



Understanding Moraga's Hillside Regulations

Town of Moraga
REVISED November, 2014

Prepared by:



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

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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.

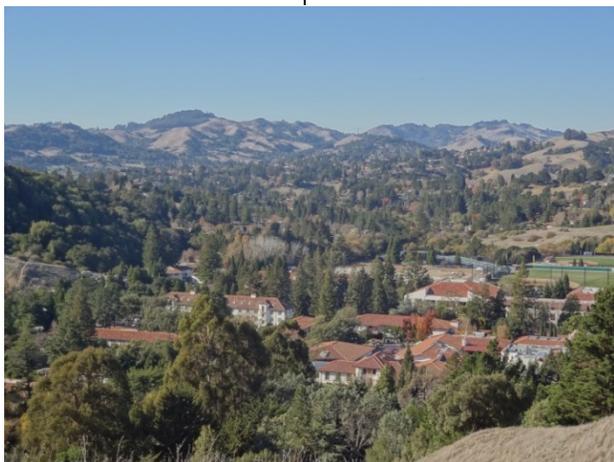
Hillsides and ridgelines are also part of a larger fabric of community values. As described in the Town’s General Plan, residents also value the ability to easily move around in town and commute to work. They value local shopping and commercial services, and high-quality community facilities such as 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 ~~continued and on going~~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.](#)

~~This~~Some of the ~~conflict~~ [conflict over development](#) is caused in part by disagreements over fundamental questions of growth and change in the community. But ~~conflict~~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 ~~necessary~~[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.](#)

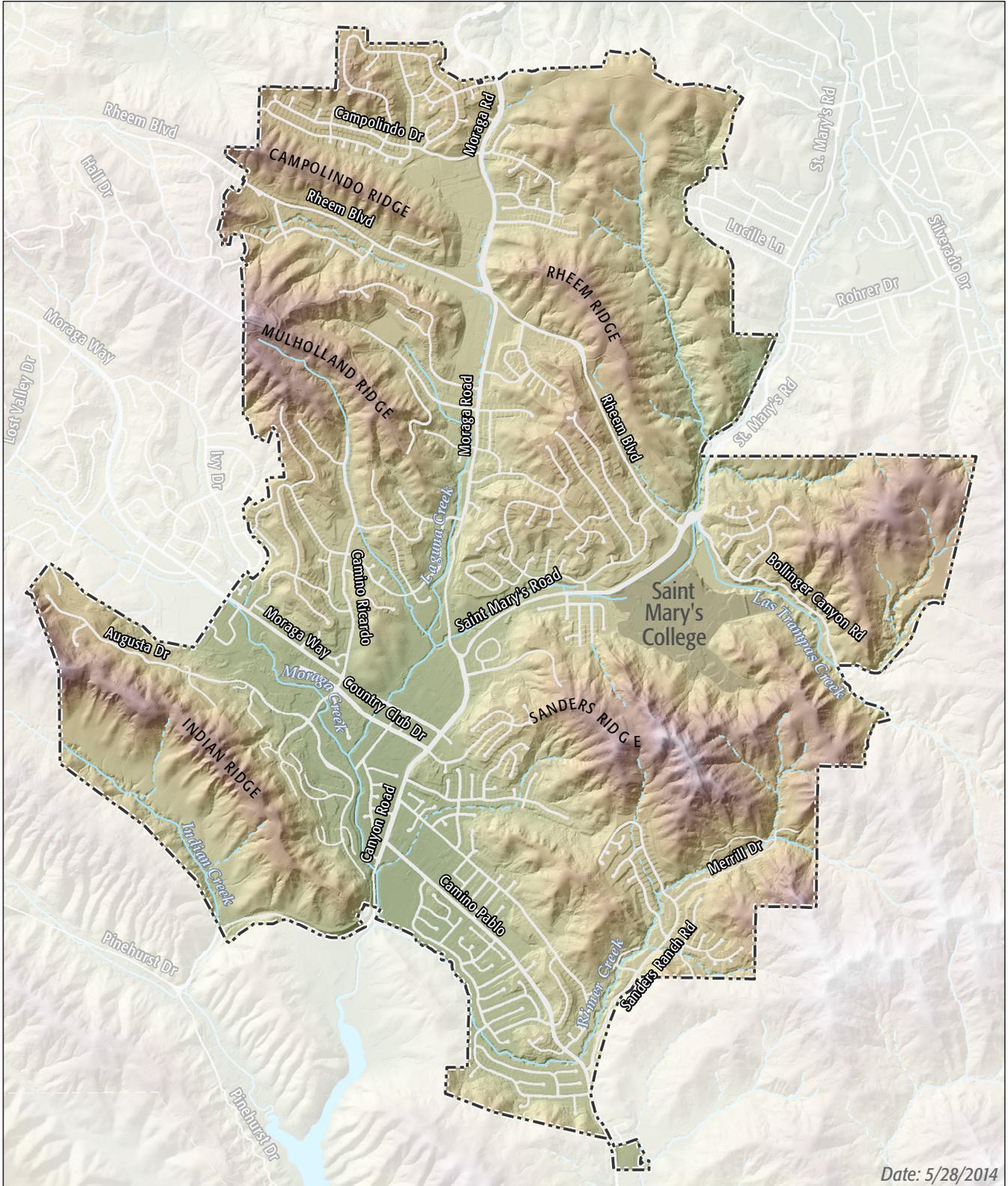
THE HILLSIDES AND RIDGELINES PROJECT

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. ~~The~~[Rather than being tailored to address any particular development proposal, the](#) project will ~~also~~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 ~~following documents~~[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)



Date: 5/28/2014

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 ~~existing regulations or or perhaps~~ entirely eliminate existing regulations that are unnecessary or duplicative. As the Hillside 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.

