall be set back from existing structures:

1. In accordance with subsection A of this section; or

2. If required by the town, permittee shall provide an investigation and report by a geotechnical engineer or certified engineering geologist recommending a setback that demonstrate adherence to the intent of the section. The report is subject to the review and approval by the town.

(Ord. 210 (part), 2006)

14.48.020 Fills—General.

Unless otherwise recommended in the approved geotechnical engineering or engineering geologic report and approved by the design review board or town council, embankments, fills and fill slopes shall conform to the provisions of this section.

(Ord. 210 (part), 2006)

14.48.021 Fills—Gradient.

Fill slopes shall not be steeper than three horizontal to one vertical, except in conform areas where natural slopes are greater. Where steeper slopes are unavoidable, the applicant shall furnish geotechnical engineering or an engineering geology report, or both, certifying that the site has been evaluated and giving an opinion that a fill at a steeper slope will be stable and not create a hazard to public or private property. The town engineer, or geotechnical engineering or geologic consultant may require the fill slope face be made flatter than three horizontal to one vertical if he or she finds it necessary for stability, safety and aesthetics.

Slopes not compacted in accordance with this chapter shall not exceed five horizontal to one vertical.

(Ord. 210 (part), 2006)

14.48.022 Fills—Preparation of ground.

Existing ground surfaces to receive fill material, unless more restrictive recommendations are contained in the geotechnical engineering or engineering geologic report(s), shall:

A. Be prepared to receive fill by removing vegetation, noncomplying topsoil and other unsuitable materials;

B. Scarifying to a depth of eight inches to provide a bond with the new fill;

C. Where slopes are steeper than five vertical to one horizontal and the height is greater than three feet:

1. By benching into competent bedrock and/or other competent soil as determined by the project geotechnical engineer or certified engineering geologist,
2. The bench under the toe of a fill slope steeper than five horizontal to one vertical shall be at least ten (10) feet wide;

D. Fill Slopes shall be tapered into the existing terrain at the toe and shall be rounded off at the top;

E. Fills shall not toe out on slopes steeper than three horizontal to one vertical. A stability analysis shall be performed by the geotechnical engineer or certified engineering geologist to evaluate the global stability of the slope.

(Ord. 210 (part), 2006)

14.48.023 Fills—Compaction.

Except as provided in this chapter, all fills shall be compacted throughout their full extent to a minimum of ninety (90) percent relative compaction. Field density shall be determined by the American Society for Testing and Materials (ASTM) D1557 (latest version) test method.

A. Fills to support roadways shall be compacted to a minimum relative density of ninety (90) percent relative compaction for the width of the traveled way plus three feet on each side thereof.

B. Fills not intended to support structures, or streets need not be compacted to these standards if either the town's geotechnical engineering or geologic consultant determines that such compaction is unnecessary as a safety measure. In making this determination, the town's geotechnical engineering or engineering geologic consultant may require that an investigation be made to establish the characteristics of the soil, the amount of settlement to be expected and the suitability of the material for its intended purpose.

(Ord. 210 (part), 2006)

14.48.024 Fills—Material.

No organic or other reducible material shall be incorporated in fills, except as recommended by the geotechnical engineer or engineering geologist and approved by the town. No rock or similar irreducible material with a maximum dimension greater than six inches shall be buried or placed within forty-eight (48) inches of finished grade where practical.

(Ord. 210 (part), 2006)

14.48.025 Fills—Drainage terraces.

Fill slopes exceeding thirty (30) feet in vertical height shall have drainage terraces not less than eight feet in width, at vertical intervals not exceeding twenty-five (25) feet except that where only one such terrace is required, it shall be located at mid-height. For fill slopes exceeding sixty (60) feet in vertical height, the drainage terrace near mid-height shall be not less than twelve (12) feet in width. Design and construction of drainage terraces shall conform to the requirements of Sections 14.20.060 (E) through (G) of this code. Suitable access shall be provided to the drainage terraces to permit proper cleaning and maintenance.

(Ord. 210 (part), 2006)

14.48.026 Fills—Conformance to existing terrain.

Fill slopes shall be tapered into the existing terrain at the toe and shall be rounded off at the top.

(Ord. 210 (part), 2006)

14.48.027 Fills—Slope location and setbacks.

Fill slopes shall be set back from property lines, watercourses and structures as follows:

A. The property line of any proposed or existing site or parcel located within the grading project shall be located a minimum of one foot from the top of the slope;

B. Fill slopes shall be set back a minimum of three feet plus one-fifth the vertical height of the slope from the property line with a maximum of twenty (20) feet;

C. Buildings and structures shall be set back from the toe or the top of fill slopes a minimum of four feet plus one-fifth the vertical height of the slope, with a maximum of twenty (20) feet;

D. When fill slopes are located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated in the work as the town engineer deems necessary to protect the adjoining property from damage as a result of such grading. The precautions may include, but not be limited to:

1. Additional setbacks,
2. Provisions for retaining or slough walls,
3. Mechanical or chemical treatment of the fill slopes surface to minimize erosion, and
4. Provisions for the control of surface waters;

E. Fills shall be set back from property lines or project boundaries a minimum distance equal to one-half the height of the slope. In any circumstance, the minimum distance will be three feet and the maximum will be twenty (20) feet;

F. Structures shall be set back from fill slopes:

1. A minimum distance equal to one-half the height of the slope. In any circumstance, the minimum distance will be four feet and the maximum will be twenty (20) feet;
2. If required by an investigation and report by a geotechnical engineer or certified engineering geologist recommending a setback that demonstrate adherence to the intent of the section. The report is subject to the review and approval by the town.

(Ord. 210 (part), 2006)

14.48.029 Fills—Evaluation of existing fill.

The town may require the submission of a geotechnical report before issuing a building permit for a structure to be placed on any existing fill or embankment or be excepted from the requirement for a permit, or on any other lot or parcel on which critically expansive soils, slide conditions, or other geotechnical or geologic hazard exist or may reasonably be anticipated to exist. If the town determines that the action recommended in this report is likely to prevent structural damage to the proposed structure, the town shall approve the report and the recommended action contained in the report shall become a part of the required construction as a condition of the permit.

(Ord. 210 (part), 2006)

14.48.030 Modifications.

Modifications from the regulations of this chapter may be allowed by the design review board or the town council, if recommended by the town engineer and if determined to provide equivalent safety, stability, and protection against erosion. The applicant must demonstrate equivalency in a report prepared by a geotechnical engineer or certified engineering geologist with the concurrence of the town.

(Ord. 210 (part), 2006)

Chapter 14.52 STORMWATER MANAGEMENT

Sections:

14.52.010 Stormwater management—General.

All active and passive construction projects shall have a BMP plan (engineered drawing) and stormwater control measures in compliance with Section 13.04.090 of this code. This code requires a stormwater pollution prevention plan (SWPPP) that meet either the requirements of the requirements of the town of Moraga and the state general construction permit. A stormwater control plan shall also be submitted in compliance with Section 13.04.050 of this code. For sites that do not meet the threshold of Section 13.04.050, a stormwater control plan that incorporates best management practices for site design, source control and treatment control shall be submitted that complies with the requirements of the town of Moraga design guidelines and the town of Moraga engineering standard details.

The only BMP's that may be altered are those in direct conflict with the daily construction activity, as long as the BMP's are restored at the end of the day's construction activity or the start of a storm event, whichever occurs first.

The permittee shall comply with all best management practices and any rules, regulations, standards, ordinances, laws, permits and policies established and or issued by the Federal Environmental Protection Agency, California Water Quality Control Board, and other regional, state, and federal regulatory agencies as applicable.

Construction stormwater control measures shall include, but not be limited to, the following:

A. The faces of cut and fill slopes shall be protected against damage by erosion and the methods utilized for each protection must offer effective erosion control prior to the initiation of, as well as during, the wet season; and

B.

Where graded slopes are steeper than five to one or higher than five feet, they shall be protected with a temporary soil stabilization measure such as jute matting or an equivalent mulch until planting is established.

The following documents shall be used as guides for the design and suitability of stormwater control measures and are available in the planning department offices:

A. Association of Bay Area Governments (ABAG) Manual of Standards for Erosion and Sediment Control Measures;

B. California Stormwater Quality Association Best Management Practices Handbook;

C. The Erosion and Sediment Control Field Manual preparedly the regional water quality control board (RWQCB), San Francisco Bay region;

D. Bay Area Stormwater Management Agencies Association "Start at the Source."

(Ord. 210 (part), 2006)

Chapter 14.56 DEFINITIONS

Sections:

14.56.010 Definitions.

As used in this chapter, the following words and phrases have the meanings set forth in this section unless otherwise required by the context.

"Applicant" means the property owner, and/or his or her authorized agents and employees, who apply for a permit pursuant to this chapter.

"Artificial fill" means soil, rock, or other similar irreducible materials placed by man using mechanical means and shall include the condition resulting therefrom.

"As graded" means the surface conditions existing at the completion of grading.

"Average slope" means average percent slope "S" is computed on net area of a parcel by the following formula:

S	=	0.002296 I L
		A

or

S	=	100 I L
		a

Where:

S = average percent slope;

I = contour interval in feet;

L = summation of length of all contours in feet;

A = area in acres of parcel being considered;

a = area in square feet of parcel being considered;

"Balanced on-site" means that cut and fill amounts on a site are equal, requiring no import or export of materials.

"Bedrock" means the relatively solid, undisturbed rock in place either at the ground surface or beneath superficial deposits of gravel, sand or soil.

