

# Calero County Park Trails Master Plan Alternatives Report



*Photograph by Ron Horii*

April 2012



**bellinger foster steinmetz**



## **ALTERNATIVES REPORT**

April 2012

### Calero County Park Trails Master Plan



Prepared for County of Santa Clara  
Parks and Recreation Department

Prepared by  
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# ACKNOWLEDGEMENTS

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## **REPORT IMAGES**

Thank you Ron Horii for allowing us to use some of your park images.

### **Special Thanks**

Thank you to all members of the community who have participated in the formation of this project.



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# 1. INTRODUCTION



## PURPOSE

This Alternatives Report summarizes the second phase of the Calero Trails Master Plan process, and builds on the foundation created by the previously-completed Program Development Report (April 2011). The Alternatives phase of the project includes the development of trails plan alternatives, the evaluation of those alternatives, and the recommendation of a draft preferred alternative for further review and refinement. Ultimately, the Calero Trails Master Plan and related environmental review, in compliance with the California Environmental Quality Act (CEQA), will be based on the selection of a preferred alternative and comparison to other alternatives. The Alternatives Report sets the stage for the full development of a Trails Master Plan and environmental review.

According to the Santa Clara County Parks and Recreation System's Strategic Plan (approved 2003), the purpose of a park-specific Trails Master Plan is "to identify opportunities to increase multiple-use trails and to ensure consistency with the *Countywide Trails Master Plan* and *Strategic Plan*." With this direction, the Calero Trails Master Plan will explore opportunities to expand sustainable trail use for a diversity of users, and consider potential trail corridors for regional trails identified in the *Countywide Trails Master Plan*.

The Trails Plan will provide a planning framework for the Park's trail system development and use over a 15 to 20-year time period, while also supporting protection and enhancement of the sensitive cultural and environmental resources known to occur in the park. This framework will allow the County of Santa Clara Parks and Recreation Department (County Parks) to provide a variety of recreational trail opportunities in an environmentally sound and sensitive manner, compatible with operations and maintenance resources, and will identify partnership opportunities with others to implement common objectives. The expansion of Calero County Park, with the acquisition of portions of Rancho Canada del Oro in 2003, and Rancho San Antonio in 2009, makes the development of the Trails Master Plan especially timely. Currently, Calero County Park includes 4,400 acres.

## PROCESS

To date, the Calero Trails Master Plan process has included the following:

### ***Program Development Phase***

- Review of existing policies, plans and practices
- Establishment of project goals
- Mapping of existing conditions
- Site visits and field investigations
- Establishment of project issues and design program elements
- Community input through on-line questionnaires
- Input from the Parks and Recreation Commission (April 6, 2011)

### ***Alternatives Phase***

- Community input through two open houses (Community Meetings #1 & 2 - May 21, 2011 and May 25, 2011)
- Focused field investigation
- Establishment of evaluation criteria based on input during the Program Development Phase
- Development of trails alternatives
- Individualized interviews with interested partner agencies
- Evaluation of alternatives and identification of a recommended draft preferred alternative
- Input from partner agencies through a Technical Advisory Committee
- Input from the public at Community Meeting #3 (September 15, 2011)
- Refinement of the Draft Preferred Alternative based on additional public input
- Input from the community at the Parks and Recreation Commission (November 2, 2011)
- Input from the community at the Parks and Recreation Commission (March 7, 2012)

For more information on project goals, relevant policies and documents, existing site conditions and other background information, please refer to the Calero County Park Trails Master Plan *Program Development Report* (available on-line at [www.parkhere.org](http://www.parkhere.org)).

## KEY ISSUES

Issues that define the Calero Trails Master Plan were identified in the Program Development Phase of the project and continued to inform the Alternatives Phase of the project. Those key issues include:

Issue	Description	Policy Guidance	Master Plan Alternatives Approach
<b>Trail Users</b>	Historically, trails at Calero have been open to equestrians and hikers only. Consistent with the Strategic Plan's guidance "to identify opportunities to increase multiple-use trails," should trail use be expanded to accommodate bicyclists and/or hikers with dogs on leash? If so, should this be permitted on all trails, certain designated trails, or within a designated area of the park?	Strategic Plan; Countywide Trails Master Plan; Interjurisdictional Trail Design Guidelines; Dog on Leash Policy	Explore a range of trail uses in the alternatives.

Issue	Description	Policy Guidance	Master Plan Alternatives Approach
<b>Regional Trails</b>	Proposed regional trails extend through Calero County Park. How should proposed regional trails (including connector trails) in Calero be accommodated and designed?	Countywide Trails Master Plan; Interjurisdictional Trail Design Guidelines	Incorporate regional trail connections in the alternatives
<b>Adjacent Trail Uses</b>	Adjacent Open Space Lands (such as Rancho Canada del Oro Open Space Preserve) have publicly accessible trails that are open to bicyclists. Should there be compatible uses on trails within Calero that connect to Canada del Oro to create a seamless trail experience?	Strategic Plan; Countywide Trails Master Plan; Interjurisdictional Trail Design Guidelines	Show connections to adjacent trails in the alternatives. Continue to coordinate with partner agencies to provide integration of uses across boundaries.
<b>Maintenance Roads</b>	Unpaved maintenance roads also serve as trails. Many of them are very wide and would not necessarily be conducive to current multi-use trail design concepts. Reconsider where maintenance roads are needed versus other types of maintenance/operations access (quads) that could result in narrower trails.	Interjurisdictional Trail Design Guidelines; Natural Resource Management Plan	Consider maintenance and access needs as part of the trails alternatives. Trail width recommendations and design guidelines will be incorporated into the next (Master Plan) Phase of the project.
<b>Trail Conditions</b>	Some trails require considerable and frequent maintenance due to steepness and/or unfavorable soil conditions. Other trails require long seasonal closures due to wet, muddy conditions. Consider trail realignments to reduce seasonal closures and/or high operational costs.	Trail Maintenance Manual	Incorporate long-term maintenance considerations when recommending new and relocated trail alignments.
<b>Trail Experience</b>	Trail users' abilities vary greatly. Some require a shorter, less steep trail, while others prefer longer trails with more elevation difference. In the winter, some might prefer trails with sun, while in the summer, trails with shade may be more desirable. A variety of destinations and scenery add interest. Consider trails to meet diverse user needs.	Interjurisdictional Trail Design Guidelines	Consider a variety of trail experiences for each type of user as a part of the alternatives. Incorporate trail loops of varying length and degrees of difficulty.
<b>Whole Access</b>	Due to topographic conditions, it is not possible to design all trails within Calero to be whole access trails that are compliant with current ADA guidelines. However some trails could be designed for better access to people of all abilities.	State and Federal ADA guidelines	Incorporate whole access trails into the alternatives.

Issue	Description	Policy Guidance	Master Plan Alternatives Approach
<b>Trail-Dependent Uses</b>	While this is a Trails Master Plan and not a full Park Master Plan, consideration of some uses may influence trail location, trail type and facilities associated with trails. These uses may include: back country camping; equestrian camping; interpretive programs; picnicking, public boarding stables.	Strategic Plan; Equestrian Facility Feasibility Study	Consider existing and potential trail-dependent uses as a part of the alternatives
<b>Natural Resource Management and Grazing</b>	Natural Resource Management objectives and techniques, such as protection of sensitive habitats, protection of endangered species and grazing, may influence trail locations and trail types.	Natural Resource Management Plan; Grazing Management Plan	Coordinate trail alignments to support natural resource management objectives.
<b>Rancho San Vicente Trail Development</b>	As a recent acquisition to Calero County Park, Rancho San Vicente is not yet open to the public. The Trails Master Plan is an excellent opportunity to define public access to this significant property.	Draft Santa Clara Valley Habitat Plan; Strategic Plan	Identify public access and trails within the Rancho San Vicente portion of Calero County Park in the alternatives.
<b>Santa Clara Valley Habitat Plan</b>	County of Santa Clara is a local partner in the Santa Clara Valley Habitat Plan. The Habitat Plan may influence type and location of trails and staging areas within or near habitat lands associated with the Habitat Plan. Future public access and recreation on County parklands enrolled in future reserve system are predicated on an approved Recreation Plan and Reserve Management Plan for those lands.	Draft Santa Clara Valley Habitat Plan; Strategic Plan	Continue to coordinate with the Habitat Plan.
<b>Trail Design Standards</b>	County trail design preferences for multiple users has evolved with accumulated experience. (For example, trail design for bicyclists used to consider wider trails with fewer curves to accommodate longer site lines for all users. However, bicyclists can also go faster on these types of trails.) Current thinking is that narrower trails with more variations in both horizontal and vertical alignment slow bicyclists down and reduce hazards for all users. If trails will be open to bicyclists, such design standards should be considered.	Interjurisdictional Trail Design Guidelines	Trail design standards will be further developed in the next (Master Plan) phase of the project.
<b>Trail Signage</b>	A common comment by Park users is that trail signage is confusing and at times inadequate. Consider revisions to the County's trail signage standards to enhance use and experience on trails.	County Parks Trails Signage Standards	Trail signage guidelines will be further developed in the next (Master Plan) phase of the project.

Issue	Description	Policy Guidance	Master Plan Alternatives Approach
<b>Operations and Maintenance</b>	The Trails Master Plan needs to take into account long-term departmental resources available for operations and maintenance of the trails system, including design, construction, maintenance, and enforcement. The Plan should be sustainable for the long-term.	Strategic Plan	Alternatives will take into account sustainability in terms of locations of trail alignments to reduce long-term maintenance and to support natural resource objectives. Operations policies, including education and enforcement, will be further developed in the next (Master Plan) phase of the project.
<b>Flexibility</b>	Build flexibility into the Plan to allow for unforeseen future conditions or opportunities.	Strategic Plan	Alternative trail alignments developed during this phase are still conceptual and will require further review and ground-truthing before they are finalized. Final trail alignments will be determined in the field during implementation. Flexibility policies, including phasing, process for review and update of the master plan, and incorporating ways to adapt to changing conditions, will be incorporated into the next (Master Plan) phase of the project.



## 2. SUMMARY OF COMMUNITY INPUT



Community and agency input has been obtained through a variety of methods and from a diversity of interests. Input has been shaped by the participation of several groups, including the following:

- Members of the public, through on-line questionnaires, open houses, community meetings and written comments,
- Partner agencies, such as Santa Clara County Open Space Authority (OSA), Santa Clara Valley Water District (SCVWD), City of San Jose, Mid-Peninsula Regional Open Space District, Bay Area Ridge Trail, wildlife agencies, and through Technical Advisory Committee meetings,
- Parks and Recreation Commission subcommittee input,
- Santa Clara County Parks Staff review of multi-use practices at other county parks.

The input received to date can be summarized through a series of “wants” expressed by each group as noted below. This “wants” list is one of the considerations in the development and evaluation of the trails alternatives. More detailed community input and public opinion can be found in the *Program Development Report* (Public Opinion chapter and Appendix C) and Appendix A of this report.

### ***Everyone wants:***

- Variety in trail experience and ability level
- Access to newly acquired areas of the park
- Protection of sensitive resources
- Long-term success of the trails master plan (a plan that can be implemented and maintained over time with available resources).

### ***Equestrians want:***

- A place to ride without always considering potential conflicts with bicyclists. For equestrians, encounters with bicyclists can be dangerous. Horses can be startled by bicyclists that do not slow down and do not announce themselves prior to passing. Even experienced riders on seasoned horses can have difficulty controlling a horse that has been startled in this manner. This heightened level of alert can lead to a diminished riding experience for equestrians on multi-use trails.

***Bicyclists want:***

- Access to trails and the ability to more safely connect between parks in the area. Calero County Park is currently closed to bicyclists.

***Runners want:***

- Access to trails and connections between parks in the area for long-distance runs.

***Hikers want:***

- Access to trails. Currently, hikers have access to all trails at Calero County Park, but the Rancho San Vicente area is open only to scheduled docent-led hikes.

***Dog owners want:***

- Access to trails. Currently, Calero County Park trails are closed to dogs. Most other County Parks trails allow dogs on leash.