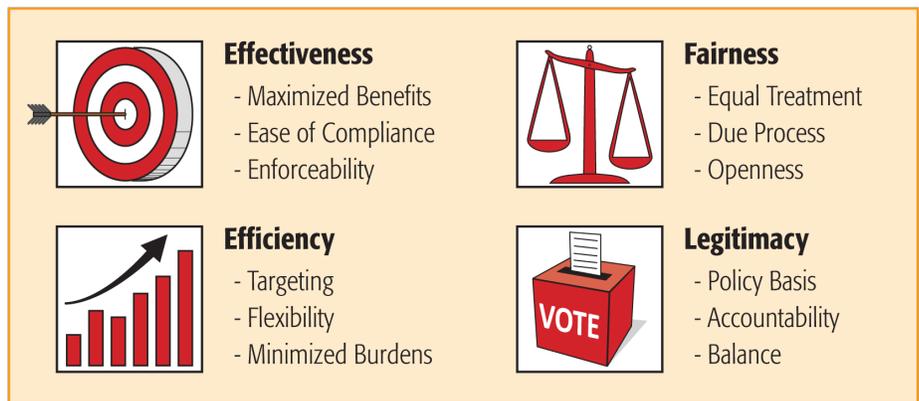
Amendments to Moraga’s hillside regulations must carefully balance numerous community values, including open space preservation, housing availability, and economic development. To help achieve this balance, amendments to hillside regulations will be guided by principles of “smart regulation.” These principles 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
(Mid-2014Early 2015)
3. Hillside Regulation Options – Prepare options for how to address key issues
(Late 2014Early 2015)
4. Draft Regulations – Prepare draft amendments to Town’s policies and regulations
(EarlyMid 2015)
5. Review and Adoption – Adopt amended policies and regulations
(MidLate 2015)

Community participation is an essential part of the Hillside 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” ~~have been updated three times—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.](#)

[The](#) 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 Hillside and Ridgeline project, the Town will supplement traditional in-person meetings with an [on-line](#) 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 officials will review input provided through Open Town Hall prior to making decisions during this process.

For more information on the Hillside and Ridgeline 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 ~~welcomes received~~ public comments on this preliminary draft ~~submitted by through~~ June 18³⁰, 2014. ~~Later in the summer, Town staff will release a This~~ final draft ~~to correct~~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 ~~the~~ Zoning Diagram designate these areas as "MOSO Open Space."

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.

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.

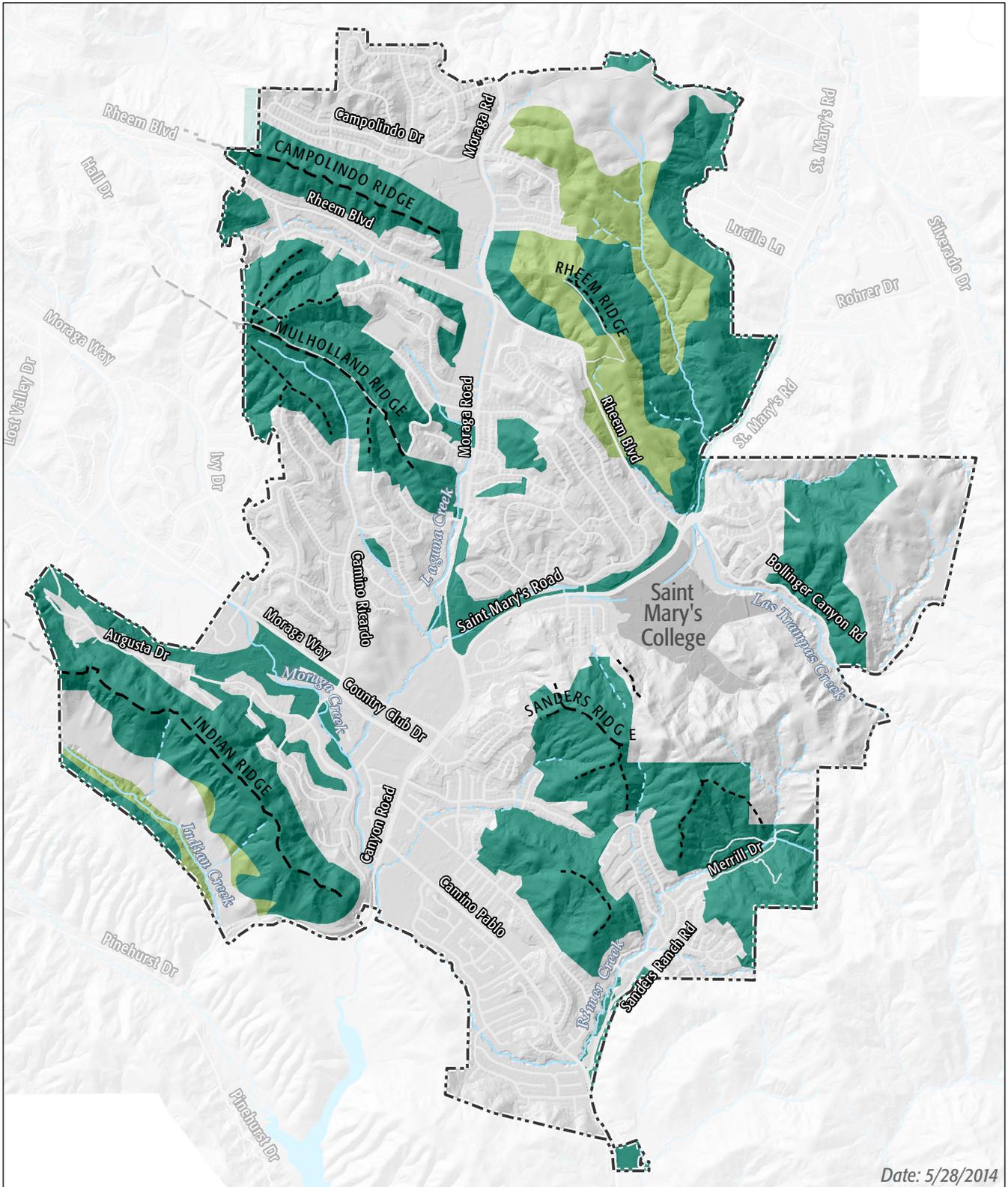
2. What land uses are allowed in open space areas?

"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.

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



Date: 5/28/2014

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

MAP 2
OPEN SPACE LANDS

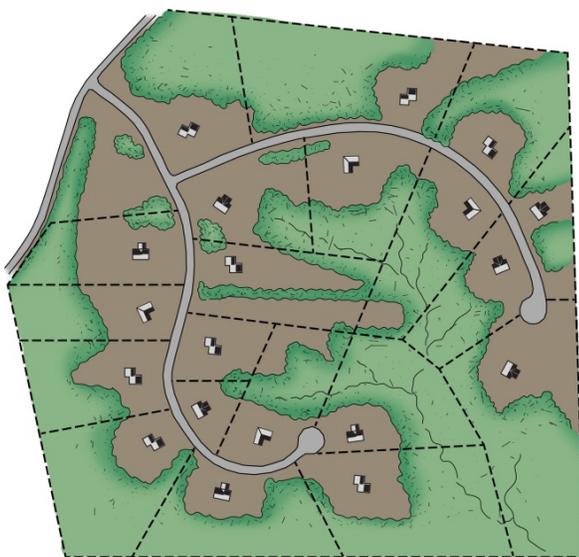


3. What is residential density, and how much density is permitted in Open Space areas?

The “Residential density” is the number of homes on a development site is referred to as “residential density.” 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.)