"Bench" means a relatively level step excavated into earth material on which fill is to be placed or within a cut or fill slope.

"Best management practices (BMP)" means structural devices, measures, stormwater management facilities or activities that help to meet development runoff requirements at the premises. Also referred to as "BMP." BMP also include schedules of activities, prohibitions or practices, general good housekeeping, pollution prevention practices, maintenance procedures, and other management practices, to prevent or reduce the discharge of pollutants directly or indirectly to watercourses, water bodies and wetlands.

"Best management practices plan (BMP plan)" means a drawing that sufficiently depicts proposed BMP measures and techniques which are designed to control pollutants due to grading related runoff, erosion and sedimentation.

"Borrow" means earth material acquired from an off-site location for use in grading on a site.

"Building pad" means a relatively level area of a lot, parcel or site, which will be occupied by a building, structure or other improvement.

"Certification" means a written engineering or geologic opinion concerning the status and/or completion of the work.

"Chapter" means the ordinance codified in this chapter in its entirety.

"Civil engineer" means a professional engineer in the branch of civil engineering and duly licensed by the state of California.

"Civil engineering" means the application of the knowledge of the forces of nature, principles of mechanics, and the properties of materials to the evaluation, design, and construction of civil works for the beneficial uses of mankind.

"Code" means the latest adopted version including amendments thereto of the Moraga Municipal Code (MMC).

"Compaction" means the act of densifying soil and rock materials by mechanical means and the resulting densified state.

"Contour grading" means the grading of cut and fill slopes to blend with existing contours and to provide horizontal and vertical variation to eliminate the artificial appearance of slopes.

"Depth"

1. "Cut" means the vertical distance between a point on the existing natural ground and the finished elevation at that same point.
2. "Fill" means the vertical distance between a point at the base of the excavation supporting the fill and the finished elevation at that same point.

"Design guidelines" means town of Moraga design guidelines.

"Earth material" means any rock, natural soil, or fill, and/or combination thereof.

Earthwork. See "Grading."

"Encroachment permit" means a permit issued by the town of Moraga to permit temporary occupancy of, or construction in the public right-of-way.

"Engineering geologist (Geologic consultant)" means a professional geologist duly licensed by the state of California.

"Engineering geology" means the application of geologic data and principles to engineering problems dealing with naturally occurring rock and soil for the purpose of assuring that geological factors are recognized and adequately interpreted in engineering practice.

"Erosion" means the wearing away of the ground surface as a result of the movement of wind, water or ice.

"Erosion control plan" means a document that states the methods of erosion prevention and erosion control on-site during construction.

"Excavate" or "excavation" means any act by which earth material is cut into, dug, quarried, uncovered, removed, displaced or relocated and the resulting conditions.

"Exploratory excavations" means geotechnical borings, test pits, or trenches etc. which are used to observe and evaluate the subsurface conditions of a site.

Fill. See "Artificial fill."

"Geotechnical engineer" means a professional engineer who is experienced and knowledgeable in the practice of geotechnical engineering and soil mechanics, duly licensed by the state of California as a geotechnical engineer.

"Geotechnical engineering" means the application of the principles of soils mechanics in the investigation, evaluation, and design of civil works involving the use of earth materials and the observation and testing of the construction thereof.

"Grade" means the vertical elevation of the ground surface.

1. "Existing grade" means the elevation of the ground surface prior to grading;

2. "Rough grade" means the elevation at which the ground surface approximately conforms to the approved plan;
3. "Finish grade" means the final ground surface elevation of the site;
4. "Natural grade" means the vertical elevation of the ground surface prior grading.

"Grading" means the physical movement of earth material by forces other than nature including, but not limited to, excavating, filling, compacting, hauling, and related work, excluding discing.

"Hazard" means any condition or conditions, as determined by the town, that is, or has the potential to become, an immediate threat to life and limb, or endanger property, or adversely affect the safety, use, or stability of a public way, or drainage way or channel or adjacent property.

Hillside Development Permit. See Section 8.136.050 of this code.

Hillside Land. See Section 8.136.020 of this code.

"Illegal grading" means grading for which a permit is required and has not been obtained or does not comply with the regulations herein.

"Keyway" means a designed compacted fill placed in a trench excavated in earth material beneath the toe of a fill slope.

"Major changes" means changes to the approved plans that change the project by altering the configuration of the lots, or increase the number of lots, or extend the grading into areas beyond the approved limits for nongeologic or geotechnical reasons and would trigger the need for a new application.

"Minor changes" means changes to the approved plans due to unanticipated conditions discovered during grading, and might include adverse soil conditions such as soft wet soils compressible soils or a deposit old undocumented fill and would not alter the configuration of the project and would not require a new application.

"MMC" means Moraga Municipal Code.

"Notice of intent" means a document filed with the State Water Resources Control Board stating an applicant's intent to file for a general permit for discharges of stormwater associated with construction activity.

"Permit" means a valid grading permit issued pursuant to this chapter.

"Permittee" means the person or legal entity in whose name a valid permit is duly issued pursuant to this chapter and his or her agents, employees, and others acting under his or her direction.

"Plans" means maps, sketches, profiles, construction drawings and specifications, or any combination thereof as required to adequately describe the work, all as prepared by a civil engineer, all in accordance with this chapter. "Plans" shall also include grading plans, drainage plans, erosion control plans, and sedimentation control plans.

"Predevelopment average slope" means the average slope within the proposed area of disturbance and where illegal grading has not occurred.

"Runoff" means the overland flow of water.

"Security" means a corporate bond by a surety company authorized to transact business in the state, a cash deposit (or its equivalent) or an instrument of credit filed with the town from a financial institution subject to regulation by the state or federal government pledging that the funds are on deposit and guaranteed for payment upon demand.

"Sediment" means earth material deposited by water, wind or spillage.

"Site" means any area, lot or parcel of land or contiguous combination thereof, where grading or development is proposed, performed or permitted.

"Slope" means an inclined ground surface, the gradient of which is expressed as a ratio of horizontal distance to vertical distance. (H:V).

"Soil" means a naturally occurring surficial deposit of earth material overlying bedrock.

"Stop work order" means a written notice to cease work.

"Stormwater control plan" means a document that incorporates site design characteristics, landscape features, and BMPs that minimize imperviousness, retain/detain stormwater, slow runoff rates, and reduce pollutants in the post-development runoff.

"Stormwater pollution prevention plan (SWPPP)" means a document that addresses the prevention of potential stormwater pollution from construction activities.

"Supervised grading" means grading work that is performed under engineering or geologic observation and testing.

"Terrace" means a relatively level step of flat area constructed in the face of the graded slope surface for drainage and maintenance purposes.

"Town" means the designated responsible employees of the town of Moraga.

"Town engineer" means the professional engineer duly registered in the state of California appointed by the town manager or town council, to perform that function.

"Watercourse" means any channel, ditch, drainage swale, closed pipe system, whether manmade or natural that collects and transports stormwater runoff.

"Wet season" means the period between October 15 and April 15, unless extended by the town.

(Ord. 210 (part), 2006)

APPENDIX E

CHAPTER 8.52 (MOSO AND NON-MOSO OPEN SPACE)

Moraga, California, Code of Ordinances >> - SUPPLEMENT HISTORY TABLE >> Title 8 - PLANNING AND ZONING >> Chapter 8.52 MOSO AND NON-MOSO OPEN SPACE DISTRICTS >>

Chapter 8.52 MOSO AND NON-MOSO OPEN SPACE DISTRICTS

Sections:

Moraga, California, Code of Ordinances >> - SUPPLEMENT HISTORY TABLE >> Title 8 - PLANNING AND ZONING >> Chapter 8.52 - MOSO AND NON-MOSO OPEN SPACE DISTRICTS >> Article 1. Non MOSO Open Space District (Map Symbol N-OS) >>

Article 1. Non MOSO Open Space District (Map Symbol N-OS)

8.52.010 Purpose.

The purpose of this district is to identify and regulate when appropriate, lands that are in public ownership or are subject to an open space easement, development rights dedication or other enforceable restriction that regulates the use of the property from being utilized as other lands in private ownership. The district may also be used to identify and regulate residual parcels and those non-MOSO open space lands that have low development capability and are characterized by such factors as steep slopes, unstable soils, fault zones or high visibility.

(Ord. 173 § 1 (part), 1998: prior code § 8-3801)

8.52.020 Centerline or crest of ridge defined.

"Centerline" or "crest of a ridge" means the line running along the highest portion of the ridge.

(Ord. 173 § 1 (part), 1998: prior code § 8-3802)

8.52.030 Permitted uses.

Agriculture and buildings accessory thereto.

(Ord. 173 § 1 (part), 1998: prior code § 8-3803)

8.52.040 Conditional uses.

In this district, each of the following uses is permitted on the issuance of a conditional use permit:

A. Single-family residential dwelling;
B. Public or private park or nonprofit recreational facility, playground, trail and related facility;
C. Public or private school;
D. Accessory uses and structures incidental to conditional uses.

(Ord. 173 § 1 (part), 1998: prior code § 8-3804)

8.52.050 Site standards.

The precise site standards for the development of property in this district shall be prescribed at the time the reviewing authority approves the issuance of a conditional use permit. These standards shall fix the density, lot area, frontage, front, side and rear setbacks, building height and site coverage requirements. The site standards shall be based upon site constraints.