***County Parks wants:***

- Connections to regional trail segments identified in the Countywide Trails Master Plan
- Consistency/collaboration with adjacent open space uses and partner agencies
- Compatibility with natural resource management
- Ability to sensibly enforce solutions
- Ability for long-term sustainability and flexibility to adapt to changing conditions

***Partner agencies want:***

- Consistency with their plans and policies.
- Minimal conflicts with execution of separate missions. For example, the Santa Clara Valley Water District operates Calero Reservoir and the associated waterways and systems for drinking water purposes. Trail use should not conflict with these operations.
- Consistency with adjacent open space uses. For example, the Santa Clara County Open Space Authority (OSA) owns and operates the adjacent Rancho Canada del Oro open space. Currently, trail use policies are not consistent between OSA and County Parks lands. Bicyclists, equestrians and hikers are allowed on OSA trails, but dogs are not permitted. Trails that link between County parkland and OSA open space need to consider consistent trail uses to enhance user experience while minimizing confusion and unauthorized trail use.



### 3. TRAILS PLAN ALTERNATIVES APPROACH



Development of alternatives for the Calero Trails Master Plan followed a process based on the park's unique site conditions, along with community and agency input. In summary, the process was as follows:

- Development of a base trail alignment plan
- Consideration of a range of trail use alternatives
- Evaluation of the use alternatives based on established criteria
- Identification of a draft preferred alternative based on the evaluation
- Review of both the process and the outcomes with the public, partner agencies and the Parks and Recreation Commission.

Each step of the process is further described below. More information on each step is provided in subsequent chapters of this report.

#### **1. Development of a base trail alignment plan**

Based on an evaluation of both site constraints and opportunities, the goal of implementing identified regional trail corridors through Calero County Park, as well as input from the community and partner agencies, it was determined that there were limited corridors where trails were feasible. Therefore, it was determined to develop a “base plan” of trail alignments that best met the multiple issues identified in the Program Development Report. The base trail alignment plan was developed using GIS mapping of opportunities and constraints as well as site visits to verify field conditions. This base trail plan is then used in each of the alternatives.

#### **2. Consideration of a range of trail use alternatives**

Instead of basing alternatives on locations of trails, the alternatives were developed to explore a range of trail users. With the potential for multiple trail users (hikers, dogs on leash, equestrians and bicyclists), the alternatives explore a range of trail use, from primarily “leaving the park as is” (equestrian and hiking use only) to various ranges of expanding park use to other users (bicyclists and dogs on leash).

#### **3. Evaluation of the use alternatives based on established criteria**

The alternatives were evaluated based on criteria that were derived from the framework established

in the Program Development Report and community input. General evaluation categories include the following:

- Consistency with Plans and Policies, such as the County General Plan, County Park Strategic Plan, Countywide Trails Master Plan Update, and the Draft Santa Clara Valley Habitat Plan.
- Consistency with partner agency needs and objectives, such as those at OSA, SCVWD, City of San Jose, and wildlife agencies.
- Operational Sustainability, or the ability to operate and maintain the trails system over time, taking into account natural resource management objectives, range of user needs, user safety, and current Parks practices and direction.

**4. Recommendation of a draft preferred alternative based on the evaluation and public input.**

After applying the criteria to each of the alternatives, one alternative emerged as best meeting the criteria and is therefore recommended as the draft preferred alternative. Comment on the Community and PRC draft preferred alternative has led to further refinement, as outlined later in this report.

**5. Review of both the process and the outcomes with the public, partner agencies and the Parks and Recreation Commission.**

The process noted above, evaluation criteria, alternatives and preferred alternative were reviewed and discussed at a Community Meeting on September 15, 2011. Following that meeting, additional input was gathered from the Technical Advisory Committee representing partner agencies, and from County Parks staff. All of the compiled information was presented to the Parks and Recreation Commission on November 2, 2011. Based on comments we received, revisions were made to the Draft Preferred Alternative, and a second presentation was made to the PRC on March 7, 2012. A summary of comments received, revisions made and steps still to be taken to finalize the draft preferred alternative are included in this report.



## 4. TRAILS BASE PLAN AND USER ALTERNATIVES



### TRAILS BASE PLAN AND USER ALTERNATIVES

The base trail alignment plan was developed taking into account numerous considerations, including the following:

- Existing physical conditions, such as topography, soil type, vegetation, etc.
- Existing trail locations and conditions
- Regional trail corridors
- Natural resource management objectives
- Site investigation
- Community input
- Adjacent public open space uses
- Partner agencies input
- Emergency vehicle access





The base trail alignment plan includes the following features:

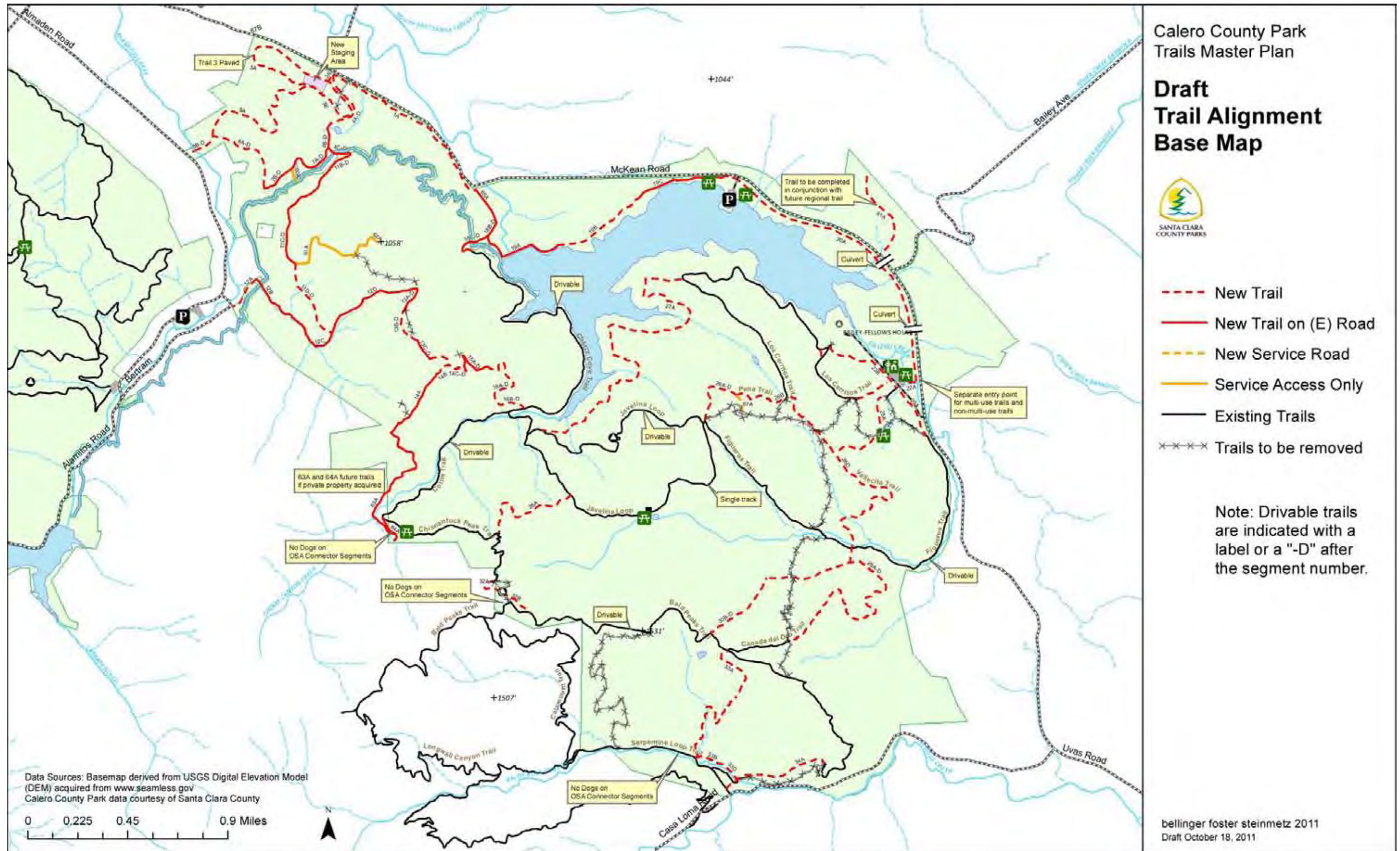
**Rancho San Vicente Area**

- A new staging area with access from McKean Road at the intersection of Fortini Road.
- A whole-access loop trail for people of all abilities
- Trails through the Rancho San Vicente property and connections to Almaden Road near Almaden Quicksilver County Park
- Trail connections to areas of Calero County Park that are already open to the public.
- An existing service road to the radio tower would not be open for trail use to protect sensitive habitats.



*For map legend, see page 13.*









### Calero Lake/McKean Road Area

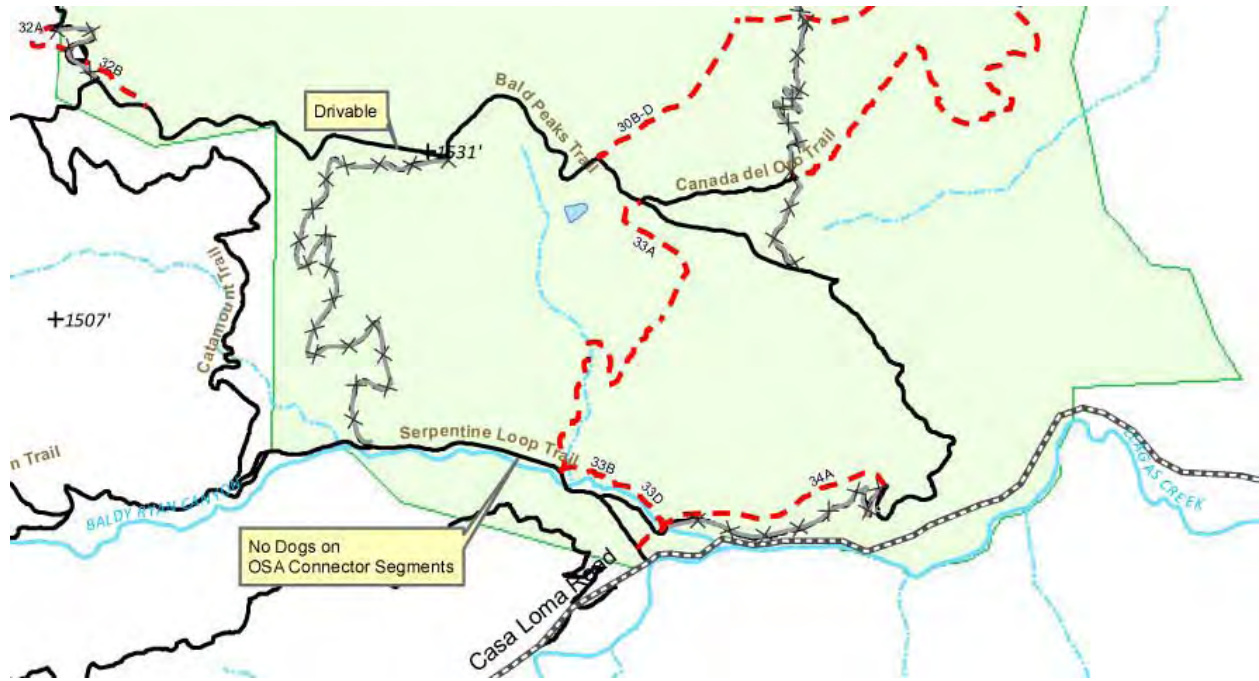
- A trail roughly paralleling McKean Road
- Completion of a loop trail around Calero Lake
- Closure and/or realignment of portions of the Pena and Vallecitos Trails
- Additional trail loops
- Future regional trail connections east of McKean Road (while a potential alignment is shown, trails east of McKean would be built in conjunction with a larger regional trail project. Though not feasible at this time, connections to other Calero trails might be made through existing culvert undercrossings below McKean Road. However the existing culverts are small and unsafe for any use other than pedestrians. Increasing the culvert size for use by equestrians would be a major construction project.
- Trail access from the existing staging area off of McKean Road



For map legend, see page 13.