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

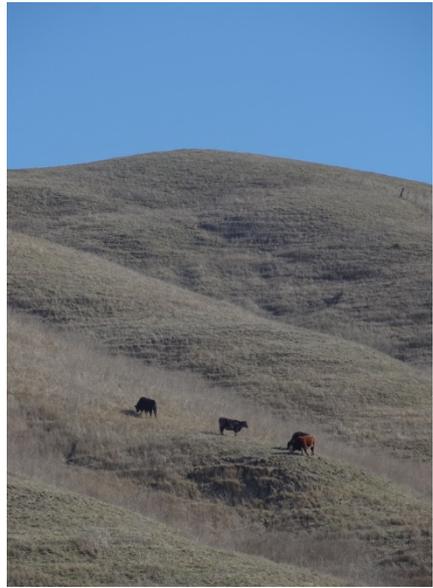
- Suitability of the site for increased density.
- Potential environmental and public health impacts.
- Distance from high-risk areas and ridgelines.
- Visibility of development, including effect on views of ridgelines from scenic corridors.
- Provision of open space, park, and recreational facilities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

Sources: MOSO Guidelines Section III.C (Increase in Density in Open Space Land)
Zoning Ordinance Section 8.52.060 (Open Space Density)



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.



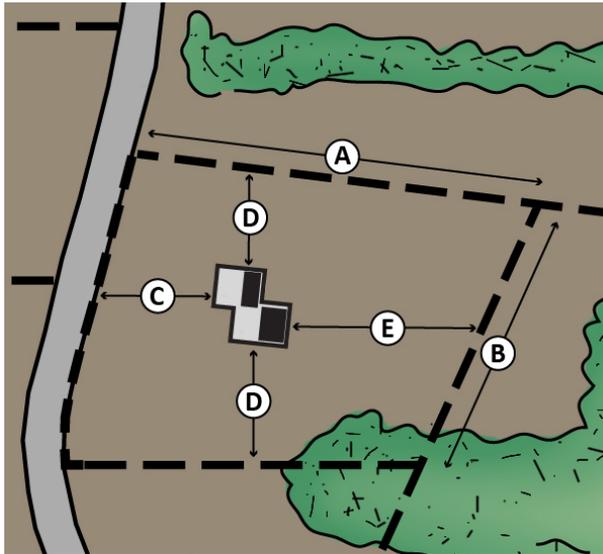
Example of a single-family home surrounded by undeveloped land.

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

“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.

Sources: Zoning Ordinance Chapter 8.52 (MOSO and Non-MOSO Open Space Districts)
Zoning Ordinance Chapter 8.48 (Planned Development District)

DIAGRAM 2: ILLUSTRATION OF LOT DEVELOPMENT STANDARDS



- (A) Lot Depth
- (B) Lot Width
- (C) Front Setback
- (D) Side Setback
- (E) Rear Setback

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.

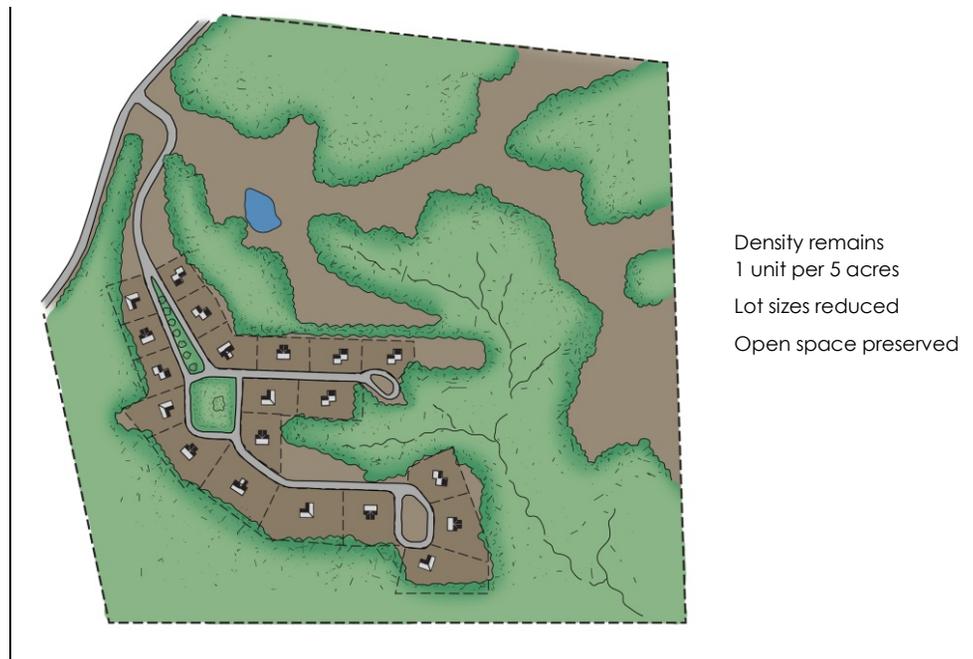
Development of property of 10 acres or more, or subdivisions of five or more lots in MOSO Open Space must follow the rules of the Planned Development district. The Planned Development district lists a series of land use classifications that assign potential maximum density (e.g. 1-PD [1 Dwelling Unit 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?

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.

Sources: MOSO Guidelines
Section II.A
General Plan, page D-4

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.”