(Ord. 173 § 1 (part), 1998: prior code § 8-3805)

8.52.060 Open space density.

The densities in this district shall be as determined appropriate by the planning commission based upon site constraints of the property and in compliance with the applicable goals and policies of the general plan.

(Ord. 173 § 1 (part), 1998: prior code § 8-3806)

Article 2. MOSO Open Space District (Map Symbol OS-M)

8.52.070 Purpose.

The purpose of this district is to identify and regulate when appropriate, lands that are in public ownership or are subject to an open space easement, development rights dedication or other enforceable restriction that regulates the use of the property from being utilized as other lands in private ownership. The district may also be used to identify and regulate residual parcels and those lands that have low development capability and are characterized by such factors as steep slopes, unstable soils, fault zones or high visibility.

(Ord. 173 § 1 (part), 1998: prior code § 8-3811)

8.52.080 Definitions.

For the purpose of this district and to comply with the requirements of the voter approved initiative called the "Moraga open space ordinance," the following definitions apply:

"Centerline" or "crest of ridge" means the line running along the highest portion of a ridge.

"High risk area" means an area determined to be high risk in accordance with Part II (D) of the "Guidelines for the Interpretation and Implementation of the Moraga Open Space Ordinance - Measure A," adopted as Resolution 14-92 by the town council on February 12, 1992.

"Major ridgeline" means the centerline or crest of the ridges known as Indian Ridge, Sanders Ridge, Mulholland Hill (Mulholland Ridge), and Campolindo Ridge, where the centerline is located in lands under designated MOSO open space on the general plan diagram and zoning map.

"Minor ridgeline" means the centerline or crest of a ridge including lateral ridges, other than those identified as "major ridgelines", where the crest is eight hundred (800) feet above mean sea level and within an area designated MOSO open space on the general plan diagram and zoning map.

"MOSO open space" are lands designated MOSO open space (OS-M) in the general plan diagram and zoning map. They are referred to as "Open Space Lands" in the voter approved MOSO Initiative, included in the general plan as Exhibit A.

"Moraga open space ordinance (MOSO)" refers to Measure A, a voter-approved initiative adopted at the general municipal election held April 8, 1986.

"Slope calculation" means a methodology for calculating slope in accordance with Part II(A)(3) and II(C) of the "Guidelines for the Interpretation and Implementation of the Moraga Open Space Ordinance - Measure A," adopted as Resolution 14-92 by the Town Council on February 12,1992.

(Ord. 173 § 1 (part), 1998: prior code § 8-3812)

8.52.090 MOSO open space.

Notwithstanding any other provision of the ordinances of the town, all land within the town of Moraga designated "public open space-study" or "private open space" (hereinafter referred to as "MOSO open space") in the Moraga general plan as such plan existed on October 16, 1985, or which is designated such by the Moraga open space ordinance is zoned "MOSO open space" (OS-M).*

(Ord. 173 § 1 (part), 1998: prior code § 8-3813)

** Wording taken from Section (3)(d) of the Moraga open space ordinance.*

8.52.100 Permitted uses.

In this district, the following use is permitted provided the use is in compliance with the Moraga open space ordinance: agriculture and buildings accessory thereto.

(Ord. 173 § 1 (part), 1998: prior code § 8-3814)

8.52.110 Conditional uses.

In this district, each of the following uses is permitted on the issuance of a conditional use permit, provided such use is in compliance with the Moraga open space ordinance:

A. Single-family residential dwelling;

B. Public or private park or nonprofit recreational facility, playground, trail and related facility;

C. Public or private school;

D. Accessory uses and structures incidental to conditional uses.

(Ord. 173 § 1 (part), 1998: prior code § 8-3815)

8.52.120 Processing requirements.

In this district, the uses identified in Section 8.52.110 are permitted on the issuance of a conditional use permit. However, the following conditional use permit applications shall comply in their entirety with the processing requirements of the planned development district contained in Chapter 8.48 as may be amended:

A. A conditional use permit application for a single-family residential development which proposes a subdivision to create five or more lots; or

B. A conditional use permit application submitted concurrently with development plan requirements of the planned development district when a parcel(s) of land is partly designated MOSO open space and planned development district.

(Ord. 173 § 1 (part), 1998: prior code § 8-3816)

8.52.130 Site standards for conditional uses.

The precise site standards for the development of property in this district which requires a conditional use permit shall be prescribed at the time the reviewing authority approves the issuance of a conditional use permit. These standards shall fix the lot area, frontage, front, side and rear setbacks, building height and site coverage requirements. The site standards for all MOSO open space (OS-M) lands shall be based upon the development constraints imposed by the Moraga open space ordinance on lands within this district.

(Ord. 173 § 1 (part), 1998: prior code § 8-3817)

8.52.140 MOSO open space density.

Any development on such open space lands shall be limited to a maximum density of one dwelling unit per twenty (20), ten (10), or five acres, but in no case shall density on such lands exceed one dwelling unit per five acres.*

Areas identified as "high risk" areas, as defined in the Moraga open space ordinance (MOSO) shall be limited to a maximum density of one dwelling unit per twenty (20) acres. The town council may authorize density transfers from MOSO open space lands to other lands pursuant to the procedures set forth in Chapter 8.104; provided, that in no event shall dwelling units be transferred to MOSO open space lands or to high risk areas. In determining the appropriate density transfer credit applicable to any such MOSO open space lands, the town council may authorize the transfer of a net density of no greater than one dwelling unit per ten (10) acres.*

Development shall be prohibited on slopes with grades of twenty (20) percent or greater and on the crests of minor ridgelines. The town council shall reduce the allowable densities on slopes of less than twenty (20) percent through appropriate means such as requiring proportionally larger lot sizes or other appropriate siting limitations. For the purposes of the Moraga open space ordinance (MOSO) the term "minor ridgelines" means any ridgelines, including lateral ridges, with an elevation greater than eight hundred (800) feet above mean sea level.*

2. Development shall be prohibited on minor ridgelines immediately adjacent to and extending into MOSO open space lands if slopes exceed twenty (20) percent and elevation of the ridges is greater than eight hundred (800) feet above mean sea level.*

3. The densities in MOSO open space lands shall be as determined appropriate by the planning commission after a review of the site constraints of Section 8.52.130 above and in

compliance with the applicable goals and policies of the Moraga general plan and the requirements of the Moraga open space ordinance.

(Ord. 173 § 1 (part), 1998: prior code § 8-3818)

* *Wording taken from Section (3)(d) of the Moraga open space ordinance.*

APPENDIX F

CHAPTER 8.48 (PLANNED DEVELOPMENT DISTRICT)

Chapter 8.48 PLANNED DEVELOPMENT DISTRICT

Sections:

8.48.010 Purpose.

The council finds that applying flexible regulations to a large scale integrated development provides an opportunity for cohesive design while applying conventional regulation designed for individual lot development can result in a monotonous and stultified neighborhood. The planned development district is intended to allow diversification in the relationship of uses, building structures, lot sizes and open spaces while ensuring compliance with the general plan and the intent of this code in requiring adequate standards necessary to satisfy the requirements of the public health, safety and general welfare.

The council further finds that in order to carry out the general plan, all parcels of a size of ten (10) acres or more shall be classified to this land use designation.

(Prior code § 8-3601)

8.48.020 Uses permitted.

Except in the MOSO open space district any land use may be authorized if it is in harmony with other authorized uses and serves to fulfill the function of the planned development district while complying with the general plan.

(Ord. 173 § 2, 1998; prior code § 8-3602)

8.48.030 Size requirement.

A. Each parcel of land ten (10) acres in size or greater shall be classified planned development district.

B. A parcel of land less than ten (10) acres may be classified to a planned development district if it is of sufficient size to be planned and developed in a manner consistent with this chapter and the

purposes and intent of the general plan.

(Prior code § 8-3603)

8.48.040 Development standards for single-family residential uses in planned development district.

A. When the planned development district consists of single-family residential use, it shall be designated (depending upon the density applicable to it) either:

1. N-OS-PD;
2. 1-PD;
3. 2-PD;
4. 3-PD;
5. 6-PD.

B. Except as provided in subsection D of this section the minimum lot sizes shall be as designated on the following table:

Land Use Classification	Minimum Lot Size
N-OS-PD	40,000 sq. ft.
X-PD*	5, 10, 20 or more acres depending upon the development standards imposed under Section 8-3606
1-PD	30,000 sq. ft.
2-PD	20,000 sq. ft.
3-PD	10,000 sq. ft.
6-PD	10,000 sq. ft.**

* Any planned development districts.

** Except for condominium development as provided in Section 8.32.060(C).

C. The single-family residential development shall consist of detached structures except as follows:

1. Where the land use classification permits two dwelling units per acre or three dwelling units per acre, up to ten (10) percent of the units may be clustered in building groups of not more than three units each on lots less than ten thousand (10,000) square feet.
2. Where the land use classification permits three dwelling units per acre, the limitation in subsection (C)(1) of this section as to the percent of clustered units and the number of units in a building group may be exceeded if the development is on land contiguous to an existing commercial or multiple residential developed area and the reviewing authority finds that the design is compatible with that existing contiguous development.

D. The size of lots in a planned development district designated 1-PD or 2-PD may be varied as follows so long as the aggregate density does not exceed the total allowable density:

Lot Size	% of Total Lots
20,000 sq. ft.	45% (minimum)
15,000 sq. ft.	45% (maximum)
10,000 sq. ft.	10% (maximum)

E. Where density transfer or density bonus is not applicable, any percentage category may be

increased by no more than twenty (20) percent of the specific percentage listed above with the approval of the town so long as the total allowable lots are not increased in the aggregate.