**Rancho Canada del Oro/Casa Loma Road Area**

- Closure of a portion of the Serpentine Loop Trail, with a connection to the Catamount Trail on OSA property.
- Connections to trails in the Calero Lake and Rancho San Vicente areas.
- Trail access from the existing Casa Loma Road staging area on OSA property.



*For map legend, see page 13.*



## ALTERNATIVES

### ***Alternatives for further evaluation***

As indicated earlier, instead of basing alternatives on location of trails, the alternatives were developed to explore a range of trail uses. The following maps illustrate a progression in range of “multi-use” (including bicycles and dogs on leash) that were considered for further evaluation.

### ***Alternative 1***

In Alternative 1, bicycle access is limited to regional through-connections along the periphery of the park. All other trails within the interior of the park are for equestrian/hiking or hiking-only use.

### ***Alternative 2***

In Alternative 2, bicycle access is expanded to include some trails within the park, while much of the park is for equestrian-hiking or hiking-only use. The east-west regional trail connection shown traversing Calero County Park in the Countywide Trails Master Plan update is shown in this alternative in the southern area of the park.

### ***Alternative 3***

Alternative 3 further expands the “multi-use” trails onto more trails that were equestrian-hiking exclusive in the previous alternatives. The proposed lake perimeter trail is multi-use in this alternative, and the east-west regional trail connection is relocated to this location.

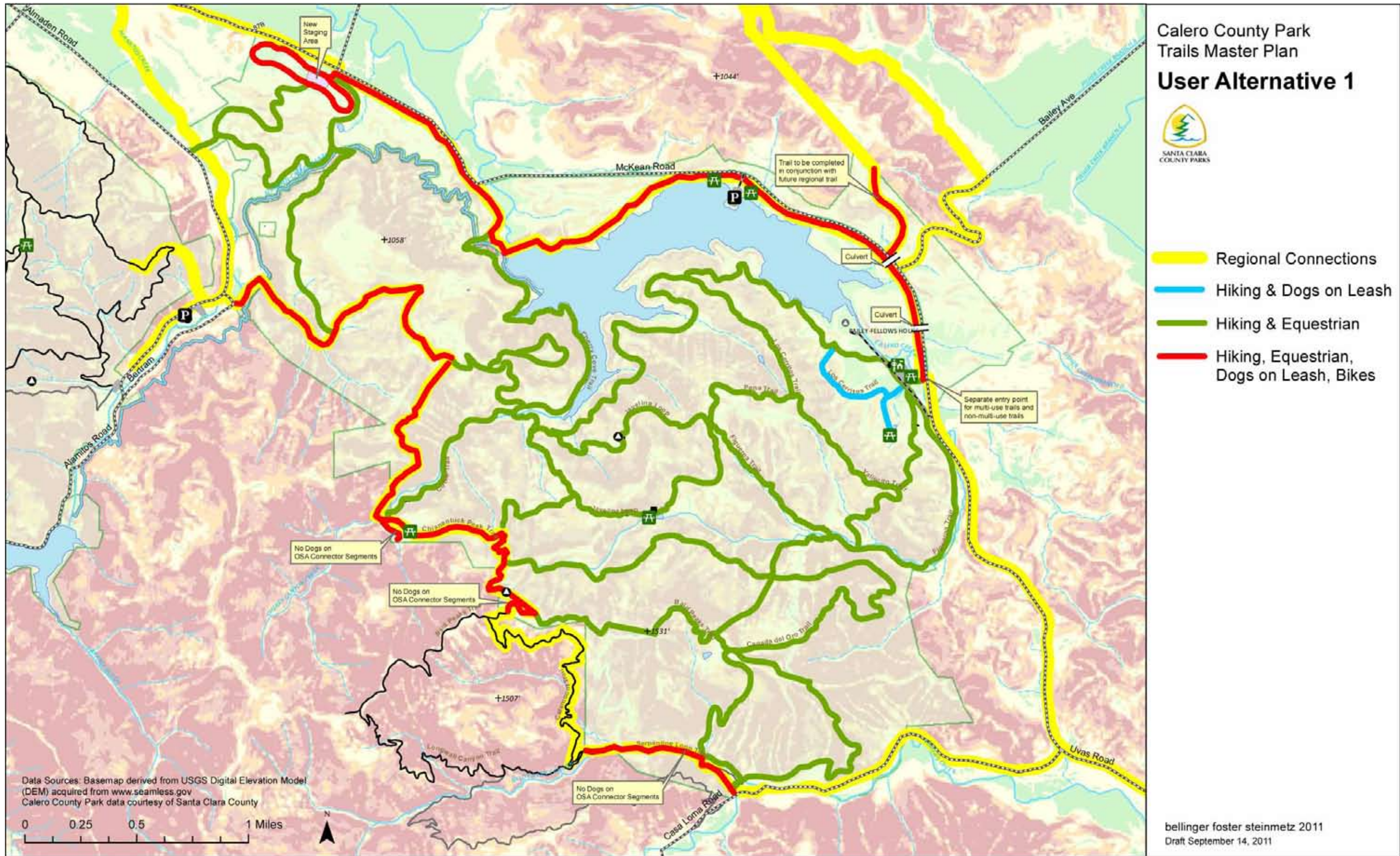
### ***Alternatives that were considered but rejected***

While three alternatives are shown, other alternatives were considered but rejected as not meeting the needs of all users. Alternatives that were considered but rejected for further consideration include the following:

- Leaving the Park as is, with no bicycle access. This does not meet the desires of bicyclists to have access to park trails and regional connections, nor is it consistent with County Parks plans and policies.
- Making the entire park “multi-use” (including bicycles and dogs on leash), with no areas reserved for equestrians and hikers and closed to bicycle use. This does not meet the desires of many equestrians who have requested that an area of the park have limited use without bicycles, nor is it consistent with the historic equestrian emphasis of the core area of Calero County Park.



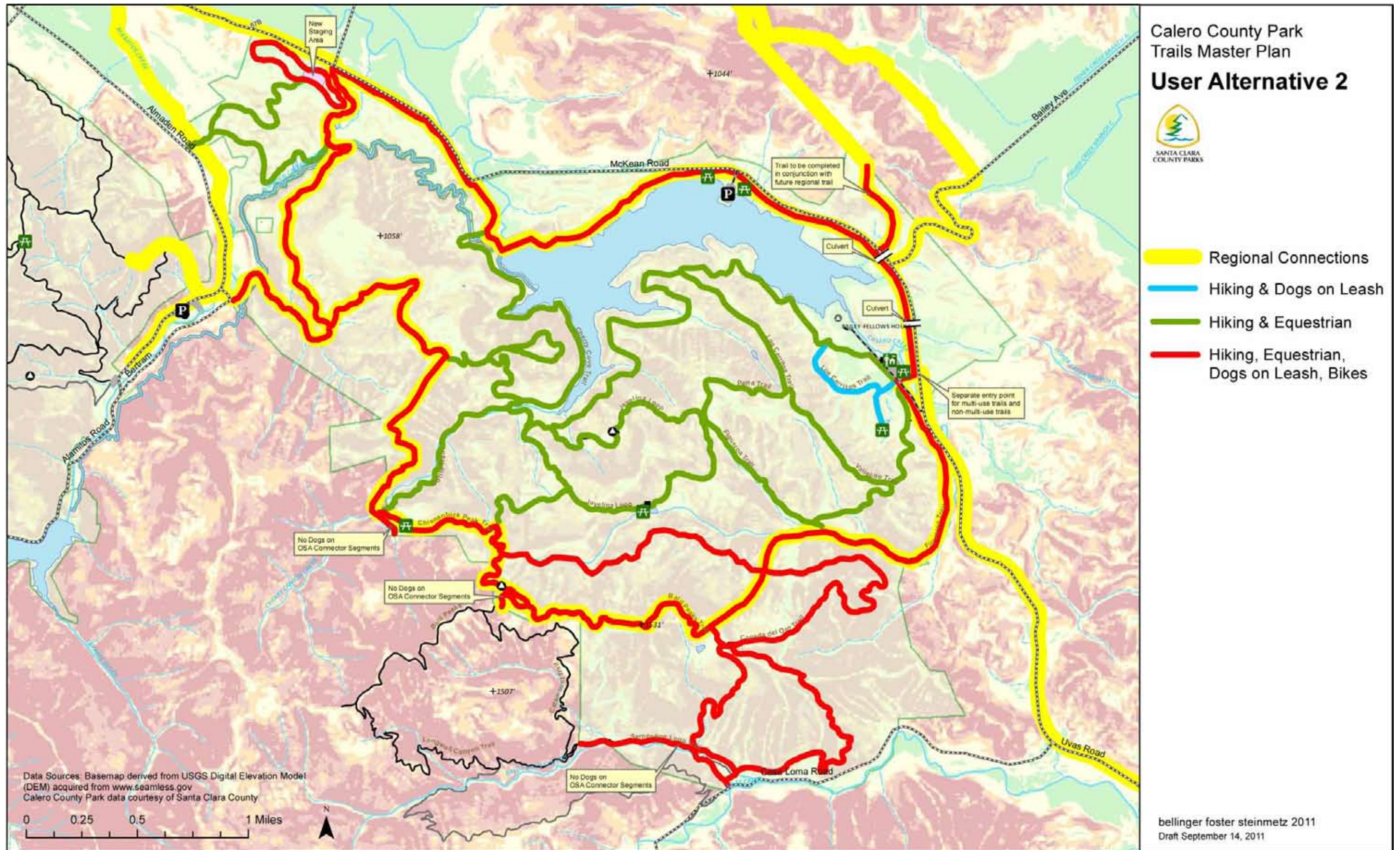








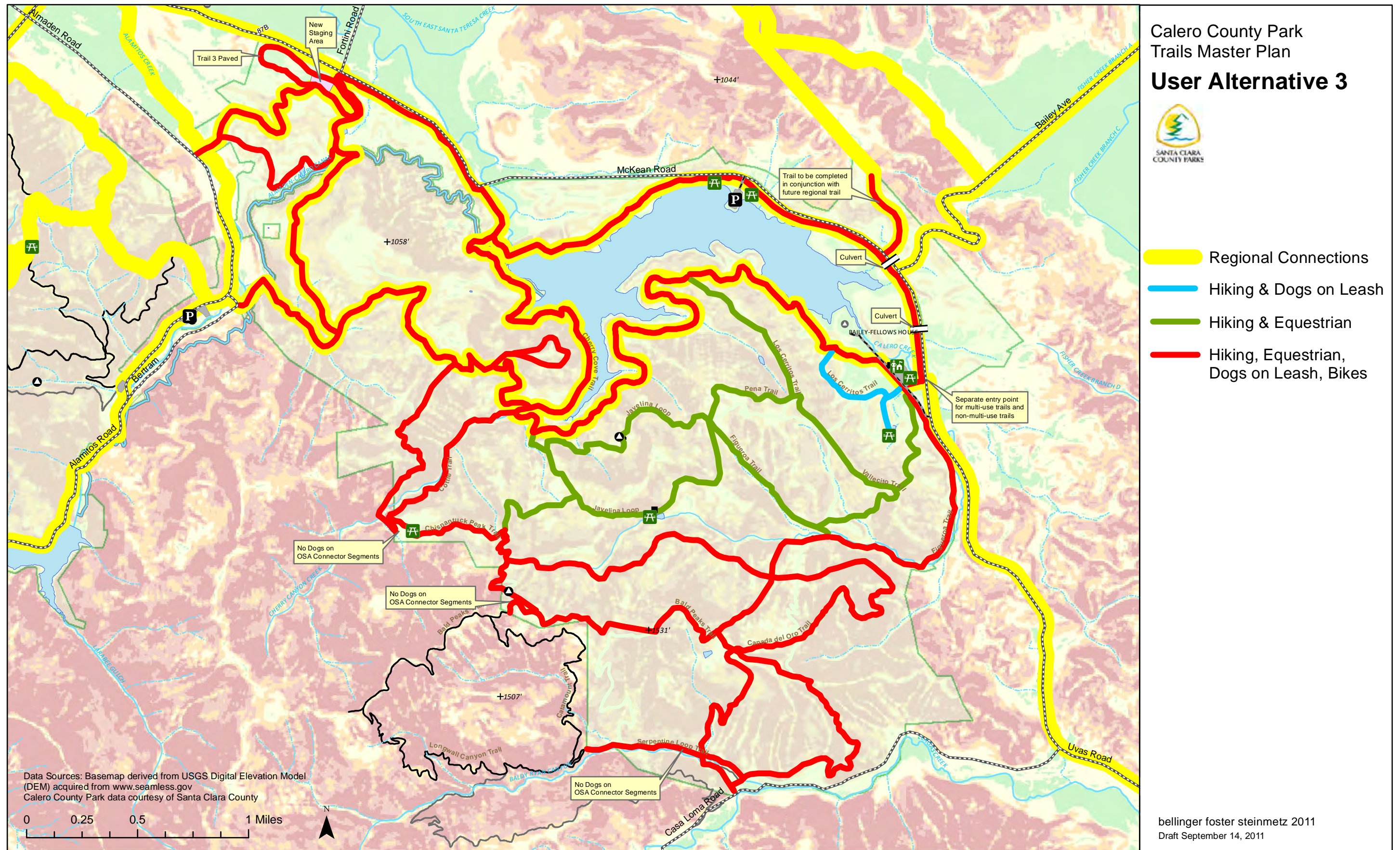


















## 5. EVALUATION CRITERIA AND EVALUATION



### ALTERNATIVES EVALUATION

#### *Alternatives Evaluation Criteria*

Evaluation criteria were derived from numerous sources, including the following:

- Guiding plans and policies, as noted in the Program Development Report  
This includes the County General Plan, Strategic Plan, Countywide Trails Master Plan Update, and the ongoing Draft Santa Clara Valley Habitat Plan. Consideration was given to the plans and policies themselves, as well as current practices of how these plans and policies are implemented.
- Community input (from the on-line questionnaires, open houses, and public meetings)  
Existing and potential users commented on the need for appropriate trail and trail-related facilities, including adequate staging areas, a variety of trail destinations and experiences, and the need to address safety issues, including emergency access.
- Input from partner agencies  
Partner agencies, such as the Santa Clara Valley Water District (SCVWD), want to make sure proposed trail use is consistent with their operational needs within the Park. Open space agencies, such as the Santa Clara County Open Space Authority (OSA), which owns and manages the adjacent Rancho Canada del Oro Open Space, want to make sure there is consistency and collaboration for trail uses, especially where trails potentially connect across agency boundaries. Mid-Peninsula Regional Open Space District and the Bay Area Ridge Trail organization want to realize cross-valley regional trail connections.
- Operational Considerations  
Operational considerations include provision of adequate staging areas and trail related facilities, allowance for emergency access and consistency with natural resource management objectives.

## APPLYING THE EVALUATION CRITERIA

Because the base trail alignment plan was designed taking into account many community comments as well as numerous site constraints and resource management objectives, and since all of the alternatives use the base trail alignment plan, many of the evaluation criteria did not differentiate between the alternatives. These are summarized in the following table.

**Table 5.1: Evaluation Criteria that did not differentiate between alternatives**

	Alt. 1	Alt. 2	Alt. 3
<b>CONSISTENCY WITH PLANS</b>			
<b>Consistent with County General Plan</b> The alternative is consistent with County General Plan trails policies as outlined in the Program Development Report.	✓	✓	✓
<b>Consistent with Countywide Trails Master Plan Update</b> The alternative achieves regional trail segments and connections through Calero County Park as outlined in the Countywide Trails Master Plan Update.	✓	✓	✓
<b>Consistent with Draft Santa Clara Valley Habitat Plan (Habitat Plan)</b> The alternative is consistent with the goals of the Draft Habitat Plan, and proposed trail uses are consistent with allowable recreational uses within potential reserve areas that may be located in Calero County Park.	✓	✓	✓
<b>CONSISTENCY WITH PARTNER AGENCIES</b>			
<b>Consistent with Partner Agency objectives</b> The alternative does not conflict with partner agency operations within Calero County Park, and uses can be coordinated with adjacent public open spaces managed by other agencies.	✓	✓	✓
<b>CONSISTENCY WITH COMMUNITY INPUT</b>			
<b>Emergency access and safety</b> Adequate emergency access is considered for all areas of the park, and user safety is considered through trail design standards, policies, and user education.	✓	✓	✓
<b>CONSISTENCY WITH OPERATIONAL CONSIDERATIONS</b>			
<b>Long-term operations</b> The alternative is consistent with long-term resource management objectives, and can be sustained over time within County Parks' anticipated resources.	✓	✓	✓

The following criteria did differentiate between the alternatives, and led to the selection of a preferred alternative.

**Table 5.2: Evaluation Criteria that did differentiate between alternatives**

	<b>Alt. 1</b>	<b>Alt. 2</b>	<b>Alt. 3</b>
<b>CONSISTENCY WITH COMMUNITY INPUT</b>			
<p><b>Adequate staging &amp; facilities</b>            User staging areas, diversity of user experience, and trails for all physical ability levels are provided. Alternative 1 is not considered to meet this criteria due to limited bicycle access within the park.</p>	—	✓	✓
<b>CONSISTENCY WITH PLANS</b>			
<p><b>Consistent with Strategic Plan Adopted Policy and Implementation Practices</b>            One of the clear goals of the Strategic Plan, and a primary reason to initiate a park-specific trails master plan, is to “Identify opportunities to increase multiple-use trails.” Alternative 1 does not meet this criterion due to very limited trails that are fully multi-use (accessible to bicyclists and dogs on leash).</p> <p>In implementing the policies of the Strategic Plan, County Parks has advanced the practice of multi-use trails. Recent implementation, as well as the experience of other park and open space agencies in the County, has demonstrated success in multi-use trail planning.</p> <p>With the broadest range of multi-use trails, Alternative 3 is considered to be the most consistent with this direction, while still providing an area of exclusive equestrian/hiking use.</p>	—	—	✓

Based on the evaluation noted above, Alternative 3 was selected as the draft preferred alternative best meeting all of the evaluation criteria. Following the public meeting on September 15 and additional public input, the draft Preferred Alternative was further refined. These refinements are described in the next chapter.



## 6. DRAFT PREFERRED ALTERNATIVE REFINEMENTS



### DRAFT REVISED PREFERRED ALTERNATIVE

Following the community meeting on September 15, revisions were made to the Draft Preferred Alternative to address user comments and to enhance long-term operational sustainability. These revisions were based on the following objectives:

- Simplifying some of the trail connections to minimize duplication of trails.
- Reducing parallel trails to reduce trail density, thereby enhancing natural resource protection and preserving undisturbed habitat.
- Consideration of the addition of a hiking-only trail.

These revisions are shown on the November 2, 2011 Draft Preferred Alternative map and were presented to the Parks and Recreation Commission meeting on that same date.

#### ***Rancho San Vicente Area***

- A hiking-only trail has been added to the radio tower area. This location has spectacular panoramic views of Calero Lake and the Santa Clara Valley. There is an existing maintenance road to the radio tower that must remain. The road is of very poor quality due to the rocky serpentine conditions of the area, but would be suitable for hiking. In the original plan, this area was proposed to be closed to public access due to sensitive natural resources associated with the serpentine outcrops. However, it was decided to consider hiking access only with signage and possible barriers to protect resources.

#### ***Calero Lake/McKean Road Area***

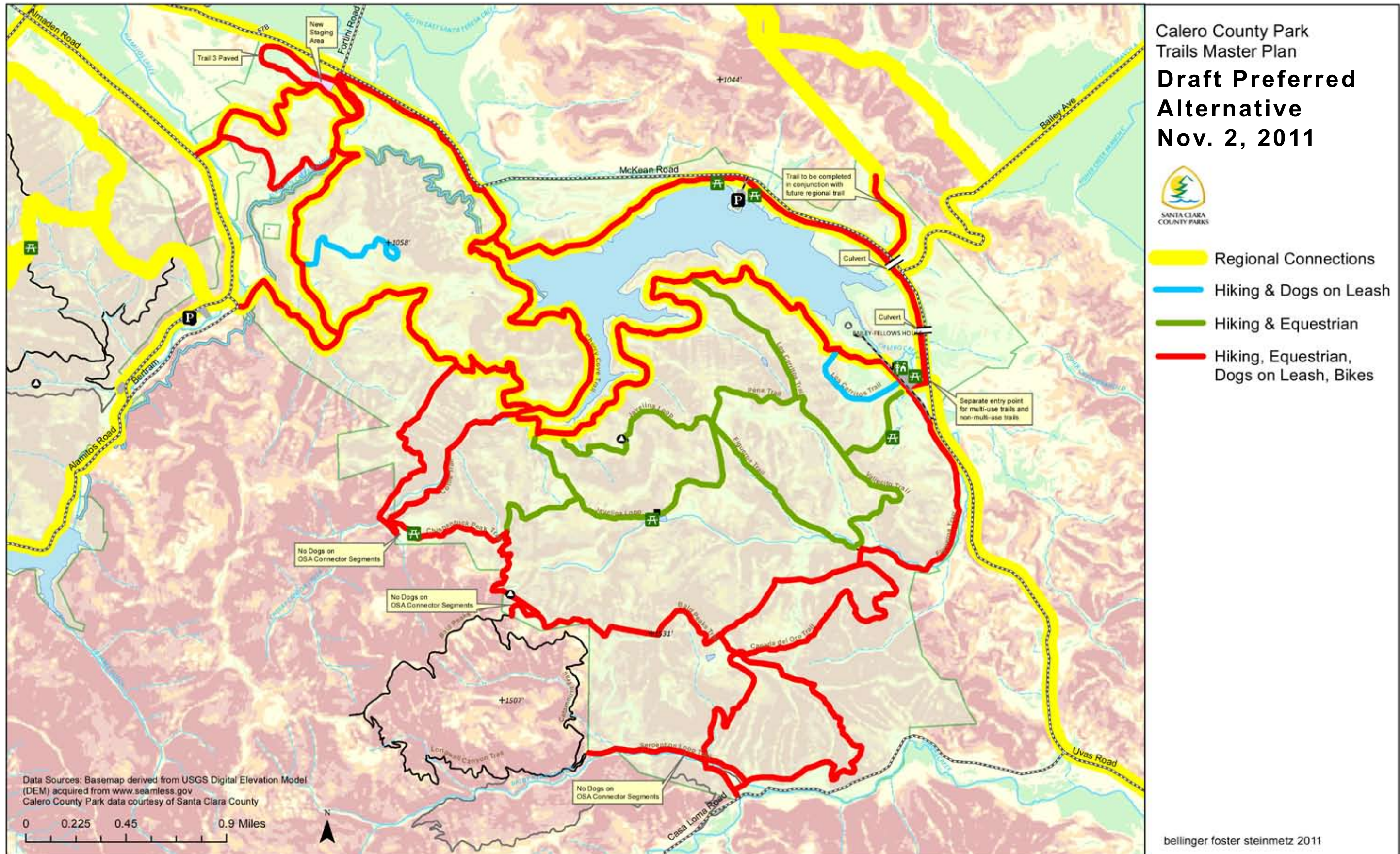
- The hiking only trail and equestrian/hiking trail access has been simplified as shown.

#### ***Rancho Canada del Oro/Casa Loma Road Area***

- One of the east-west parallel trails has been eliminated to simplify the trails plan, reduce trail density and protect natural resources.