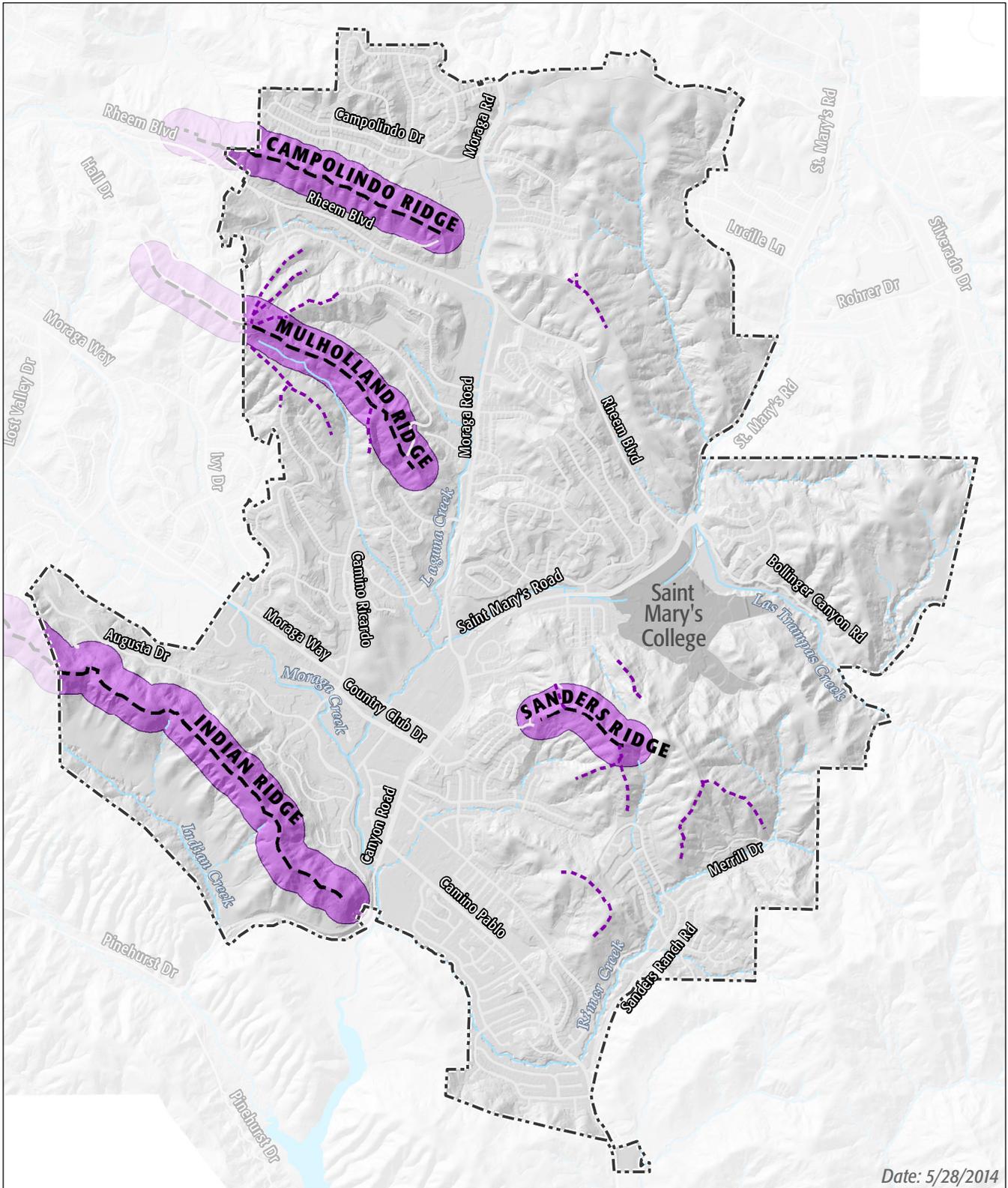
Moraga’s regulations, including the General Plan, MOSO Guidelines, and Zoning Ordinance, define two types of ridgelines: “major ridgelines” and “minor ridgelines.” Indian Ridge, Sanders Ridge, Mulholland Ridge, and Campolindo Ridge are specifically named as major ridgelines. A minor ridgeline is defined 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 OS1.65, 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



Date: 5/28/2014

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

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

MAP 3
DEVELOPMENT: MOSO RIDGELINES



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 [strict](#) 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. [In addition, there are disagreements about what is meant by 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 [hillside ridgeline](#) development?

C. STEEP-SLOPE AREAS

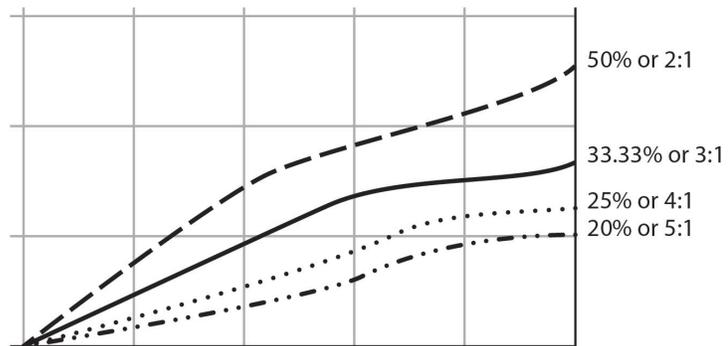
1. Is development allowed in steep-slope areas?

Sources: MOSO Initiative
Section 3(b)(1)
General Plan Policy LU-1.8

Gradients may be expressed as a ratio of vertical rise to horizontal run. For example, if elevation increases by 50 feet over a horizontal distance of 100 feet, this would be a 50:100 or 1:2 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.

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.



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 [approval by the](#) 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?

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 cell²

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



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

$$I = 2 \text{ ft.}$$

$$L = 838 \text{ ft.}$$

$$A = 6,200 \text{ sq.ft.}$$

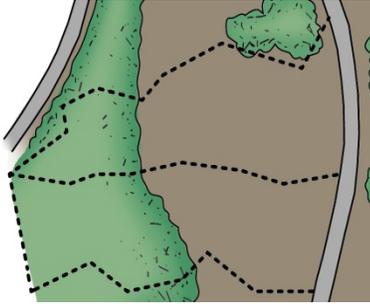
Within MOSO Open Space, average slope is calculated for a more specifically defined area known as a “cell.” A cell is “any polygonal area of at least 10,000 square feet.”³ A development project applicant may define the boundaries of a cell in order to calculate the average slope of a development site. 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.

Sources: Moraga Municipal Code
Section 8.136.020

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 [collection of](#) 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?

Sources: MOSO Section 3.a
MOSO Guidelines

D. HIGH RISK AREAS

1. What are “high risk” areas?

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?