F. Additional ten thousand (10,000) square feet or larger lots may be allowed beyond the percentages listed in the table to accommodate density transfer or a density bonus.

G. The minima for the lot width, lot depth and front, side and rear setbacks for each single-family residential parcel within a planned development district shall be the same minima for a single-family residential parcel specified in Chapter 8.28 having a corresponding minimum parcel size. However, these minima may be varied as provided in Section 8.48.060

(Ord. 173 §§ 3, 4, 1998; prior code § 8-3604)

8.48.050 Density transfer.

The density of land designated on the general plan as "public open space - study" which is zoned to the planned development district shall be determined by the use of density transfer and the planned development district process.

(Prior code § 8-3605)

8.48.060 Development standards.

A. The development standards including but not limited to area, coverage, density, building design and arrangement, setbacks, parking, circulation, access, lighting, fencing, landscaping and screening are governed by the standards of the land use district which the planning commission finds is most similar in nature and function to the use or uses proposed. These standards shall be prescribed as a part of the development plan approval process. The planning commission may vary the development standards and impose additional standards when it determines that it is desirable to do so to encourage a desirable environment, protect and maintain property values and community amenities and foster and maintain the health, safety and general welfare of the town.

B. In varying the development standards as provided in subsection A of this section, the authority to do so shall be used only so as to be consistent with the intent of the general plan to permit remaining land holdings to be developed primarily as conventional detached single-family subdivisions.

(Prior code § 8-3606)

8.48.070 Rezoning procedure and limitation on uses.

Each parcel which is greater than ten (10) acres in size shall be zoned planned development district. However, where the parcel proposed for planned development district is less than ten (10) acres in size, it may not be zoned until the planning commission approves a conceptual development plan as provided in Section 8.48.100.

After the effective date of the ordinance zoning land to the planned development district, no grading, land clearing, construction or other alteration of the property may take place until all stages of the development plan procedure are complete and such activity is in accordance with the precise development plan.

(Prior code § 8-3607)

8.48.080 Stages of development plan approval.

There are three stages of development plan approval in the planned development district:

A. Conceptual development plan;

B. General development plan;

C. Precise development plan.

(Prior code § 8-3608)

8.48.090 Conceptual development plan approval.

A. The first development stage in the planned development district procedure is approval of a conceptual development plan.

B. The applicant shall submit a proposed conceptual development plan for approval. The proposed conceptual development plan shall include the following information presented in the form of textual material and a general schematics:

1. Existing topography and anticipated grading:
2. Land uses, building intensities, residential density analysis and estimated population;
3. Circulation pattern for vehicular and pedestrian ways and its relation to public and private streets;
4. Parks, playgrounds, trails, school sites and other open spaces;
5. Conceptual drawings showing the architectural design theme proposed for the buildings;
6. Delineation of the units to be constructed in progression, if any;
7. Relation of the use to future land use in the surrounding area;
8. An analysis of the project in relation to the general plan;
9. A preliminary evaluation of the public economic costs associated with the project;
10. A preliminary evaluation of the impact on off and on-site public services and facilities.

C. Notice shall be given and the planning commission shall hold public hearings upon the conceptual development plan in the same manner followed for the zoning of the land to the planned development district. In the case of a parcel of land less than ten (10) acres, the process for conceptual development plan approval and rezoning shall be conducted together.

D. An appeal from the planning commission decision may be taken to the town council in accordance with the procedure for appeal from a planning commission decision upon an application for a conditional use permit. If no appeal is taken the decision of the planning commission is final.

(Prior code § 8-3609)

8.48.100 Findings required to approve conceptual development plan.

To approve a conceptual development plan the planning commission must find that:

A. The total development and each unit of development can exist as an independent unit capable of creating an environment of sustained desirability and stability or that adequate assurance will be provided that this objective will be attained and that the uses proposed will not be detrimental to present and potential surrounding uses;

B. The streets and thoroughfares proposed are suitable and adequate to carry anticipated traffic, and increased densities will not generate traffic in such amounts as to overload the street network outside the development;

C. Development other than single-family residential can be properly justified and is consistent with the general plan;

D. Any proposed exception from standard ordinance requirements is warranted by the design and amenities incorporated in the conceptual development plan, in accord with adopted policy of the planning commission and town council;

E. The area surrounding the development can be planned and zoned in coordination and substantial compatibility with the proposed development;

F. The development conforms with the general plan; and

G. Existing or proposed utility services will be adequate for the population densities proposed.

(Prior code § 8-3610)

8.48.110 General development plan approval.

A. The second development stage in the planned development district procedure is approval of the general development plan.

B. The applicant shall file a general development plan for approval. The general development plan shall include:

1. A sepia map with ten (10) prints of a survey of the property, including specimen trees and tree masses, structures, streets, easements, utility lines, and land use;
2. A sepia map with ten (10) prints of a general development plan in conformity with the approved conceptual plan showing the appropriate information from the conceptual development plan and the approximate location and proposed density of dwelling units, non-residential building intensity, and land use considered suitable for adjacent property;
3. A schedule for the development of units to be constructed in progression;
4. A description of the design principles for buildings and streetscapes;
5. Number of acres in the project, the percent designated for various uses, the number of dwelling units proposed by type of dwelling, estimated residential population by type of dwelling;
6. Estimated nonresidential population;
7. Economic justification for nonresidential uses;
8. Standards for height, open space, building intensity, population density, and public improvements proposed for each unit of development;
9. If appropriate, information necessary for evaluation and assignment of fire zone designations, including type of construction, building height and area, proposed distances between buildings and distances to property lines;
10. Evidence that the applicant has sufficient control over the land to carry out the proposed plan;
11. Engineering feasibility studies;
12. Any additional information or drawings which may be required by the planning commission.

C. The general development plan shall be submitted to the planning commission for approval in accordance with the procedure required for issuance of a conditional use permit. The planning commission shall approve, approve with conditions or disapprove the general development plan.

D. The application for approval of a tentative subdivision may be together with the general development plan.

E. An appeal from the planning commission decision may be taken to the town council in accordance with the procedure for appeal from a planning commission decision upon an application for a conditional use permit. If no appeal is taken the decision of the planning commission is final.

F. The general development plan may be modified by submitting an application for modification according to the same procedure required in the initial review and approval of the general development plan. An application for modification may be approved only after it has been found that it does not deviate from the intent and purpose of the district and the conceptual development plan as approved.

(Prior code § 8-3611)

8.48.120 Precise development plan approval.

A. The third development stage in the planned development district is approval of the precise development plan.

B. The applicant shall file a precise development plan with the planning director for approval. The precise development plan shall include:

1. A site plan, showing each building, functional use areas, circulation and their relationship;
2. Preliminary building plans, including floor plans and exterior elevations;
3. Landscaping plans;
4. Engineering plans, including site grading, street improvements, drainage and public utility extensions.

C. The planning director shall refer the precise development plan to the planning commission together with recommendations by any other component member of the planning agency. The planning commission shall review the precise development plan and shall approve, approve with condition or disapprove. The action of the planning commission is final unless appealed to the town council.

D. An appeal from the planning commission decision may be taken to the town council in accordance with the procedure for appeal of a planning commission decision upon an application for a conditional use permit. If no appeal is taken the decision of the planning commission is final.

(Prior code § 8-3612)

8.48.130 Additional requirements to meet purpose of district.

The reviewing body may impose such terms, conditions and requirements to the approval of each development plan as it finds necessary to carry out the purpose and intent of the planned development district, to guarantee the preservation of open space and to ensure the accomplishment at scheduled times of the public improvements.

(Prior code § 8-3613)

8.48.140 Changes in approved development plans.

Unless provision is made in the approved conceptual, general or precise development plan for change without approval by the reviewing body, a change may be made only by following the procedure required for initial review and approval. However, the planning director may make minor changes pertaining to siting which are in accord with the intent of the previously approved development plans. The planning director may refer minor changes he proposes to make to the design review board.

(Prior code § 8-3614)

8.48.150 When building permit may be issued.

A building permit for an unauthorized use in the planned development district may be issued only after the applicant has obtained approval of each stage of the development plan process and has met the other requirements of this code and state law governing the issuance of a building permit.

(Prior code § 8-3615)

APPENDIX G

CHAPTER 8.128 (RIDGELINE PROTECTION)

Chapter 8.128 RIDGELINE PROTECTION

Sections:

8.128.010 Findings and purpose.

A. The town council finds that:

1. Within the town there are hills and ridges constituting significant natural topographical features of the community;
2. The hillsides and ridgelines contain appropriate routes for equestrian and pedestrian trails which can be acquired by the town to its greatest advantage through dedications.

B. The purpose of this chapter is to:

1. Control the scarring and cutting ridgelines and steep slopes;
2. Regulate the development of ridgeline areas by imposing standards for improvements.

(Prior code § 8-5701)

8.128.020 Development on ridgelines.

A. Development shall be prohibited within five hundred (500) feet of the centerline of a major ridge (as defined in subsection B of this section) located in an area designated on the general plan as "private open space" or "public open space-study" and development shall be subject to strict design review control in all other ridge areas. A road, together with attendant underground utilities may cross a ridge, if the planning commission finds that the crossing is necessary for the orderly development of the town and does not otherwise conflict with the municipal code.