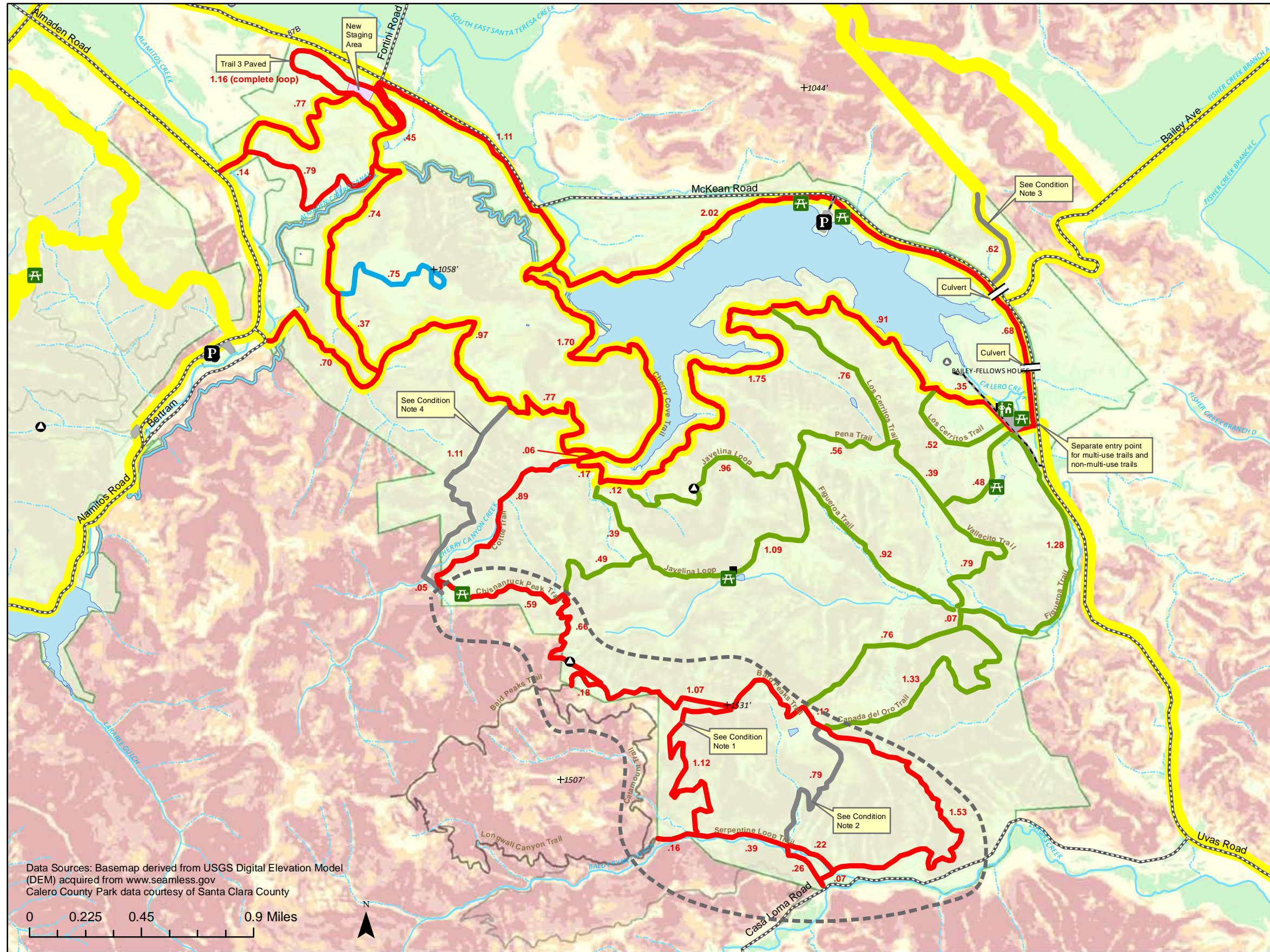












Calero County Park  
Trails Master Plan  
**Draft  
Preferred Alternative  
Mar. 7, 2012**



- Regional Connections
- Hiking & Dogs-on-Leash
- Equestrian, Hiking, Dogs-on-Leash
- Bikes, Equestrian, Hiking Dogs-on-Leash
- Future Conditional Trail Additions
- - - Dog on Leash Coordination with OSA

- Condition Notes:
1. Based on drivability of Catamount Trail (OSA).
  2. Add trail based on western Serpentine Loop trail segment being removed.
  3. Add trail based on regional trail connections being developed and trail easements being secured.
  4. Add trail based on acquisition of private properties.

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## Comments from the November 2, 2011 PRC Meeting

Following presentation of the November 2, 2011 Draft Preferred Alternative at the PRC meeting, comments were received from community and PRC members. These comments can be summarized into four major points.

### **1. Trail Use / “Peace of Mind”**

The equestrian trail experience is diminished by the anticipation of a potential conflict with bicyclists on shared trails. This is an issue for riders of all experience levels. While the November 2 plan shows a limited use area for equestrians and hikers, equestrians have requested that this limited use area be expanded to better meet the needs of equestrians of all ability levels.

### **2. Coordination with OSA**

More coordination is needed between OSA and County Parks regarding integration of trail uses across boundaries, especially related to dogs-on-leash, operational trail use and trail phasing.

### **3. Trail Width**

Many users would prefer wider multi-use trails than traditional single-track to give users space to “get out of the way” when needed.

### **4. Solutions that Work**

If there is an area of the park for limited use (for example, for equestrian and hiking use only), then it needs to be functional and enforceable with adequate signage, policies, etc.

## March 7, 2012 Draft Preferred Alternative

While comments 3 and 4 above will be addressed in the next (Master Plan) phase of the project, a revised Draft Preferred Alternative was prepared to address comments 1 and 2, and was presented to the Parks and Recreation Commission meeting on March 7, 2012. The March 7, 2012 plan was also posted on the County Parks website to give the public the opportunity to review it prior to the meeting.

### **1. Trail Use / “Peace of Mind”**

The revised plan expanded the limited use area for equestrians and hikers within the historic “core” area of the park prior to the acquisition of Rancho Canada del Oro and Rancho San Vicente. It also added dogs-on-leash as a permitted use in this area. Connections to multi-use trails will also allow equestrians and hikers opportunities to explore newer areas of the park as they desire.

This approach seems consistent with historic park use, while allowing newer areas of the park to be open to full multi-use, including bicyclists.

## **2. Coordination with OSA**

The March 7, 2012 plan identifies where County Parks and OSA coordination will be needed to improve the trails network and the user experience. The plan continues to designate multi-use trails that connect OSA properties, Calero, and other parks in the area.

The March 7 plan identifies the possible elimination of the western leg of the Serpentine Loop Trail to remedy issues of erosion, steep grade, and duplication provided by OSA's Catamount Trail, while acknowledging the OSA concerns that increased Catamount Trail use may have unexpected impacts. County Parks will continue discussions with OSA to define type and frequency of access as the plan proceeds further. If OSA/County Park's shared use of Catamount Trail is achieved and the western leg of Serpentine Loop trail is eliminated, the plan will refine connections between Catamount and Bald Peaks Trail.

The March 7 plan proposes dogs-on-leash on all Calero trails but recognizes that dogs are prohibited on OSA preserve lands, including the Casa Loma Road staging area. The plan recognizes that dogs on trails south of Bald Peaks Trails may need to be restricted or phased, and proposes a dog-on-leash study area to further define strategies with OSA to reconcile shared interests and individual agency policies.

## **Comments on the March 7 Plan**

The expansion of the limited use area for equestrians, hikers and dogs on leash in the March 7 plan resulted in the loss of a portion of a park-wide loop that is accessible for all park users, including cyclists.

Comments received from the community and the Parks and Recreation Commission focused on the importance of a park-wide trail loop that is open to bicyclists. The elimination of the multi-use park-wide loop diminishes the trail options for cyclists and may also be a safety issue as it would require bicyclists to use surface streets in order to complete a full park loop. In order to stay off surface streets, some cyclists might also be tempted to use unauthorized trails in the limited use area, which would then create a potential hazard for equestrians or hikers who would not be anticipating bicyclists.

It was noted that the limited use area for equestrians, hikers and dogs-on-leash is in keeping with the historic heritage of Calero County Park as a center of equestrian activity. At the same time, providing multi-use trails, including a full park loop trail, is important to be consistent with implementation of adopted Strategic Plan policies. Further refinements to the Draft Preferred Alternative should continue to explore ways of reconciling these two issues.

### ***Continued Refinement of the Draft Preferred Alternative***

Based on comments received at the November and March PRC meetings, the Draft Preferred Alternative will continue to be refined incorporating the following program elements.

### **1. Trail Use / “Peace of Mind”**

Accommodate bicyclists’ requests for a parkwide trail loop that does not require street use, and equestrians’ requests for a limited use area where bicycle use is restricted.

- Provide a multi-use parkwide trail loop for all users, including bicyclists.
- Continue to provide limited use trails (equestrians, hikers, dogs on leash).
- Continue to provide smaller multi-use loops, through-connections to other parks, and regional trail connections for all users.

### **2. Coordination with OSA**

To create a seamless trail experience across park boundaries, continue to coordinate with OSA.

- Improve access/align uses with the OSA trails network.
- Explore shared use of the Catamount Trail for park maintenance and operations.
- Determine dog-on-leash restrictions on selected trails with connections to OSA property.

### **3. Trail Width**

Incorporate standards for trail width into the Master Plan. Continue to consider multiple factors that influence trail width, including the following:

- User Preference
- Established Trail Standards
- Topography
- Soil Conditions
- Sensitive Habitat
- Natural Resource Management
- Emergency Access
- Service/Maintenance Access
- Construction methods

### **4. “Solutions that Work” / Trail Design and Policies**

Continue to explore solutions that encourage a positive and safe trail experience for all users through comprehensive trail design guidelines, standards and policies.

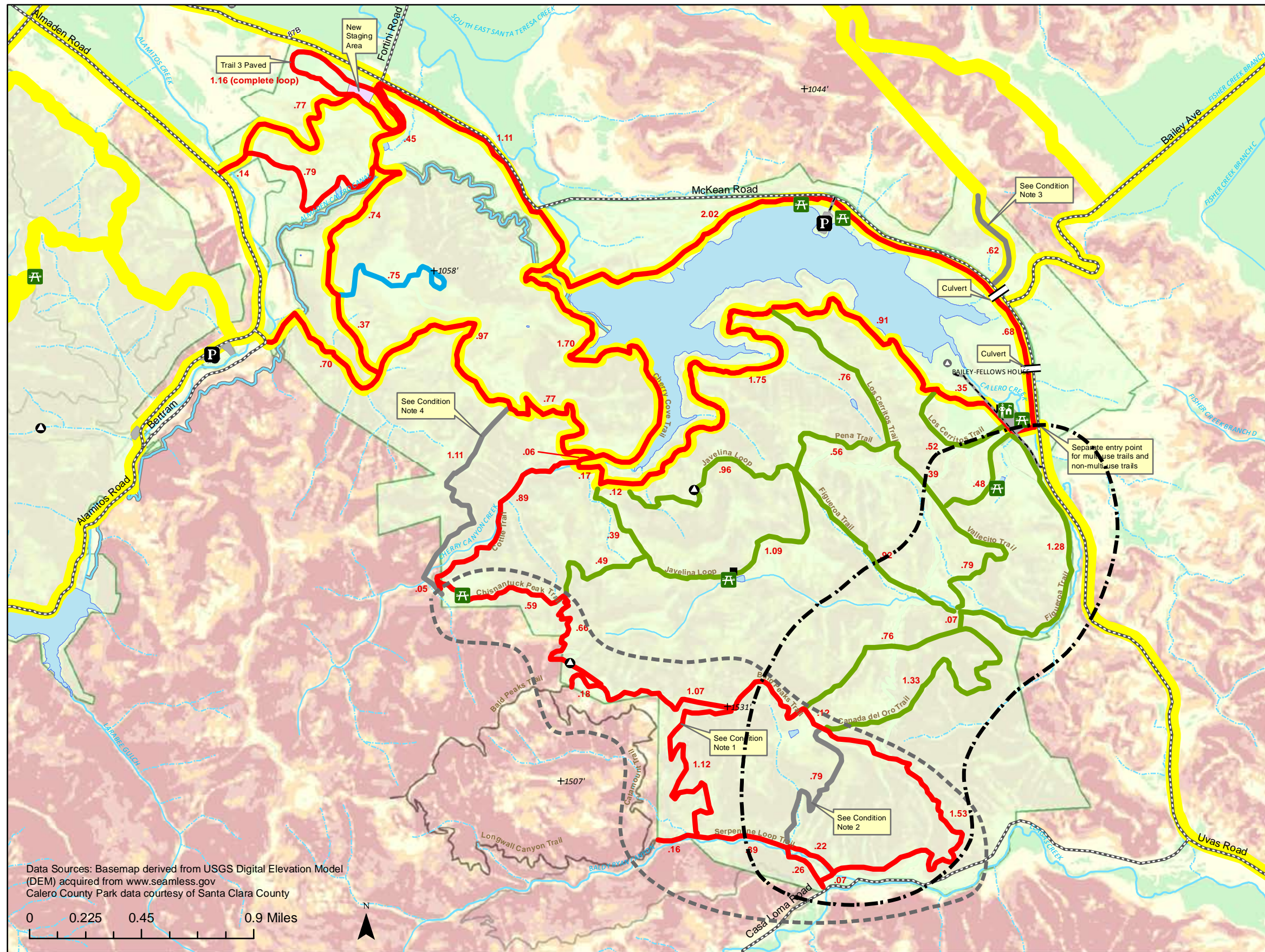
- Consider trail design factors such as sight lines and erosion control techniques.
- Consider trail placement that avoids sensitive habitat areas.
- Consider trail signage standards to address trail uses and etiquette.
- Incorporate policies regarding user education and enforcement.