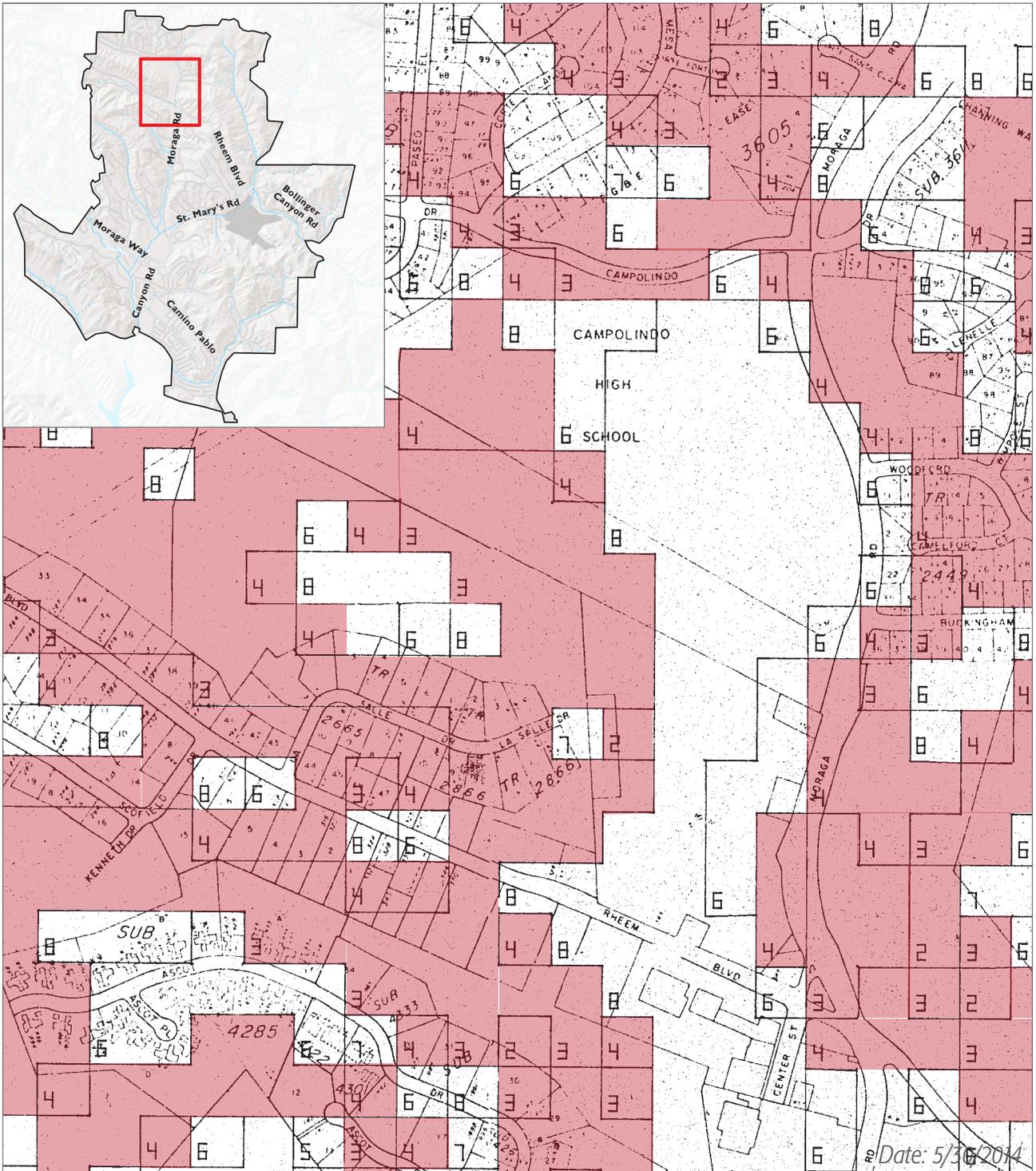
MOSO Guidelines Exhibit D (Development Capability Map) establishes a preliminary determination of high-risk areas in Moraga. The map was developed and adopted in 1989, to implement provisions of the MOSO Ordinance that call for the Town Council to identify and limit development densities on high risk lands. This map, which is based on data available at that time, divides Moraga into a grid of ~~15200~~ by ~~15 meter~~ [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 ~~to~~ the Moraga Road and ~~Moraga Way~~ [Rheem Boulevard](#) intersection. Squares with a high risk preliminary determination are colored red.

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



Source: Comarc Design Systems; PlaceWorks, 2014.

 High Risk Area

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 ~~on requests~~, 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?

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.

Source: MOSO Guidelines
Section D.2

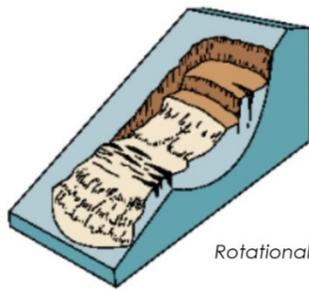


Remediation in High Risk Areas.

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).

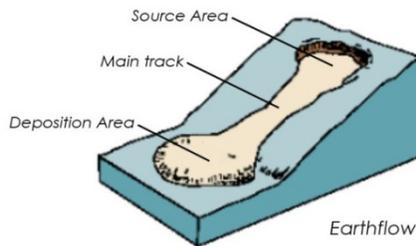
- Can geologic hazards in “high risk” areas be remediated as part of a development project to allow densities greater than 1 unit per 20 acres?
- Should remediation within MOSO areas only be allowed when it would address an existing threat to public health and safety?

DIAGRAM 5: TYPES OF LANDSLIDES COMMON IN MORAGA



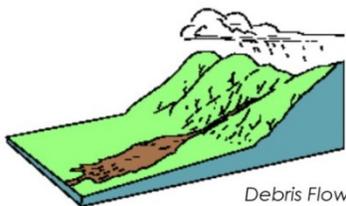
Rotational Landslide

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 Hillside 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