B. For the purpose of this section, the centerline of a major ridge is the line running along the highest portion of the ridge located within those areas designated on the general plan as "private open space" or "public open space-study."

(Prior code § 8-5702)

APPENDIX H

CHAPTER 8.136 (SLOPE DENSITY)

Chapter 8.136 SLOPE DENSITY

Sections:

8.136.010 Findings and declarations of intent.

A. The town council finds that:

1. It is desirable to require in hill areas an alternative approach to traditional and conventional flat land practices of residential development, to minimize grading and cut and fill operations consistent with the retention of the natural character of the hill areas, to achieve land use densities that preserve land values for owners but which will at the same time not adversely affect the significant natural features of the hill areas, and to preserve the predominant views both from and of the hill areas;
2. The retention of hillsides in as near a natural state as is feasible is important for the maintenance of community values.

B. The purposes of this chapter are to:

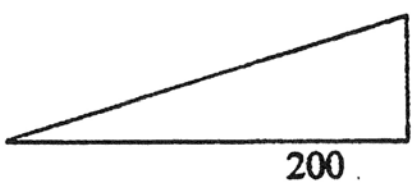
1. Maintain the suburban character and beauty of the town by preserving its open and natural topographic features;
2. Minimize soil erosion and slides and potential residual damage to life or property associated with involuntary and seismic-induced earth movement;
3. Control the scarring and cutting of hillsides;
4. Limit the development of hillsides so that the foregoing purposes are achieved;
5. Regulate the development of hillside areas by providing for the imposition of standards for streets, trails and other improvements consistent with these purposes.

(Prior code § 8-5901)

8.136.020 Definitions and calculations.

A. In this chapter:

1. "Hillside land" is land which has a slope of twenty (20) percent or greater;
2. "Percent of slope" is the vertical drop divided by the horizontal distance multiplied by 100.



$\frac{50}{200} \times 100 = 25\%;$

3. Average percent slope "S" is computed on net area of a parcel by the following formula:

$S = \frac{0.002296\ I\ L}{A}$		or $S = \frac{100\ I\ L}{a}$	

Where	S = average percent slope; I = contour interval in feet; L = summation of length of all contours in feet; A = area in acres of parcel being considered; a = area in square feet of parcel being considered.

(Prior code § 8-5902)

8.136.030 Applicability and relation to other land.

A. This chapter applies to all hillside land as defined in Section 8.136.020(A)(1).

B. Both the regulation of the land use district to which the land is classified and this chapter apply to hillside land. If there is a conflict between this chapter and the land use regulations which apply by virtue of zoning, this chapter and the regulations, requirements, and conditions imposed under authority of this chapter control.

(Prior code § 8-5903)

8.136.040 Uses of hillside land.

A. Permitted Uses. The uses permitted on hillside land are the same uses permitted in the land use district to which the land is classified.

B. Development Prohibited Without Permit. No person may grade, clear, construct upon or alter hillside land without approval granted under this chapter.

(Prior code § 8-5904)

8.136.050 Application for hillside development permit.

A. Requirement for Permit. A person who desires to erect a structure or to grade or improve hillside land must receive a hillside development permit. The application may be combined with an application for a building permit, conditional use permit, tentative subdivision map approval or other land use entitlement.

B. Application and Information. An applicant shall file an application on a form provided by the town. The applicant shall submit slope calculations and a map showing contour intervals for the parcel. The map shall be at a scale which enables the reviewing body to act upon the application.

C. Designation of Reviewing Body. The reviewing body is the authority charged with the duty of passing upon any land use entitlement. In the case of an application which requires only building permit approval, the reviewing body is the design review board. The reviewing body may refer the

application to another component unit of the planning agency for review and recommendation.

(Prior code § 8-5905)

8.136.060 Area required for lots on hillside land.

The minimum lot area shall not be less than that prescribed by the general plan. However, the required lot areas may be increased above the minimum when the reviewing body finds that it is necessary to do so because of the slope in order to assure that there will be a suitable building site for the approved type of residential building. In determining whether it is necessary to increase the lot area required above the minimum prescribed by the general plan, the reviewing body shall apply the standards set forth in Section 8.136.070. As a general rule, larger lots should be on steeper slopes and smaller lots should be on flatter land.

(Prior code § 8-5906)

8.136.070 Standards for review and approval of hillside development permit.

A. In reviewing an application the reviewing body shall consider the following factors: slope, soil instability, drainage, soil characteristics, seismic factors, existing and future residential development, view shed, access, potential traffic congestion, fire risk, noise, glare, wildlife, dust and impact on existing vegetation.

B. The site plan shall provide an appropriate living space on a site consistent with the site's constraints in relation to the review and approval criteria set forth in this section.

C. A building site which is adjacent to a steep slope not abutting a ridge shall be located at the lowest possible elevation on the site.

D. Residential development that is adjacent to a steep downslope shall be designed so that the principal and accessory structures blend with the topography.

(Prior code § 8-5907)

8.136.080 Additional development requirements.

The reviewing body may impose additional restrictions or requirements or both on a parcel of hillside land if it finds that the parcel requires protection because of its prominence and location or determines that there may be exceptional hazards to its development. These additional restrictions or requirements must be consistent with the purposes of this chapter.

(Prior code § 8-5908)

8.136.090 Dedication.

The reviewing body may require as a condition of approval the dedication of an open space easement, development rights or similar enforceable restrictions related to any open space area to be excluded from development.

(Prior code § 8-5909)

APPENDIX I

CHAPTER 8.132 (SCENIC CORRIDORS)

Chapter 8.132 SCENIC CORRIDORS

Sections:

8.132.010 Purpose.

The purpose of this chapter is to provide guidelines and approval procedures for the development and improvement of land located within major scenic corridors designated by the scenic highways element of the general plan.

(Prior code § 8-5801)

8.132.020 Area subject to regulations.

A. Land located within five hundred (500) feet of a major scenic corridor as designated in the general plan is subject to the regulations set forth in this chapter.

B. The following routes and corridors are designated in the general plan as major scenic corridors:

1. St. Mary's Road;
2. Canyon Road;
3. Moraga Way;
4. Moraga Road;
5. Rheem Boulevard;
6. Camino Pablo;
7. Bollinger Canyon Road;
8. Donald Drive (along ridgeline of Mulholland Hill).

(Prior code § 8-5802)

8.132.030 Additional requirements.

The requirements of this chapter are imposed in addition to other rules and regulations of the municipal code.

(Prior code § 8-5803)

8.132.040 Structures and features subject to regulation.

A. The following structures and features in areas described in Section 8.132.020 are subject to regulation under this chapter by the design review board:
   1. A building;
   2. Exterior addition to an existing building;
   3. A wall, fence or tower three feet or more in height above existing ground or above finish grade after grading;
   4. A sign;
   5. Traffic signs and signals;
   6. Public utility installations as described in Section 8.72.180
   7. Landscaping which covers an area of two acres or more or landscaping as referred by the town planner; and
   8. Any other prominent objects such as sculptures and sculptural elements.

B. Exceptions to the requirements of subsection A of this section may be granted by the zoning administrator for the following:
   1. A real estate sign which conforms to the town sign regulations and which is installed temporarily for the sale or lease of a property;
   2. A building, exterior addition, wall fence or sign which is not visible from the roadway of a scenic corridor;
   3. Temporary special event or promotional signs as may be permitted under Section 8.88.240
   4. A sign defined as an exempt sign under Moraga Municipal Code Section 8.88.160
   5. A sign that is determined by the design review administrator to conform to the design guidelines adopted by the planning commission.

(Ord. 201 § 1, 2004; prior code § 8-5804)

8.132.050 Development guidelines.

A. The objective of this chapter is to develop corridor aesthetics in keeping with those of a residential community.

B. Development or improvements within a major scenic corridor and subject to regulation under Section 8.132.040 shall comply with the following guidelines:
   1. The design and location of each building and landscaping shall create a compatible visual relationship with surrounding development and with the natural terrain and vegetation. Road widths and road configurations should be considered as part of the design element.
   2. Buildings and landscaping shall be so located that each does not create a walled effect along the scenic corridor. Setbacks and building heights may be made more restrictive than otherwise permitted by the applicable zoning regulations. In general, the greater the mass or bulk, the greater the setback should be. The positioning of buildings shall be varied in order to create a complimentary relationship between mass and void.
   3. Existing topography, vegetation and scenic features of the site shall be retained and incorporated into the proposed development wherever possible. Manmade structures, as a visual element in the scenic corridor, should be secondary in importance to natural growth.
   4. Each structure or feature reviewable under this chapter shall be limited to scale and siting to reduce visual dominance or obstruction of existing landforms, vegetation, water bodies and adjoining structures.
   5. Each structure shall be constructed, painted and maintained and all planted material shall be planted and maintained to complement and enhance scenic views and the natural landscape.
   6. Unnatural and conflicting aesthetic elements shall be eliminated to the extent feasible consistent with safety requirements (for example, retain street lighting, but place wiring underground). Where it is not possible to locate such a feature out of view, it must be located

in an area so as to minimize visibility from a scenic corridor or screened from view by planting, fence wall or berm. Where the screen consists of a fence, wall or berm, it may not be higher than six feet. Screening shall consist of primarily natural materials rather than solid fencing. Preference shall be given vegetation in conjunction with a low earth berm.