Further refinement of the Draft Preferred Alternative will occur in the next (Master Plan) phase of the project.

Community input will continue to be integral to the process as the Master Plan moves forward.







Calero County Park  
Trails Master Plan  
**Areas for Further  
Trail Use Refinement  
April 2012**



- Regional Connections
- Hiking & Dogs-on-Leash
- Equestrian, Hiking, Dogs-on-Leash
- Bikes, Equestrian, Hiking Dogs-on-Leash
- Future Conditional Trail Additions
- Dog on Leash Coordination with OSA
- Trail Use Evaluation Area
  - Provide Multi-Use Parkwide Loop
  - Provide Limited Use Trails

Condition Notes:

1. Based on drivability of Catamount Trail (OSA).
2. Add trail based on western Serpentine Loop trail segment being removed.
3. Add trail based on regional trail connections being developed and trail easements being secured.
4. Add trail based on acquisition of private properties.

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Data Sources: Basemap derived from USGS Digital Elevation Model (DEM) acquired from www.seamless.gov  
Calero County Park data courtesy of Santa Clara County









## 7. NEXT STEPS



Image by Ron Horii

### NEXT STEPS

Following acceptance of the Alternatives Report, the next phase of the project will be the completion of the Calero Trails Master Plan. This will include:

- Continued refinement of the draft preferred alternative, with probable additional field verification of site conditions,
- Continued collaboration with partner agencies,
- Continued coordination with the proposed conditions of the Draft Santa Clara Valley Habitat Plan,
- Development and refinement of trail design standards and related policies, that further advance best practices for trail planning and design,
- Proposed phasing within County Parks' anticipated resources,
- Capital cost projections for phased implementation,
- Anticipated long-term operations needs, and
- Environmental analysis, in compliance with the California Environmental Quality Act (CEQA).

As the project progresses, the Parks and Recreation Commission (PRC) will continue to participate in the process through the PRC's Calero County Park Trails Master Plan subcommittee as well as through reports at regular PRC meetings.

The public will be able to review project progress and provide additional comments through project updates at the County Parks website and by attending future meetings.





# APPENDICES

- **Public Comment from May 21 and May 25, 2011 Open Houses (Community Meetings #1 and 2)**
- **Public Comment from the September 15, 2011 Community Meeting (Meeting #3)**
- **Alternatives Phase Field Investigation Notes**
- **Geologic and Hydrologic Report**



## Calero County Park Trails Master Plan Community Meetings #1 & #2 Comments

Saturday, May 21, 2011 • 9:00 am - 11:30 am • Santa Teresa Golf Club

Wednesday, May 25, 2011 • 5:30 pm - 8:00 pm • Almaden Community Center

- Support multi-use
- Charge fees for different uses
- Keep equestrian / hiker only trails
- Parallel paths, license plates for self-policing
- Connectivity with RCDO, Almaden, Sierra Azul, Santa Teresa, Open Space, Lake View Stable
- Staging area at Fortini and McKean
- More bike and hike trails
- Trail users messy
- Keep majority of park closed to bikes
- County to support clinics
- Bikers and equestrians don't mix
- Support dog on leash
- Need educational signage
- Alternate days / weekends for horses and bikes
- Night bike ride popular
- Need connection to public transportation
- Trails need shade, avoid blind corners
- Narrow trails avoid surprise
- Volunteers are willing to help
- Provide a place for horses to step aside on a narrow trail
- Bikers like steeper, harder trails
- Would like access to Calero by bike to see and comment
- Group campground in Rancho San Vicente
- Restroom at staging areas
- Trail loops
- Add wilderness campground at RSV
- Multi-use trail parallel to McKean
- Minimize number of trails
- Control poison oak
- Weatherproof trails
- Host interpretive /educational programs
- One way loops
- Multi-use trail around reservoir
- More restrooms
- Look into alternative energy
- Provide yield signs at intersections
- Rent out riding arena
- Charge fees for different uses
- Dogs off-leash area
- Asbestos in serpentine?
- Provide separate access for bikers and equestrians
- Move bikes out of Almaden; into Calero
- Multi-use is safer, because expecting bikes
- Cell phone access for emergencies
- Running only trails
- Consider landslides and erosion
- Lake revenue generating activities
- Volunteer days at park for specific purpose
- Provide call boxes
- Incident app for smart phone
- Dog-walking seminar at humane society
- Species identification on specific trails
- No staging off McKean - Not safe
- Better signage
- Stables at RSV
- Docent-led equestrian tours of RSV
- Streamline permit process
- What will be use of arena at Stables Area?
- Areas previously open are now closed
- Need cattle management for trails
- Give hikers/equestrians a soft trail (trample trail)
- Separate anecdotes from statistics
- Most issues can be mitigated by design
- Use trail designers
- I should not have to train my horse
- Provide rental horses
- Protect sensitive habitat

- Grazing and equestrian uses - no conflict
- Volunteers for trail building and maintenance
- Wider trails better for safety
- Dog owners don't clean up after dogs
- Tiered system of narrower trails by use
- Safety issue - hikers and cows
- Waste of money to do trails plan
- Jeep roads not good for trails
- Steep slopes not appropriate for downhill uses by horses or bikes
- Separate entrances for users
- Keep trails out of future flood zones
- Access to calero canal through scvwd?
- Keep cattle grazing
- Trail maintenance needed
- Provide water trough at ranger office
- Trail access for equestrians from boat launch
- Bikers vs. Moms with strollers
- Multi-use at new rsv, eq/hike at existing trails
- Post horse awareness info on web
- Narrow trails for hikers/dogs only
- Provide "extreme" trail for bikers
- Trail for horse carts
- Add to directional signs: "to" trail - destination
- Lots of interest in trail user types
- Some interest in trail loops, open space trail connections, and RSV trail access

## Calero County Park Trails Master Plan

### Community Meeting #3 Summary of Small Group Discussions

Thursday September 15, 2011 • 6:00-8:30 pm • Almaden Community Center

Background/Comment Format: A presentation of the Calero Trails Master Plan work-to-date on the development of project alternatives was made by County Parks staff and design team consultants at Community Meeting #3. After the presentation, meeting attendees were asked to participate in small group discussions, focusing on five topics related to the presentation. Additional comments were also received via written comment cards and direct correspondence to County Parks staff. For reference, the small group discussion topic questions are reprinted below:

1. *Please comment on the base trail alignments*
  - a. *Any suggestions to improve the trail alignments?*
  - b. *Comments on staging areas?*
  - c. *Comments on regional trail connections?*
  - d. *Any other comments?*
  
2. *Please comment on the alternatives evaluation criteria and checklists*
  - a. *Anything to add or delete to the criteria?*
  - b. *Any changes to the checklists?*
  - c. *If you think a different alternative should be the preferred, how would you support your opinion with the evaluation criteria?*
  
3. *Please comment on the draft Preferred Alternative*
  - a. *Any suggestions to make it better?*
  - c. *Anything to add, remove and/or modify in the draft preferred alternative?*
  
4. *Please comment on the ideas to incorporate user safety into the plan*
  - a. *What information is useful on a trails map to help you decide which trails are appropriate for you? Trail steepness? Trail width? Trail users? Trail surface?*
  - b. *Would you participate in an education program to train bicyclists and equestrians on shared trail safety and etiquette?*
  - c. *Do you know any groups that might help organize such training in partnership with County Parks? Where/how often should such training occur?*
  
5. *Any other comments on the Calero Trails Master Plan?*



## **Calero Trails Master Plan –**

### **Community Meeting #3 Summary of Small Group Discussions**

Almaden Community Center - September 15, 2011

#### **Table #1**

- Was Alternative 3 pre-determined and the criteria established to make that the preferred alternative?
- There was a concern that there are no public members on the Technical Advisory Committee (TAC)
- Many participants at the table felt that Alternative 3 is the least safe
- Most accidents go unreported
- Bicyclists do not control their speeds on trails
- Consider an external multi-use trail (outside of the Park) to make the regional connections
- Bicyclists have been banned from Griffith Park due to safety concerns
- The walking trail passes near a shooting range
- Trails are too steep for bikes and horses to share
- The culvert is large enough to walk a horse through
- Common theme – future trail connections
- Wherever prohibition of bikes to horse trails, there should be a physical barrier
- Use topo maps to show landscape/height of trails
- Signage needs to be clear
- Open Rancho San Vicente!
- Designate areas for trailers (Equestrian only)
- Allow bike representatives and horse representatives on a Task Force or Technical Advisory Committee
- Get information out at all staging areas when trail use is changed
- Post speed limits on hills/steep trails
- Design trails properly – forcing bike to not go fast if condition of trail is steep
- Look at profiles of trails especially for bikes
- At gates post signs that users are liable for injuries of others
- Do exterior trail and leave inside of park alone – cost savings
- Don't do multi-use trails until all regional connections can be made
- Leave trails more natural
- Curves and bumps slow down bicyclists

- Develop an annual trail user safety program – involve ROMP
- Air ambulance difficult to get into park
- Cut foliage next to trail where needed to improve site lines
- Alternative 3 is least safe and should go in shredder
- Will special events (endurance rides/bike events) be allowed?

## **Calero Trails Master Plan - Community Meeting #3**

Almaden Community Center - September 15, 2011

### **Table #2**

- Narrow trails with switchbacks are good for horses.
- Equestrians wanted a place to go without bikes (Young horse owners)
- 6 miles is not a lot of trails for a horse
- Is there an option of all multi-use?
- Consider more dog access
- Consider alternate days for bikes/horses, etc.
- Quantity of trails needs to be balanced with natural resource needs. All linkages and trail density within reason.
- More trails leads to more dispersal of trail users.
- Staging areas will help disperse uses.
- Open up South of Bailey to loop for dogs.
- Alternative 2 also meets parks direction/policy
- Young horses are startled by something coming out of “nowhere” fast
- Make it obvious that the area has use restrictions
- Print trail etiquette on maps
- Trail watch is key (staff to educate users)
- Trail watch is key (verbal) bikes coming up horses and other users
- Separate entry points at Calero Entrance – what does that mean?
- People shooting guns; any issues?
- What are the amounts of different types of trails (single track vs. roads)?
- Prefer single-track
- Showing trail ratings on trail maps is a low priority. Education is more important with different user groups: equestrians, bicyclists, hikers, dogs on leash, etc.
- Consider separate rule print-outs for each type of trail user vs. all on rules on map on multiple pages.