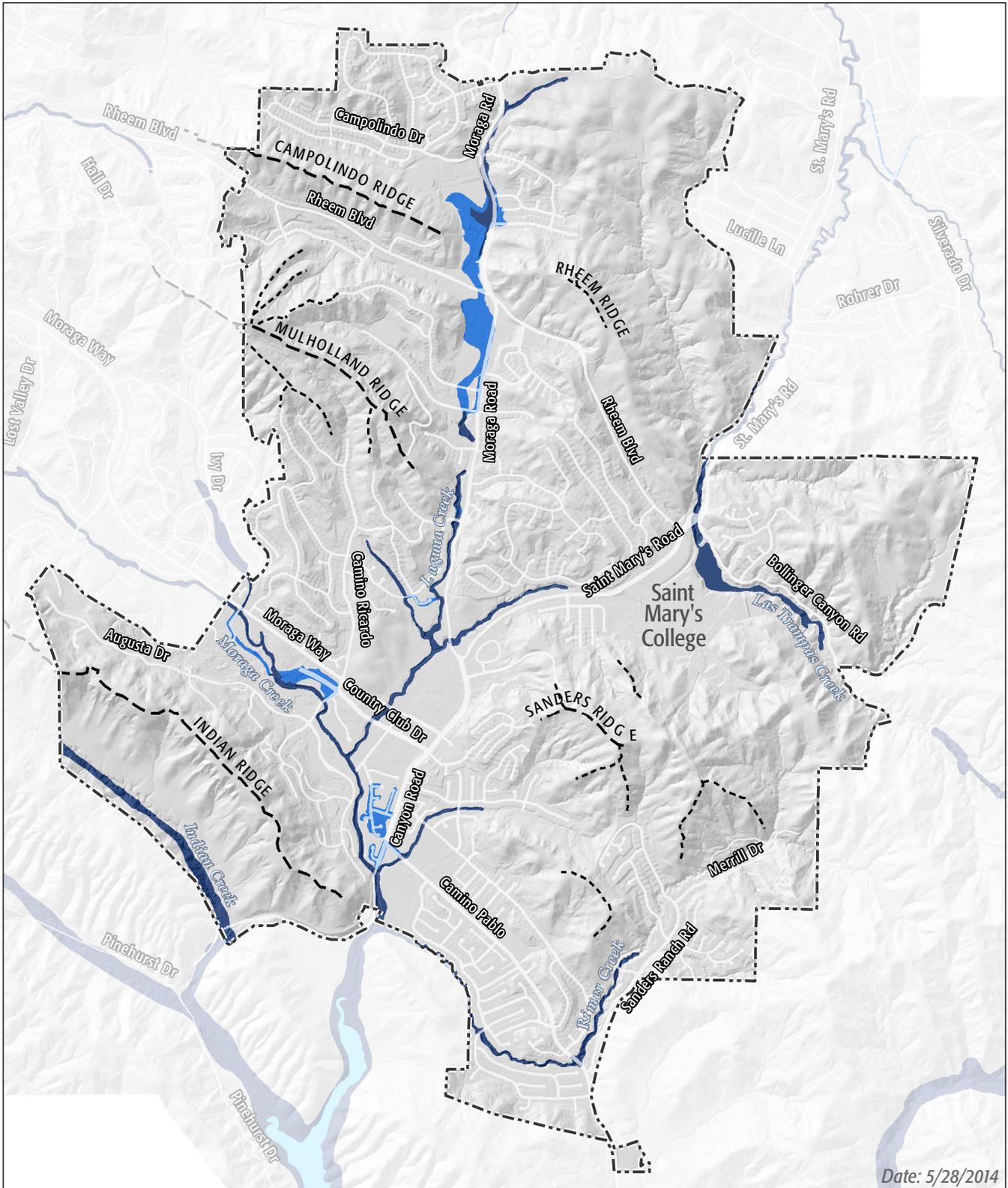
Example of slope remediation along Moraga [RoadWay](#) in Orinda (Google Streetview)

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.

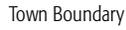
The 1989 “Development Capability” map represents the most recent effort to map and identify natural hazards in Moraga. The available data, technology, and methods to map landslides and other hazards have vastly improved in the past 25 years, through Geographic Information Systems (GIS), increased computer power, and more advanced remote sensing techniques. The Town, as part of the Hillside 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.](#)