7. Lighting shall be compatible in type, style and intensity to the surrounding elements and not cause undue or aggravating disruption, glare a brightness.
8. Grading or earth-moving shall be planned and executed in such manner that final contours appear consistent with a natural appearing terrain. Finished contours shall be planted with plant materials native to the area so that minimum care is required and the material is visually compatible with the existing ground cover.
9. The number of access points to and from the scenic corridor shall be minimized consistent with safety and circulation needs.
10. Parking on the scenic corridor roadways should be minimized.
11. Each specimen tree and each grove of trees may be approved for removal only if the tree or grove of trees is unsafe or diseased or to provide the smallest cleared area necessary to locate an approved road or structure on the site under guidelines of the tree preservation ordinance. Selective clearing of vegetation may be permitted upon review and approval by the design review board.
12. In applying these guidelines, consideration shall be given to protecting the privacy and security requirements of individual property owners who seek approval for improvements under this chapter.

(Prior code § 8-5805)

8.132.060 Adoption of specific standards.

The design review board may adopt specific standards applicable to scenic corridors.

(Prior code § 8-5806)

8.132.070 Approval procedures for property less than ten acres.

The procedures in this section apply to owners or developers of property less than ten (10) acres in size.

Before a structure or feature under subsection 8.132.040(A) is constructed or installed, the applicant shall submit a plan or detailed description of the proposed structure or feature to the design review board. The design review board shall review the proposed improvement and shall: (1) approve; (2) disapprove; or (3) approve with conditions. The applicant may proceed with the improvements, subject to complying with all other permit requirements, obtaining approval or by complying with conditions of approval.

(Prior code § 8-5807)

8.132.080 Approval procedure for property ten acres or more.

The procedures in this section apply to owners or developers of property which is ten (10) acres or more in size.

An applicant proposing to develop property within a major scenic corridor shall file and receive approval of a conceptual development plan in accordance with the procedure set forth in Sections 8.48.080 and 8.48.090.

The approval process under this chapter may be undertaken concurrently with approval under Chapter 8.48.

(Prior code § 8-5808)

8.132.090 Findings and appeal.

A. Findings. If the board denies approval under this chapter, it shall make written findings and provide a copy to the applicant within ten (10) days of the decision.

B. Right to Appeal. A decision of the design review board may be appealed to the planning commission. The action of the planning commission may be appealed to the town council.

C. Time and Place for Filing Appeal. A person desiring to appeal an action taken under this chapter shall do so by filing written notice of appeal with the town within ten (10) days after the decision. If no appeal is filed, the decision on the application is final.

(Prior code § 8-5809)

APPENDIX J

RELEVANT GENERAL PLAN POLICIES AND DEFINITIONS AND RELEVANT DESIGN GUIDELINES

Relevant General Plan Policies and Definitions and Relevant Design Guidelines

The following General Plan and Design Guidelines content addresses hillside development and conservation in Moraga. Several of the policies related to hillside development were inserted into the General Plan based on adoption of the MOSO Initiative, and are verbatim from the language of the initiative. Such policies are indicated with an asterisk, below.

Guiding Principle 1: Preserve the Town's natural setting and environmental resources, including its undeveloped ridgelines and significant open space areas.

Land Use

LU1.5 **Development Densities in Open Space Lands.** Notwithstanding any other provision of the General Plan, any development on lands depicted on the General Plan Diagram or by the Moraga Open Space Ordinance as "Public Open Space-Study" or "Private Open Space" (now designated as MOSO Open Space in the General Plan Diagram) shall be limited to a maximum density of one (1) dwelling unit per twenty (20), ten (10), or five (5) acres, but in no case shall density on such lands exceed one (1) dwelling unit per five (5) acres. Areas identified as "high risk" areas, as defined by the Moraga Open Space Ordinance, shall be limited to a maximum density of one (1) dwelling per twenty (20) acres.[1]

LU1.6 **Minimum Lot Sizes and Percentage Mix for Single Family Developments.** Use the following table to establish minimum lot sizes for single family developments. The permitted mix of lot sizes may differ from the percentages indicated, provided the aggregate number of lots proposed does not exceed 100 percent of Theoretical Residential Holding Capacity, as initially calculated. Developments in areas designated Residential – 6 DUA should refer to Policy LU1.7.

[….Table and non-applicable text omitted….]

e) "Non-MOSO Open Space or MOSO Open Space" on the General Plan Diagram may be less than 40,000 sq. ft., but not less than 15,000 sq. ft., when part of the overall project will provide outdoor recreational facilities with guaranteed permanent access to the general public. This policy may not be used to alter the density on lands designated MOSO Open Space.

LU1.8 **Slope Restrictions.** The soil characteristics in Moraga are prone to landslide conditions which can cause damage to property, injury to persons, public cost and inconvenience; therefore, development shall be avoided on slopes of 20 percent or steeper, but may be permitted if supported by site-specific analysis. No new residential structures may be placed on after-graded average slopes of 25 percent or steeper within the development area, except that this provision shall not apply to new residential structures on existing lots that were either legally created after March 1, 1951 or specifically approved by the Town Council after April 15, 2002. All new non-MOSO lots shall contain an appropriate development area with an average after-graded slope of less than 25%. Grading on any non-MOSO land with an average predevelopment slope of 25% or more within the proposed development area shall be prohibited unless formally approved by the Town Council where it can be supported by site-specific analysis and shown that a minimum amount of grading is proposed in the spirit of and not incompatible with all other policies of the General Plan.

[1] Wording from Section 3.c of the Moraga Open Space Ordinance. MOSO Open Space is identified as Open Space Lands in the Moraga Open Space Ordinance.

Under the terms of the Moraga Open Space Ordinance, development is prohibited on slopes greater than 20 percent in areas designated MOSO Open Space. The Zoning Ordinance, Chapter 8.52 (Open Space District) of the Moraga Municipal Code, defines the methodology for MOSO Open Space

LU1.9 **Cluster Housing to Protect Open Space**. Provide for the permanent preservation of open space by allowing clustered housing designs in areas designated MOSO Open Space or Non-MOSO Open Space or Residential on the General Plan Diagram. However, do not place cluster housing in locations that are visually prominent from the scenic corridor or where it would adversely impact existing residential areas.

LU1.12 **Residual Parcels as Open Space.** Except in MOSO Open Space, residual parcels characterized by constraints such as geologic hazards, restricted access, an established riparian habitat, an historically significant feature or visibility from a scenic corridor shall be designated Non-MOSO Open Space. Residual parcels within designated MOSO Open Space shall remain designated MOSO Open Space as required by the Moraga Open Space Ordinance.

LU5.1 **Agricultural Uses and Activities**. Allow agricultural and horticultural uses and activities on lands within the Town so long as they are low intensity and compatible with adjacent uses. Examples include small orchards and cattle grazing.

Community Design

CD1.2 Site Planning, Building Design and Landscaping. Retain natural topographic features and scenic qualities through sensitive site planning, architectural design and landscaping. Design buildings and other improvements to retain a low visual profile and provide dense landscaping to blend structures with the natural setting.

CD1.3 **View Protection**. Protect important elements of the natural setting to maintain the Town's semi-rural character. Give particular attention to viewsheds along the Town's scenic corridors, protecting ridgelines, hillside areas, mature native tree groupings, and other significant natural features. Consideration should be given to views both from within the Town and from adjacent jurisdictions. Likewise, the Town should work with adjacent jurisdictions to protect views from Moraga to adjacent areas.

CD1.4 **Canyon and Valley Areas**.Protect the scenic and environmental qualities of canyon and valley areas to retain the Town's semi-rural character. Preserve both close-up and distant views of the natural hillside landscape from valley areas, and preserve significant linear open spaces in major canyons and grassland valleys with floodplain zones as the visual focus.

CD1.5 **Ridgelines and Hillside Areas**. Protect ridgelines from development. In hillside areas, require new developments to conform to the site's natural setting, retaining the character of existing landforms preserving significant native vegetation and with respect to ridgelines, encourage location of building sites so that visual impacts are minimized. When grading land with an average slope of 20% of more, require 'natural contour' grading to minimize soil displacement and use of retainer walls. Design buildings and other improvements in accordance with the natural setting, maintaining a low profile and providing dense native landscaping to blend hillside structures with the natural setting.

CD3.1 **Designation of Scenic Corridors.** Designate the following routes as the Town's "Scenic Corridors":

a) St. Mary's Road
b) Canyon Road
c) Moraga Way
d) Moraga Road
e) Rheem Boulevard

f) Camino Pablo
g) Bollinger Canyon Road

CD4.4 New Residential Developments. Design new single family developments to create high quality pedestrian environments with pathways to adjacent neighborhoods and, where feasible, commercial areas. Ensure that the layout of new residential lots respect the site topography and natural features. Where feasible, avoid standard repetitive lot sizes and shapes in hillside areas.

Open Space and Conservation

OS1 Open Space Preservation
GOAL: Preservation of as much open space land as possible, including protection of all major and minor ridgelines

OS1.2 Major Ridgelines. Moraga's major ridgelines are highly visible throughout the Town and are included within areas designated as MOSO Open Space on the General Plan Diagram.