### Calero Trails Master Plan - Community Meeting #3

Almaden Community Center - September 15, 2011

#### Table #3

Participants: 4 Hikers/Bicyclists; 1 Hiker/Bicyclist/Equestrian

- Some felt that the extreme alternative was taken – Alternatives 1 and 3 seen as extreme, 2 would have been less extreme.
- Others were comfortable with Alternative 3, the 'Preferred Alternative'. The mix of trail uses was reasonable.
- Representative from Bay Area Ridge Trail commented that the goal of his organization is full multi-use trails throughout the Bay Area Ridge trail and connector trails.
- All in favor of regional connector trails - Notably to Santa Teresa, and along McKean Rd.
- Multi-use trails are better overall - Easier to manage, from an enforcement point of view, and from perspective of explaining the park use. Also simplifies the design and maintenance of trails.
- Need for bike trails that are flat enough for more elderly riders. She biked when younger, but is concerned that the routes in preferred alternative would be too steep for older bicyclists. To address that concern, she made one comment on the Preferred Alternative map, expanding multi-use onto 28A and part of Javalina Loop trail, to create a flatter bike loop.
- In favor of the new Fortini Road staging area. Good way to connect to Santa Teresa Park and beyond.
- The problem is not bikes and dogs, but *irresponsible* bikers, and dogs off leash - A small, but visible minority. Enforcement of trail use for bikes and dogs could be difficult.
- Build gates to keep bicycles out of equestrian areas, with signs that say "equestrian training" to emphasize that these trails are designated specifically for equestrian use.
- Penalties for violations of trail use should be higher, to make a stronger disincentive - for example, confiscating bicycles when riding on non-bike trails.
- Catamount Trail is very steep and windy. Is it really drivable for patrol access or for emergencies?
- Several participants agreed that multi-use trails are built too wide, wider than necessary. Tend to be 8 - 12 ft, when single track 2ft width would be fine, with wider areas (6 ft) for passing or blind zones. Over time, the width of the use pattern determines with width of the trail anyway. So a 6-foot trail may narrow to 2 feet over time, for example. The destination is more important, narrow trails are fine. Suggestion that narrow trails can be created with roto-tillers, don't need large equipment.
- The proposed new entrances at Almaden Rd and Bertram Rd are hugely valuable to the community.
- Close trails when a major event is occurring on those trails, to avoid conflicts with regular users.

- Conduct a survey on equestrian use at Calero, for example the Rangers can count parked horse trailers. Need to know the number of equestrians to evaluate the proposal better.
- Would like to see back country camping in Calero along a multi-use trail (eg. Cottle trail?) To connect with future back country camping at other parks accessible by connector trails.
- To improve the park experience, get Rangers out of trucks. It's intimidating to be passed by trucks when hiking. Rangers are less approachable. If authorities were on the ground (on foot, horse, or ATV) it would also be easier to spot illegal activity (eg. marijuana growing).
- To provide challenging opportunities for bicyclists where they won't conflict with other users, carve out a small Skills Park in Calero, for bicycle stunt practice.
- Dogs on leash policy has worked well at other County parks - Should continue this policy at Calero.
- A fast moving bike can disrupt the hiking experience. It would be nice to have a single track trail for hikers only.
- Despite the disagreements, in the end a multi-use plan works out. There will be people who sometimes violate the rules, but overall it works out.



## **Calero Trails Master Plan - Community Meeting #3**

Almaden Community Center - September 15, 2011

### **Table #4**

- Why do all users have/need access to all trails?
  - Equestrian only
  - Bicycle only
- Mandatory training: Understand implications and severity of possible and occurring injuries
- Volunteer trail patrols, sometimes hikers are the problem with crosscutting
- ROMP & IMBA: Possible training providers
- Harvey Bear seems to be successful: Set culture early
- Like design strategy: prevent conflict
- Casa Loma Road deteriorating: Who is responsible? City has no money.
  - Environmental impact created by more users
  - Diffuse by multiple staging areas
- Casa Loma Meadow is in view shed of adjacent resident
  - Does not want expansion/other staging areas
- Alternative 2: Better users balance.
- Single track trails do not offer a way out.
- 34A is a beautiful trail - don't want it changed but not suitable for shared use.
- There is a shooting range in proximity to one of the trails.

**Calero Trails Master Plan  
Public Outreach Comments**

Comment
I am impressed with the thoroughness and rigour of the evaluation based on clearly stated goals taking into account established principles and user-population trends.
I really wish we had one local park that was equestrian only. If that can't be done educate users to communicate.
Would like to see one single track hiker only trail ala the New Almaden Trail in Almaden Quicksilver. Bicycles dramatically alter the experience of hikers as well as equestrians. If you hike for peace and quiet to experience nature, a fast moving bike can be very disruptive.
No multi-use trails if can't provide an out for safety. Enforce rules! Don't leave it up to the people to choose which trails they go on. Training regarding trail etiquette. #2 alternative is more equally balanced between users.
I prefer alternative #1. Any new use of Casa Loma Road will continue to deteriorate a road which is already in poor condition.
Vote for alternative #2. Trail use rule cards for each specific user type. Much improved trail signs: large; clear rules of the trail; emergency instruction; split trails where conflicts often occur (small graphic on comment card); Room for 5-6 camp sites on ridge above Fish Camp; Fire management - prescribed burns.
Please ratify proposed plan (#3). More multi-use = better. Bikes need access to narrow trails, and should not be subject to a presumed closure for proposed trail plans.
E-mail 9-16-2011: Here is my update, which I posted to MTBR: <a href="http://forums.mtbr.com/california-norcal/calero-park-planning-meeting-708614-post8453435.html#post8453435">http://forums.mtbr.com/california-norcal/calero-park-planning-meeting-708614-post8453435.html#post8453435</a>
Save \$ create an exterior shared connecting trail when other parks are ready to connect. Alternative #3 is not good, not safe. Needs more signs.
Culverts are big enough for horses! No equestrian on technical task force! No task force - so we need to express our feeling loudly tonight.
I hate horses, I hate bikes & I hate dogs. Close the park! Oh yeah - I hate hikers too.
Noted on 'Alternatives Evaluation Criteria' page: Add safety, shooting range. Management team discussion trend in Co. Parks. Co. Parks policy - and on Strategic Plan.

**Calero Trails Master Plan  
Public Outreach Comments**

<p>Would like a bit more equestrian only trail something between Draft Preferred &amp; Alt 2 - maybe including Cottle as equestrian only. Alt 2 is implementing multi-use that's a lot of trails to open to bikes. Make it clear where equestrian only not by signage but also physical barriers to make it clear its not multiuse. Education key; good signage key. Maybe single page per user group as education handout so its very clear. Should do a "Romp-Stomp" event when go multi-use for education &amp; publicity about multi-use/cooperation.</p>
<p>Letter, dated 9-16-2011 summarized: Open SVC first; use minimal money to create perimeter trail potentially to connect to vicinity parks; maintain Calero uses as are. Current park trails are not maintained to allow for emergency vehicles; unidentified heli pads. Parks should focus on maintaining existing facilities (more cost effective): water troughs, parking lot (mole/gopher holes). Use for income: existing arena and proposed Bailey-Fellows House picnic area.</p>
<p>Letter, dated 9-23-2011 summarized: writer is an equestrian but also uses parks for hiking and biking; feels she represents equestrian community opinions. Calero previously underutilized: good to add many new trails. Alt #2 satisfies needs and wants of all users, feels that Alt #3 favors bicyclists. In the past Calero has provided the ultimate in trail riding experience. Has had some bad experiences with fast approaching, discourteous bicyclists resulting in ambulance rides for equestrians. Regardless of how a calm horse reacts to a courteous bicyclist, it is nearly impossible to predict how a calm horse will react to a discourteous bicyclist. Therefore, equestrians can never completely relax when riding in a park that allows bicyclists. Suggestion: accept Alt #2, or retain core trails of Calero Park for equestrians/hikers only plus designate RSV trails for bikes/hikers only with regional connections open to all users. Suggests monetary savings.</p>
<p>The County presented three alternatives. Alternatives one and three are the extremes - the fair solution would be to choose alternative two. Right now it is the one refuge equestrians have to ride w/o fear of bikes and/or dogs.</p>
<p>I have been riding in this area for 35 years. Only can feel save in Calero because I've had bicycle accidents in Quicksilver.</p>
<p>Being an equestrian for my entire life, I support all phases of multiuse trails, hikers, bicycles, horses, etc. but with rules.</p>
<p>I would like us to continue to focus on connecting trails throughout our parks. I would like us to incorporate Calero tunnel in the plan. I would like us to be able to camp overnight in the future. Focusing on some trails without bikes is good. A dedicated horse camp would be lovely. We also need a rental stable as well. Let's incorporate Rancho San Vicente into the plan.</p>
<p>Safety, safety =&gt; courteous</p>
<p>Alternate days</p>
<p>Alternate trails</p>
<p>Education</p>
<p>Joint events</p>

**Calero Trails Master Plan  
Public Outreach Comments**

<p>I would like to see Calero remain for equestrian use only. If that is not possible, trails should be designated "equestrian only".</p>
<p>As a horse owner, I beg you please do not approve this. Horse owners have few places to ride. We get along fine with hikers and joggers. Bike riders often do not yield to the horses. I avoid parks that have bikes allowed. I believe this will cause grief for both parties. Bike riders can ride everywhere, horse riders cannot. Please keep Calero BIKE FREE!</p>
<p>As a young rider, I don't like the idea of bike riders with horses. I've fallen off on the trail because a bike rider spooked my horse. Bike riders don't respect the equestrian only trail.</p>
<p>Since I am young I feel that bike riders on trails are scary. I hate when horses spook so it doesn't help when you are in an unusual environment and your horse spooks. I think that there should not be any bikes on the trails.</p>
<p>I am concerned as a horse rider: the bike riders are going too fast and I have come close to being hit several times. This worries me greatly. I would no longer be able to ride with my daughter on her horse. This is a bad idea, bikes have the right to ride everywhere. Horse owners do not. Please consider my right to ride a horse safely.</p>
<p>E-mail 9/24/11: Again, on the meeting, well done. A class act.</p>
<p>E-mail 9/17/2011 (in response and supplemental to ...): I'm glad Chris wrote such a thorough account. A few additions. I was impressed with the clear presentation of the proposals and their systematic rigor considering environmental effects, user access, safe and enjoyable trail sharing, access to neighboring trails, consistency of rules with neighboring land managers, lessons learned from trails built in the county, trail experience preferences among user groups, macro trends in recreational usership, etc. Plan 3 is SCC's preference, as was clearly stated in the presentation and presented at the discussion tables. Discussions in our group included education of the user groups who will be sharing these wonderful resources, (auto) traffic and parking consideration, and details of Plan 3's possible implementation. Our friend Bern Smith from the Bay Area Ridge Trail was there. He, John from SCC and I discussed a few other topics a the end including the wonderful success of ROMP and Stomp in the past, the power of volunteer trail building. Personally, I am very pleased with Plan 3. It includes a trail like wheel-chair friendly Llagas Creek Loop in Rancho Canada der Oro, a couple of loops for less experienced equestrians (slightly more extensive than the current multi-use trail system in RCdO) and many miles of multi-use trail offering good connectivity with friendly Llagas Creek Loop in Rancho Canada der Oro, a couple of loops for less experienced equestrians (slightly more extensive than the current multi-use trail system in RCdO) and many miles of multi-use trail offering good connectivity with neighboring trails. Well done, SCC!</p>
<p>E-mail 9/17/2011: I do have a suggestion for foot path in Calero. At the junction of the Pena Trail and the Javalina Trail, there is an unofficial path that goes straight up the hill. This leads up to a hillside that has one of the best displays of wild flowers in the Bay Area. Besides the usual flowers that grow everywhere, I have found flowers that are rare enough to force me to my flower books to identify them. It is steep and may not be possible but I did want to mention it. I also noticed in your master plan there was a possibility to lower the grade of some of the steepest trails. I am sure that would be nice. However, some of the Calero trails such as the Chisnantuck Peak Trail or the Bald Peaks Loop is one of the best training hikes for my annual backpack and I would miss it if it became too much of a wimpy hike. It will be nice to hike between Quicksilver and Calero when they become connected. As these trails become longer and more connected, is there any thought to build some backpacking camps along the way? A week long backpack would appear to be more possible on the Bay Ridge Trail if so.</p>