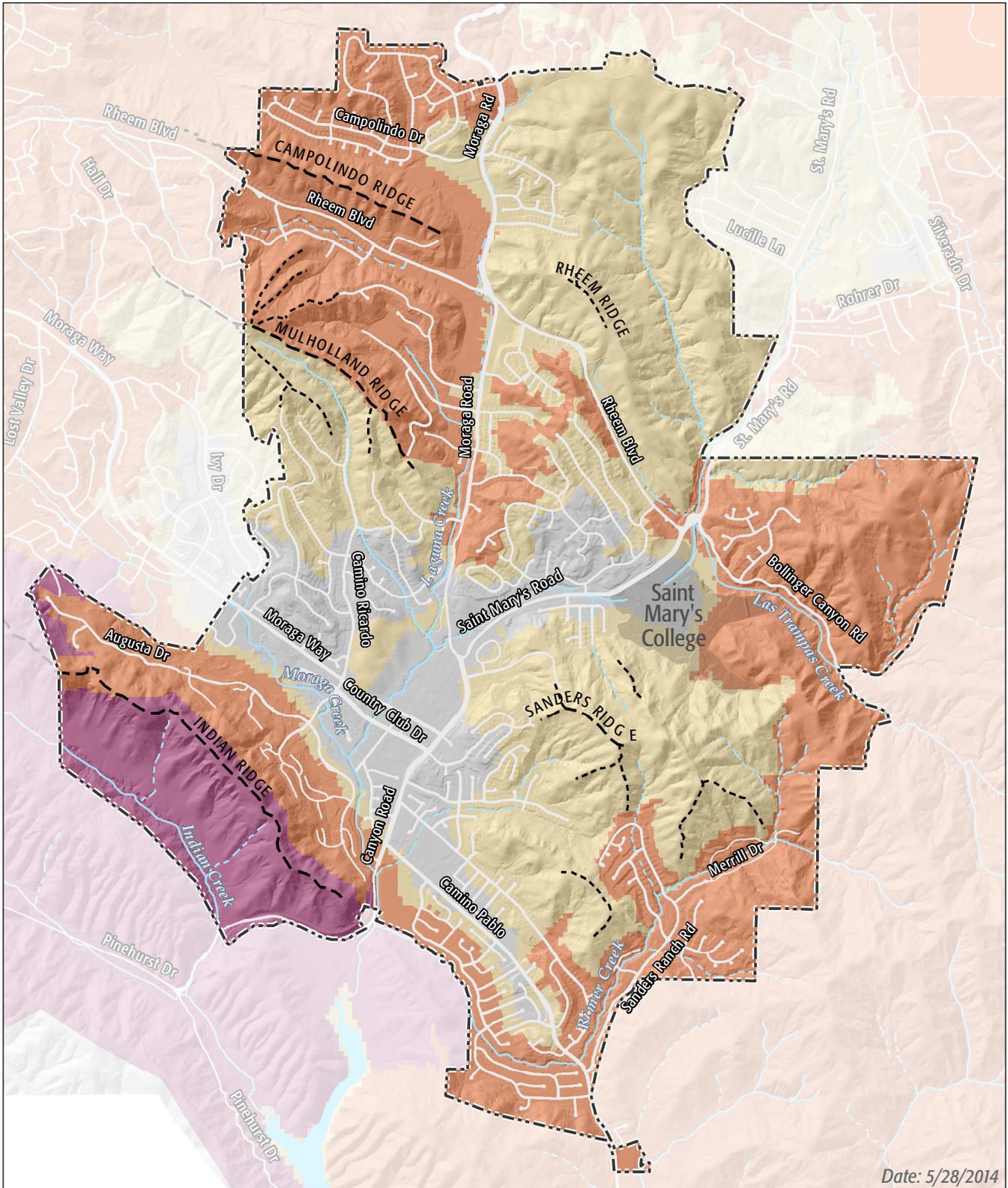
Date: 5/28/2014

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





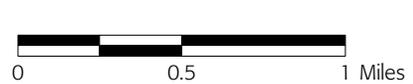
Date: 5/28/2014

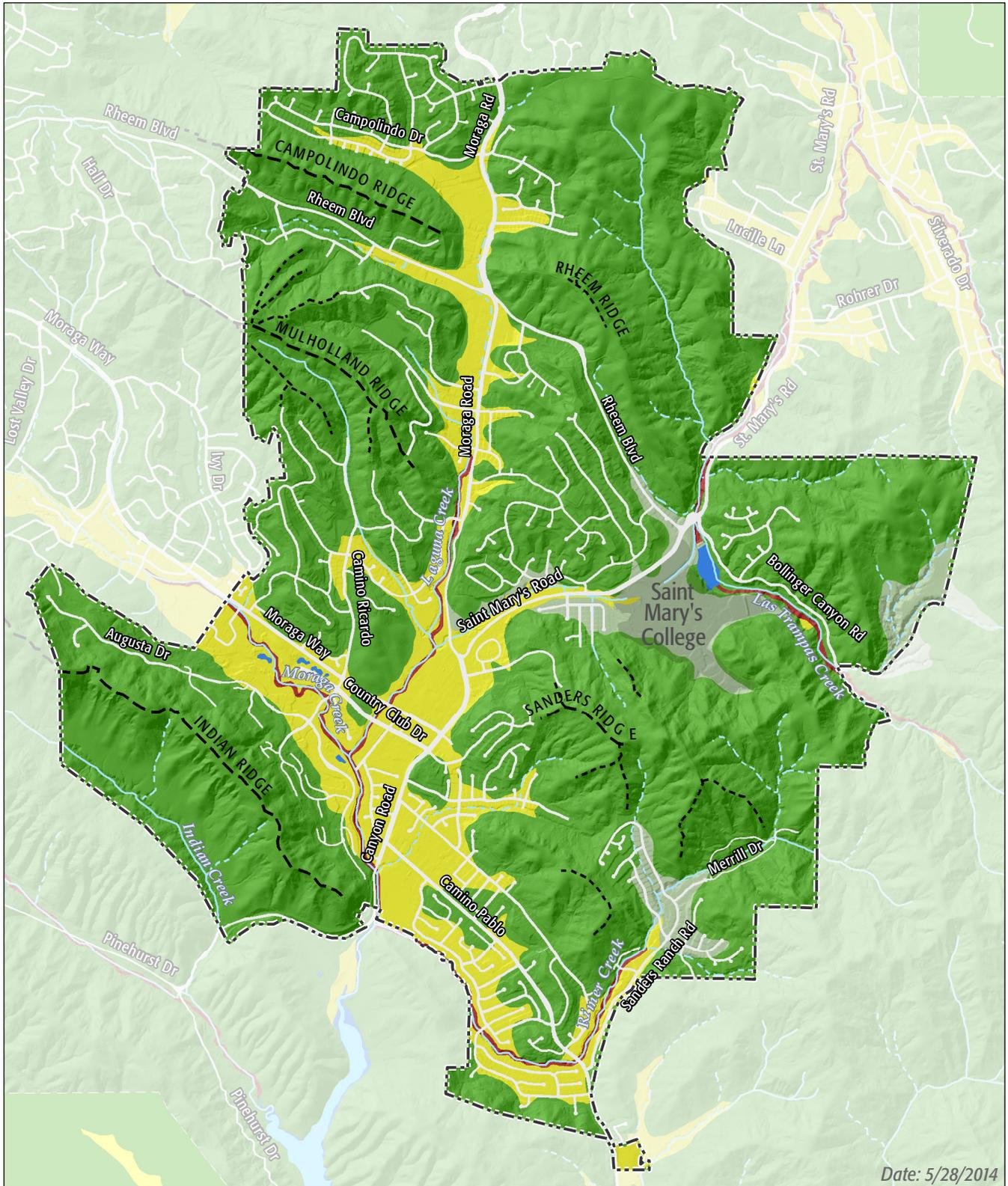
Data Sources: CalFire, 2007 & 2009; Town of Moraga, 2013; Contra Costa County, 2013; USGS, 2013; PlaceWorks, 2014.

- 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





Date: 5/28/2014

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	Water
High	
Moderate	
Low	
Very Low	

MAP 7
LIQUEFACTION SUSCEPTIBILITY

0 0.5 1 Miles

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.