*OS1.3 Development Densities in Open Space Areas. Any use of or development on lands designated on the General Plan Diagram or by the Moraga Open Space Ordinance as 'Public Open Space-Study' or 'Private Open Space' (now designated as MOSO Open Space in the General Plan Diagram) shall be limited to a maximum density of one (1) dwelling unit per twenty (20), ten (10), or five (5) acres, but in no case shall density on such lands exceed one (1) dwelling unit per five (5) acres. Areas identified as 'High Risk' areas, as defined by the Moraga Open Space Ordinance, shall be limited to a maximum density of one (1) dwelling unit per twenty (20) acres. Transfers of Development Rights (referred to as 'Density Transfer' as in MOSO) from any open space designation to other lands shall be encouraged; provided that in no event shall dwelling units be transferred to another open space designation or to 'High Risk' areas. The Town Council shall identify 'High Risk' areas after taking into account soil stability, history of soil slippage, slope grade, accessibility, and drainage conditions.2

OS1.4 Private Ownership and Use of Open Space Areas. Areas designated on the General Plan Diagram as MOSO Open Space or Non-MOSO Open Space may be retained in private ownership, may be used for such purposes as are found to be compatible with the corresponding open space designation and may or may not be accessible to the general public.

OS1.5 Development on Slopes and Ridgelines in Open Space Lands. In MOSO Open Space, development shall be prohibited on slopes with grades of twenty percent (20%) or greater and on the crests of minor ridgelines. The Town Council shall reduce the allowable densities on slopes of less than twenty percent (20%) through appropriate means such as requiring proportionally larger lot sizes or other appropriate siting limitations. For the purposes of this paragraph the term 'minor ridgeline' means any ridgeline, including lateral ridges, with an elevation greater than 800 ft.

OS1.6 Transfer of Development Rights (TDRs). Encourage the transfer of development rights from Open Space lands to centrally located 'receiving areas.' In no event shall dwelling units be transferred to Open Space lands or to 'High Risk' areas, as identified by the Town Council based on soil stability, slope considerations, accessibility and drainage conditions.

OS1.8 Open Space Access and Recreational Use. Where appropriate and consistent with other General Plan goals and policies, areas with a MOSO Open Space or Non- MOSO Open Space designation on the General Plan Diagram should be made available to the public for recreational use.

2 Wording taken from Section 3.a of the Moraga Open Space Ordinance.

OS1.9 **Open Space Management.** Maintain and manage public-use open space areas in keeping with community priorities, relevant deed restrictions, budget constraints, hazard and risk considerations, and best management practices. Develop management plans for open space areas as necessary, including the Mulholland Ridge open space area.

OS1.10 **Open Space for Grazing.** Allow use of open space land for farm animals when such use does not have adverse impacts.

Public Safety

PS1.1 **Assessment of Risk.** Include an environmental assessment of natural hazard risks in development proposals to permit an adequate understanding of those risks and the possible consequent public costs in order to achieve a level of "acceptable risk." Public costs should be expressed in terms of effect on life and property.

PS1.3 **High Risk Areas.** Prohibit development in 'high risk' areas, which are defined as being (1) upon active or inactive slides, (2) within 100 feet of active slides, as defined in Figure 4 of the Safety Element Appendix, or (3) at the base of the centerline of a swale, as shown on the Town's Development Capability Map.

PS1.4 **Moderate Risk Areas.** Avoid building in 'moderate risk' areas, which are defined as being (1) those areas within 100 yards of an active or inactive landslide, as defined by the Town's Landslide Map, or (2) upon a body of colluvium, as shown in Figure 2 of the Public Safety Element background information. Where it is not possible to avoid building in such areas entirely, due to parcel size and configuration, limit development accordingly through density regulations, subdivision designs that cluster structures in the most stable portions of the subdivision, site designs that locate structures in the most stable portion of the parcel, and specific requirements for site engineering, road design, and drainage control.

PS3.12 **Hazardous Fire Areas.** Apply special fire protection standards to all new developments in hillside, open space, and wildland interface areas. Fire prevention measures such as removal of dry grass and brush, landscaping with fire and drought-resistant vegetation, provision of adequate water supplies and access for fire-fighting vehicles shall be required to reduce the risk of wildland fires. All new structures located in hazardous fire areas shall be constructed with fire resistant exterior materials consistent with applicable building codes and standards.

PS4.1 **Development in Geologic Hazard Areas.** Prohibit development in geologically hazardous areas, such as slide areas or near known fault lines, until appropriate technical evaluation of qualified independent professional geologists, soils engineers and structural engineers is completed to the Town's satisfaction. Allow development only where and to the extent that the geologic hazards have been eliminated, corrected or mitigated to acceptable levels.

PS4.2 **Development Review for Geologic Hazards.** Require development proposals to address geologic hazards, including but not limited to landslide, surface instability, erosion, shrink-swell (expansiveness) and seismically active faults. Technical reports addressing the geologic hazards of the site shall be prepared by an independent licensed soil engineer, geologist and/or structural engineer, approved by the Town and at the expense of the developer. All technical reports shall be reviewed by the Town and found to be complete prior to approval of a development plan.

PS4.3 **Development Densities in Hazard Areas.** Minimize the density of new development in areas prone to seismic and other geologic hazards.

PS4.5 **Public Facilities and Utilities in Landslide Areas.** Prohibit the financing and construction of public facilities or utilities in potential landslide areas.

PS4.10 **Grading.** Grading for any purpose whatsoever may be permitted only in accordance with an approved development plan that is found to be geologically safe and aesthetically consistent with the Town's Design Guidelines. Land with a predevelopment average slope of 25% or greater within the development area shall not be graded except at the specific direction of the Town Council and only where it can be shown that a minimum amount of grading is proposed in the spirit of, and not incompatible with, the intention and purpose of all other policies of the General Plan. The Town shall develop an average slope limit beyond which grading shall be prohibited unless grading is required for landslide repair or slope stabilization.

PS4.11 **Retaining Walls**. Discourage the use of retaining walls and other man-made grading features to mitigate geologic hazards, permitting them only when:
Required to decrease the possibility of personal injury or property damage;

- Designed to blend with the natural terrain and avoid an artificial or structural appearance;
- Appropriately screened by landscaping;
- Designed to avoid creating a tunnel effect along roadways and to ensure unrestricted views for vehicular and pedestrian safety; and
- Designed to ensure minimal public and/or private maintenance costs.

PS4.12 **Maintenance of Hillside Areas**. Facilitate successful longterm maintenance of hillside areas held as common open space.

PS4.13 **Public Information on Seismic and Geologic Safety.** Educate the general public regarding methods to improve seismic safety, with specific information targeted to hillside homeowners on ways to minimize landslide and erosion hazards.

Action Plan

IP-B2 **Moraga Open Space Ordinance** Continue to implement the development policies and standards set forth in the Moraga Open Space Ordinance, in accordance with its Interpreting and Implementing Guidelines.

IP-B5 **High Risk Areas Zoning Overlay** Establish a zoning overlay district for all high-risk areas. Development may be permitted only if geologic and geotechnical investigations or project mitigations result in a very low level of risk to life and property. If so, require the project geotechnical engineer and the engineering geologist to make explicit findings that this is the case, and require review by the Town's consulting geotechnical engineer and engineering geologist. Mitigations, if necessary, should be made conditions of project approval.

IP-B6 **Moderate Risk Areas Zoning Overlay** Establish a zoning overlay district for all moderate-risk areas and discourage development in areas so designated. Where possible, avoid building in moderate risk areas. Where it is not possible to avoid building in such areas entirely, due to parcel size and configuration, limit development accordingly through density regulations, subdivision designs that cluster structures in the most stable portions of the subdivision, site designs that locate structures in the most stable portion of the parcel, and specific requirements for site engineering, road design, and drainage control.

IP-B7 **Hillside Zoning Overlay**
Establish a Hillside Zoning Overlay for all hillside sites with greater than 20 percent slope. Regulate densities and require that permitted structures be built in the most stable portion of each parcel. Prohibit the construction of new

residences on average slopes of 25 percent or more within the proposed development area of a lot, with the exception of existing lots that were either legally created after March 1, 1951 or specifically approved by the Town Council after April 15, 2002. In the case of existing lots with an average slope of 25% or more within the proposed development area, the design of all new residences shall be subject to design review approval.

IP-J1 Open Space Preservation Program

Develop and adopt a program to preserve and/or protect important open space lands and natural resource areas in accordance with the Moraga Open Space Ordinance (MOSO). Areas to protect include:

- Major and minor ridgeline areas
- Steep slope areas
- Significant wildlife and waterway areas
- Agricultural lands
- Scenic areas

The program should identify priority preservation areas not already protected under MOSO, and strategies to achieve preservation goals. Potential preservation strategies include but are not limited to:

- Acquisition through use of Town funds, formation of an assessment district, participation in a land trust, or other means;
- Transfer of development rights;
- Long-term leases;
- Dedication, easements, or donations of land through development agreements or other means;
- Development and use regulations;
- Tax incentive programs.

IP-J3 Open Space Management Plan. Develop and adopt an Open Space Management Plan to establish management practices for the Town's natural habitat and open space areas. For open space areas under public ownership or control, clearly delineate public access and use areas, and those areas to be protected from human disturbance. Establish appropriate use controls and, where appropriate, provide compatible support facilities for activities such as hiking and picnicking while ensuring public safety and protection of adjacent private property.

Definitions (General Plan, Appendix D)

Cluster Housing. Cluster housing is defined as single family dwelling units sited on less than the minimum size lots permitted by the General Plan (see Policy LU1.6) to preserve open space.

Density (Residential). The number of permanent residential units per acre of land. Density may be controlled through zoning in the following ways: use restrictions, minimum lot-size requirements, floor area ratios, setback and yard requirements, minimum house-size requirements, limits on units per acre, and other means. Allowable density is the major distinction between residential districts.