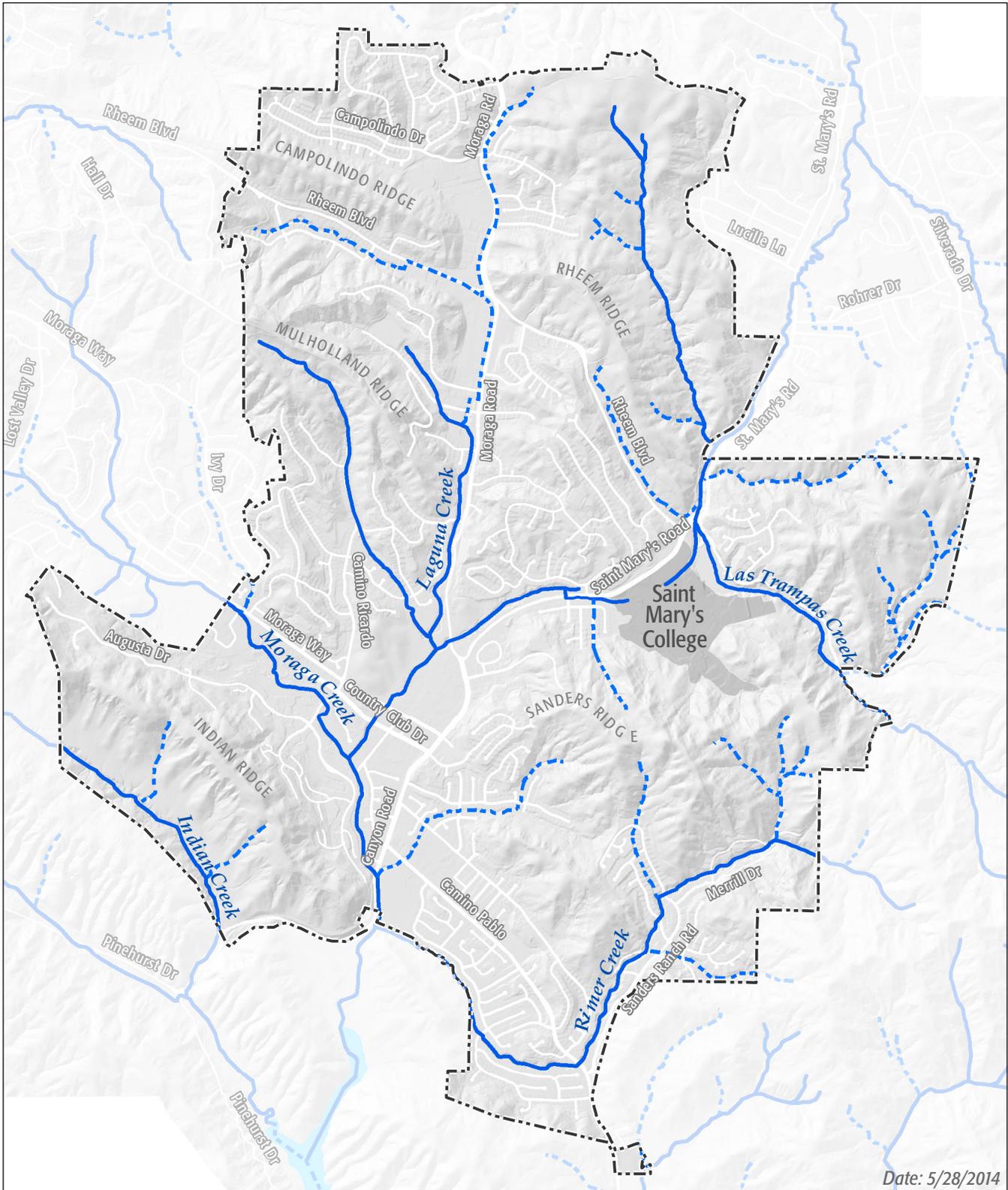
E. NATURAL RESOURCES

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.

Date: 5/28/2014

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

MAP 8
MAJOR HYDROLOGY AND DRAINAGE PATTERNS



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

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

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 1.)

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 ~~also shows the~~ illustrates which areas in Moraga are potentially most visible hillside areas as viewed 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 Hillside and Ridgelines project, and the Town has not been used previously by the Town used such analysis to evaluate proposed projects. Although this map is at a townwide scale, and does not describe the visual quality or character of these hillsides, it serves to illustrate which areas are most visible or prominent. Appendix A to this document 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:

- 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.

Sources: General Plan
Policy CD.1.5

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 Division⁵. "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.

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.

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

 **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

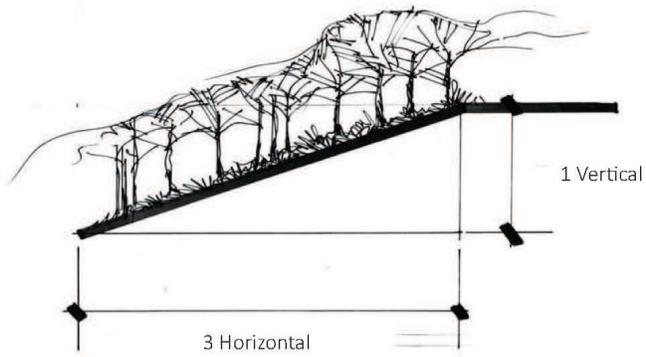


DIAGRAM 7: ROUNDING OFF OF SLOPES

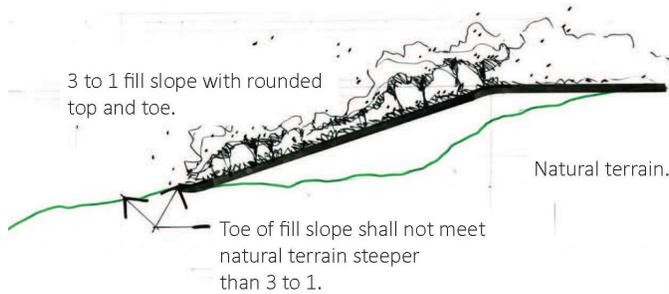
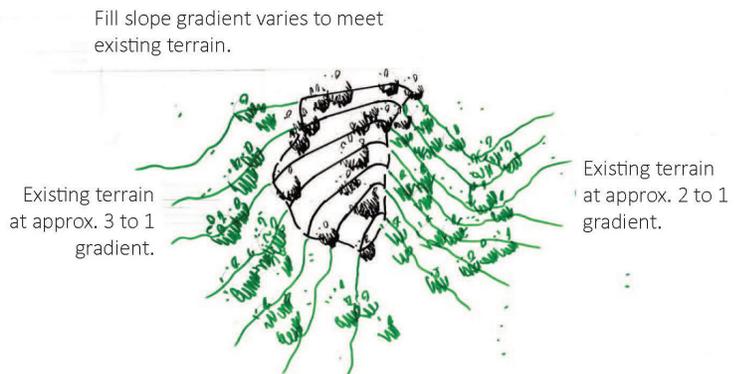


DIAGRAM 8: CONFORMANCE TO SURROUNDING TERRAIN



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

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.

2. What is a Hillside Development Permit?

A Hillside Development Permit (HDP) is required to grade, clear, construct upon, or alter land with 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’~~ ‘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 Hillside and Ridgelines Project ~~address~~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 ~~will be~~ 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 ~~this~~ Draft Background Report, there ~~will be~~ a public workshop ~~and a series of meetings~~ to receive feedback on the report ~~and other aspects of the Hillsides and Ridgelines Project~~. The public workshop ~~will solicit~~ in-person public comment on the Draft Background Report, and Open Town Hall ~~will enable~~ forums enabled the public to provide additional online comment. ~~The workshop~~ This version of the report will be ~~followed by a~~ 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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