Development. Development means the placement, discharge or disposal of any material, the grading or removing of any material, the change in the density or intensity of use of land, the subdivision of land, or the construction or erection of a structure. Development does not include (1) work necessary to eliminate or prevent a condition which is determined by the Town to be a menace to life, limb or property or adversely affects the safety, use or stability of a public way or drainage way or channel; (2) establishment of a fire trail approved by the Moraga-Orinda Fire Protection District; or (3) a road together with attendant underground utilities, may cross a ridge, if the Planning Commission finds that the crossing is necessary for the orderly development of the Town and does not conflict with the Municipal Code.

Geologic Hazards. These are geologic conditions that could have an impact on the safety and welfare of the Town, such as, among other things, land flow or creep, surface erosion, creek erosion, fault movement, shrink/swell of soils and sub-surface water conditions.

High Risk Areas. 'High Risk Areas' are areas with a MOSO Open Space designation on the General Plan Diagram and determined to be High Risk in accordance with Part II D. of the "Guidelines for the Interpretation and Implementation of the Moraga Open Space Ordinance – Measure A," adopted as Resolution 14-92 by the Town Council on February 12, 1992 in accordance with the Moraga Open Space Ordinance (MOSO).

Moraga Open Space Ordinance (MOSO). Refers to Measure A, a voter approved Initiative adopted at the General Municipal Election held on April 8, 1986. The Initiative regulates the uses and development of lands designated by the Initiative measure, and provides that the Town Council shall not amend or modify any requirement of this Ordinance without approval by the electorate at a general election. The ballot text is attached as Appendix E and made a mandatory requirement of this General Plan.

Performance Standards. These are quantifiable rules or guidelines that are used to determine compliance with regulations or conditions of approval established by the Town. Examples include noise measurements and traffic levels of service. See Growth Management Policies GM1.4 and GM1.5.

Residual Parcel. A residual parcel is a vacant lot of ten (10) acres or less in an area that is generally bounded by existing development. A residual parcel may have any land use designation. Land Use Element Policies LU1.11 and LU1.12 address issues related to residual parcels.

Ridgelines. A major ridgeline means the centerline or crest of the ridges known as Indian Ridge, Sanders Ridge, Mulholland Ridge and Campolindo Ridge, where the crest is above 800 feet above mean sea level and within an area with a MOSO Open Space designation on the General Plan Diagram. A minor ridgeline means the centerline or crest of any ridge other than those identified as 'major ridgelines,' where the crest is above 800 feet above mean sea level and within an area with a MOSO Open Space designation on the General Plan Diagram. Development shall be prohibited on minor ridgelines immediately adjacent to and extending into MOSO Open Space if slopes exceed twenty percent (20%) and elevation of said ridges is greater than 800 feet above mean sea level.

Single Family Dwelling (Attached). A dwelling unit occupied or intended for occupancy by only one household that is structurally connected with at least one other such dwelling unit. Single Family Dwelling (Detached). A dwelling unit occupied or intended for occupancy by only one household that is structurally independent from any other such dwelling unit or structure intended for residential or other use.

Single Family Dwelling (Detached). A dwelling unit occupied or intended for occupancy by only one household that is structurally independent from any other such dwelling unit or structure intended for residential or other use.

Subdivision. The division of a tract of land into defined lots, either improved or unimproved, which can be separately conveyed by sale or lease, and which can be altered or developed. 'Subdivision' includes a condominium project as defined in Section 1350 of the California Civil Code and a community apartment project as defined in Section 11004 of the Business and Professions Code. The Subdivision Map Act (Division 2 of the California Government Code) gives local jurisdictions the authority to regulate and control the design and improvement of subdivisions.

Transfer of Development Rights. Transfer of Development Rights (referred to as 'Density Transfer' in the Moraga Open Space Ordinance) is the process whereby development rights may be transferred from lands on the General

Plan Diagram with an open space designation or 1, 2, or 3 dwelling units per acre, but only when the Town Council finds that such a transfer will result in the dedication, protection and preservation of open space and when appropriate guarantees are provided by the developer that the land shall be permanently preserved as open space. Development rights may be transferred to land residentially designated lands, but such transfer may not increase the Theoretical Residential Holding Capacity determined by the initial calculation (described in the definition for "Theoretical Residential Holding Capacity") by more than 30 percent. Development rights may not be transferred to geologically hazardous areas or to any area with an open space designation on the General Plan Diagram.

Zoning. The division of a jurisdiction by legislative regulations into areas, or zones, which specify allowable uses for real property and size restrictions for buildings within these areas. Zoning is a key implementing program for the General Plan. The Zoning Map is a visual display of the geographic distribution of zones in a jurisdiction.

Design Guidelines

Protect ridgelines and hillside areas (RH)

1.) Ridgelines and Hillside Areas. Protect ridgelines from development. In hillside areas, require new developments to conform to the site's natural setting, retaining the character of existing landforms preserving significant native vegetation and with respect to ridgelines, encourage location of building sites so that visual impacts are minimized. When grading land with an average slope 20% or more, require "natural contour" grading to minimize soil displacement and use of retaining walls. Design buildings and other improvements in accordance with the natural setting, maintaining a low profile and providing dense native landscaping to blend hillside structures with the natural setting.(GP CD1.5) See Guideline RH1 through RH10 and ID10.3, ID10.4, ID10.6, ID11.1, ID13.3, SFR2.12, SFR2.13, SFR2.14, SRC7, L1, L2, and L3.

RH1 Protect ridgelines from development.

RH2 New development should be sited in areas that are least sensitive in terms of environmental and visual resources, including areas of flat or gently sloping topography.

RH3 In hillside and ridgeline areas, building sites should be sited so that visual impacts are minimized.

RH4 The roofline of all hillside buildings should blend with or follow the ridgeline's natural contour.

RH5 Hillside buildings and other improvements should have a low visual profile. Dense native landscaping should be provided to blend structures with the natural setting.

RH6 Hillside grading shall blend with natural slopes and be contoured to achieve a natural appearance. The use of retaining walls and other man-made grading features to mitigate geologic hazards should be avoided.

RH7 On hillside lots fire safe landscaping should be used. Landscaping should be distributed around structures to provide screening from off-site views. Adequate water supplies and fire-fighting access shall be provided.

RH8 In hillside areas, solid board privacy fences should only be used when located close to the residence. Site perimeter and other distant fencing should remain visually open (i.e., split rail or deer fencing) in order to minimize the visual "ribbon-like" effect of fencing on the hillsides.

RH9 Larger lots should be created on steeper slopes. Density should be minimized in areas prone to seismic and other geologic hazards.

RH10 Preserve both close-up and distant views of the natural hillside and ridgeline landscape as seen from valley areas.

ID10.3 When the pre-development slope is greater than or equal to 20%, development shall be avoided, but may be permitted if supported by site-specific analysis. When grading land with a slope of 20% or more, soil displacement and retaining wall use shall be minimized by using contour grading techniques. In MOSO areas, development shall be prohibited on slopes with an average gradient of 20% or greater. Design shall be consistent with Moraga Municipal Code Title 14.

ID10.4 Land with a pre-development average slope of 25% or greater within the development area shall not be graded except as authorized by the Town Council and only where it can be shown that a minimum amount of grading is proposed in the spirit of, and not incompatible with, the intention and purpose of the Moraga General Plan. No new residential structures may be placed on after-graded average slopes of 25% or steeper within the development area except that this provision shall not apply to new residential structures on existing lots that were either legally created after March 1, 1951 or specifically approved by the Town Council after April 15, 2002.

ID10.6 Preserve the natural topography of the land, especially at the horizon:

- Round off graded slopes, in a manner that conforms to the natural contours of the land and to the surrounding terrain. Sharp angles produced by earth moving, specifically at the top and toe of graded slopes shall be avoided.
- Slopes shall be contour graded to achieve a natural appearance.
- Slopes shall be blended with the contours of contiguous properties and create a smooth transition.
- Grading shall minimize scars due to cuts, fills, and drainage benches on natural slopes.

Neither cuts nor fills shall result in slopes steeper than 3:1 (horizontal to vertical), except where natural slopes are steeper. Where steeper slopes are unavoidable, special mitigation measures shall be incorporated into the design construction and maintenance of the slopes.

ID11.1 Retaining walls (excluding foundation retaining walls) and other man-made grading features may only be used to mitigate geologic hazards when:

a. required to decrease the possibility of personal injury or property damage

b. designed to blend with the natural terrain and avoid an artificial or structural appearance

c. appropriately screened by landscaping

d. designed to avoid creating a tunnel effect along roadways and to ensure unrestricted views for vehicular and pedestrian safety

e. designed to ensure minimal public and/or private maintenance costs

ID13.3 New road construction should adapt to topography and natural features.

ID13.11 Hillside lots should be larger than lots on naturally level terrain.

SFR2.12 Decks that require special consideration due to the topography and hillside design of the home, which includes decks from the first and second floor of the residences. Such decks should comply with the following standards:

a. Decks that exceed 6 feet in height shall be substantially screened by landscaping. The Design Review Board may require the property owner to enter into a landscape installation and maintenance agreement with the Town.

b. Landscaping shall mitigate the visual impact of a deck as viewed from adjacent neighbors.

c. Support posts should be setback from the face of the deck to minimize the height of posts and provide visual relief.

d. Diagonal or cross bracing of support posts shall not be permitted.

e. Decks shall be consistent with the scale and design of the home.

SFR2.13 The design of the mailbox should complement the style and materials of the principal building on the site.

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