**Calero Trails Master Plan  
Public Outreach Comments**

E-mail 9/24/2011: Again, on the meeting, well done. A class act.
E-mail 9/6/2011: I live in the east bay. I went to Rancho Canada del Oro recently for the first time to ride my bike and enjoyed it a lot. I found the trails to be pleasant and very well maintained. The only downside was that there was not much to ride. This is why I would like to go on record to support opening Calero County park to cyclists. As an aside, I understand that there is strong resistance from equestrians to opening Calero to cyclists. My one time at RCDO, we shared the trails with a horse riding group, and the encounter was pleasant for all involved. So, if equestrians can share the trails at RCDO with cyclists, they should be able to do the same at Calero.
E-mail 9/12/2011: I will be traveling on business and unable to attend in person. I have been a fan of Calero for many years, and was one of the volunteers who helped build the Valety Trail (a few years ago). Just this past weekend, I ran the Pena, Javelina, Cottle House, Bald Peaks and Figueroa trails. (A good workout). I did see the announcement of the meeting posted on the marquee at Calero. Is there anything you can send or post to the website so I could review and voice my opinion?
E-mail 9/13/2011: I am an endurance horse rider and LOVE how Calero is closed to dogs and bikes. I have been told that no matter how many folks I get to sign or fill out forms explaining why having one safe park for horses, it doesn't matter. Can you tell me if that is the case? Will bikes be coming to Calero? I wish I could come but have to work that night.
E-mail 9/15/2011: Great presentation!!! You are such pros !!!
E-mail 9/16/2011: Thanks for hosting the meeting last night. I've enjoyed being part of the planning process.
E-mail 9/16/2011: The public meeting last night was pretty good, I thought. Your staff has done more than enough preliminary work, so the comments from the public are more about details than broad themes (except for the basic like/dislike that always crop up).
E-mail 9/16/2011: The Parks department presented a proposed plan -- Alternative #3. Two groups approved the plan. Two wanted it shredded because it only provided 6 miles of exclusively equestrian trails. Needless to say Horse persons (primarily ladies) outnumber mtb 2 to 1. The way the small group discussion groups worked out was the two parks commissioners that were there end up a the tables that were almost exclusively horse persons.
E-mail 9/16/2011: I attended the first public hearing on Calero County Park but didn't make it to yesterday's. I understand there are three options under consideration, and of course I favor the one with the most generous bicycle access. Here's my problem, though. I feel that I can't comment intelligently on any of the options (except maybe the virtually - no-bikes option) because I have no sense of the trails that would remain off-limits to bikes even under option three. It would be laborious to spend all day out there hiking around them, and even then, one doesn't get the feel for them that one does on a bike. It could be that even under option three, the trails that cyclists most would like to use will remain off-limits. Without seeing them, it's impossible to know if this might be the case. Could cyclists not have one day of total access so that we can survey all of the trails and be able to offer more valuable input? With advance posting at trailheads and other means of communicating this event to the public, it out to be workable. It would be very helpful.

**Calero Trails Master Plan  
Public Outreach Comments**

<p>We should do this now, while planning is actively underway. Once the plan is set in place, it'll probably be a generation until the county parks staff will have the energy and desire to once again undertake the necessary work.</p>
<p>E-mail 9/16/2011: I thought of an alternative proposal. Maybe you could informally allow two or three of us to ride the Calero trails on a designated day. This would spare the effort of arranging for access by all interested cyclists for one day and having to post it trailheads. You could alert park staff and send me an authorizing e-mail, which the two or three of us would then carry and show to any other park user who asks why we're on the trails. In June of 2003 the Assistant General Manager for Operations at EBRPD followed this procedure and a group of mountain bikers surveyed the no-bicycles Ohlone Wilderness Trail, carrying the letter of authorization.</p>
<p>E-mail 9/16/2011: Bicycles should not be allowed in any natural area. They are inanimate objects and have no rights. There is also no right to mountain bike. That was settled in federal court in 1994: <a href="http://mjvande.nfshost.com/mtb10.htm">http://mjvande.nfshost.com/mtb10.htm</a> . It's dishonest of mountain bikers to say that they don't have access to trails closed to bikes. They have EXACTLY the same access as everyone else -- ON FOOT! Why isn't that good enough for mountain bikers? They are all capable of walking ... A favorite myth of mountain bikers is that mountain biking is no more harmful to wildlife, people, and the environment than hiking, and that science supports that view. Of course, it's not true. To settle the matter once and for all, I read all of the research they cited, and wrote a review of the research on mountain biking impacts (see <a href="http://mjvande.nfshost.com/scb7.htm">http://mjvande.nfshost.com/scb7.htm</a> ). I found that of the seven studies they cited, (1) all were written by mountain bikers, and (2) in every case, the authors misinterpreted their own data, in order to come to the conclusion that they favored. They also studiously avoided mentioning another scientific study (Wisdom et al) which did not favor mountain biking, and came to the opposite conclusions. Those were all experimental studies. Two other studies (by White et al and by Jeff Marion) used a survey design, which is inherently incapable of answering that question (comparing hiking with mountain biking).</p>
<p>I only mention them because mountain bikers often cite them, but scientifically, they are worthless. Mountain biking accelerates erosion, creates V-shaped ruts, kills small animals and plants on and next to the trail, dirves wildlife and other trail users out of the area, and worst of all, teaches kids that the rough treatment of nature is okay (it's NOT!). What's good about THAT?</p>

# Calero Trails Master Plan

## Alternatives Site Review Summary



June 2011  
*Draft*



Santa Clara County Parks

**Bellinger Foster Steinmetz**  
*Landscape Architecture*

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## **INTRODUCTION**

On June 7th and 8th, 2011 reconnaissance field trips of Calero Park and the Rancho San Vicente were conducted. The goal of the site visits was to field verify proposed trail realignments, and to broadly field truth potential new trail corridors. Efforts were guided by the understanding that a number of possible user scenarios will need to be represented in the alternatives development phase of the project, hence the field reviews needed to consider all possibilities for users. An account of the field review findings is captured in the following image report and the annotated map.

## PHOTO SUMMARY (Day One)

**Stop #1 at McKean entrance to RSV:** Following Mc Kean Road west from the Park Ranger Station we entered RSV at the gate just east of Fortini Road.

**Topics of Discussion:** New staging area, a whole access trail, a rest area at the former ranch house site above the knoll and re-alignment of site entry point with Fortini Road; possible relocation of cattle branding operation



**Stop #2 @ Above Canal Crossing:** Following the service road we proceeded south to a point just above the bridge over the SCVWD canal. The site offered good views upon the proposed whole access/new staging area at McKean Road entry. A road adjacent spring fed vernal pool supported lush habitat and feeds an irrigation line that gravity flows water to lower laying pasture areas.

**Topics of Discussion:** Habitat protection, possible link/usage of canal service road as trail





**Stop #3 @ Old Foot Bridge over SCVWD canal:** Continuing south we went off road following an old overgrown road alignment.

**Topics of Discussion:** Acquisition of isolated parcel; refurbishing dilapidated foot bridge; potential trails west of canal; need to avoid residential developments; protection of vernal pool habitat; maintain existing culvert; illegal grading and soil dumping across valley





**Stop #4 @ Radio Tower:** After returning to the service road we made a sharp turn uphill over a very rugged stretch of road to arrive at the radio tower. The site is dominated by serpentine soils, rock and associated plants. Views onto Calero Reservoir and the valley beyond are spectacular.

**Topics of Discussion:** Views; control of users in sensitive habitats; trail re-alignments along reservoir ridges (Los Cerritos trail); 'perimeter trail' alignments along existing service roads between the reservoir and McKean Road from Cherry Cove Trail to Ranger Station; trails following contours around knolls rather than over the top.



**Stop #5 @ high above Cherry Cove Trail:** After backtracking on the tower service road spur we continued further south and stopped along a low spot on the road to observe possible connections to Cherry Cove Trail below. We observed a trail remnant at the tree line below us and visually assessed possible connections. Some narrow trample paths through the tall grass are created by grazing cows who are experts in finding the shortest and least steep routes to watering stations.

**Discussions:** Avoidance of cow “highways”; will site users be happy with lower vista points away from sensitive serpentine habitats?





**Stop #6 High above Cottle Trail:** Further down the main service road we branched off going east and down hill arriving at another good vista point above Cherry Cove Trail. A short hike took us in the opposite direction and we ended up just uphill from the intersection of Cherry Cove Trail and Cottle Trail.

**Topics of Discussion:** Avoid old road alignment down to Cottle Trail on account of land slides; trail alignment with contours to overcome steep grade; connections to more good vista points





**Stop #7 @ Creek:** We backtracked to stop #5 and followed another existing road alignment downhill in south-westerly direction. The road narrowed and we continued on foot to the bottom of the hill. Dense tree cover provided much desired shade. A couple of stepping stones lead across the creek which has a relatively steep embankment on one side. A Grapple-tail dragonfly basked on a stone and wildflowers adorned the creek and road edges.

**Topics of Discussion:** Sensitive habitat with endangered species along existing service road – how to protect? County has standard bridge design; opportunity to connect to abandoned road segment.





## PHOTO SUMMARY (Day Two)

**Stop #8 @ Serpentine Loop Trail:** From the Ranger Station we followed McKean Road south, then Casa Loma Road west to trail entry gate across from the OSA staging area. The first segment of uphill trail segment is steep and rugged and an alignment alternative is desirable. Unfortunately, the immediate adjacent topography does not lend itself to another approach. Catamount Trail is well visible from some points. Trees on both sides provide great shade. Once beyond the very steep section we stop to evaluate alternate alignments. At this point trees are receding and views open into the lower valley and onto the upper reaches of Canada del Oro.

**Discussions:** Shared access to Catamount Trail (OSA property) to bypass bottom section of Serpentine Loop Trail; a possible cross-connection between Catamount and Serpentine just beyond the steepest initial incline; possible realignment of Serpentine Trail within Calero



**Stop #9 @ western end of Bald Peaks Trail ( w/i Calero Park):** After we reached the top of the Serpentine Loop Trail we stayed west onto Bald Peaks Trail. Past the Chisnantuk Peak Trail intersection we continued until just east of Cottle Trail. Along this very exposed trail (a challenge during hot summer days) incredible vistas open onto Canada del Oro. A short hike to the top of a knoll provided even wider vistas onto the reservoir, the Santa Clara Valley and mountain ranges beyond.

**Topics of Discussion:** Mid-elevation trail connection from Chisnantuk Peak Trail to Canada del Oro Trail eliminating the steep Chisnantuk Peak Trail section; alternate or in addition a less steep trail connection from Chisnantuk Peak Trail back up to Bald Peaks Trail; trail connection to Bald Peaks Trail (OSA); OSA trail signage guiding people onto short 'dead end' multi-use trail.



**Stop #10 Pond south of eastern portion of Bald Peaks Trail:** Backtracking on Bald Peaks Trail beyond the Serpentine Loop Trail intersection we reach gentler terrain with a view onto a seasonal pond a little ways below the trail. A short hike past the pond takes us into serpentine conditions and we find ourselves surrounded by a big stand of Manzanita shrubs. Perched on rocks we can make out the remnants of an old service road further down the valley. A trail connection to the bottom of Serpentine Loop trail might be possible from here. A rattler hidden in a boulder weir on the edge of the pond reminds us to step lightly.

**Topics of Discussion:** Habitat protection; intermediate trail loop connection to Serpentine Loop Trail





**Stop #11 just above the 'Cheese Wheel' section of Canade del Oro Trail:** Just beyond the lake stop we got onto the east-west Canade del Oro Trail segment. The trail is narrower and shady with vegetation including Poison Oak reaching up to the car windows. John pointed out a grove of Rhamnus. We lost some elevation before reaching the north-south section of Canade del Oro Trail. Just south of the intersection we take a very short hike to a hidden old service road segment that could become part of a new Canade del Oro Trail alignment. Because of topographic constraints the new alignment would be suitable for hikers only.

**Topics of Discussions:** problems associated with the steepness of the 'Cheese Wheel' trail segment; difficulty in finding an alternate trail alignment (portions were scoped in the past)





**Stop #12 @ Bottom of Serpentine Loop Trail :** Back on Bald Peaks Trail we returned to the valley via the Serpentine Loop Trail. Enroute we had an opportunity to observe where the Serpentine Loop Trail might connect to the Catamount Trail. Before crossing the creek once again we stopped to evaluate where the new Bald Peaks Trail/Serpentine Loop Trail interim loop might reach the valley. We also evaluated the area for a new staging area and a whole access trail loop. Some bridging would be needed to overcome seasonal streams and tributaries. Portions of a possible whole access trail already exist.

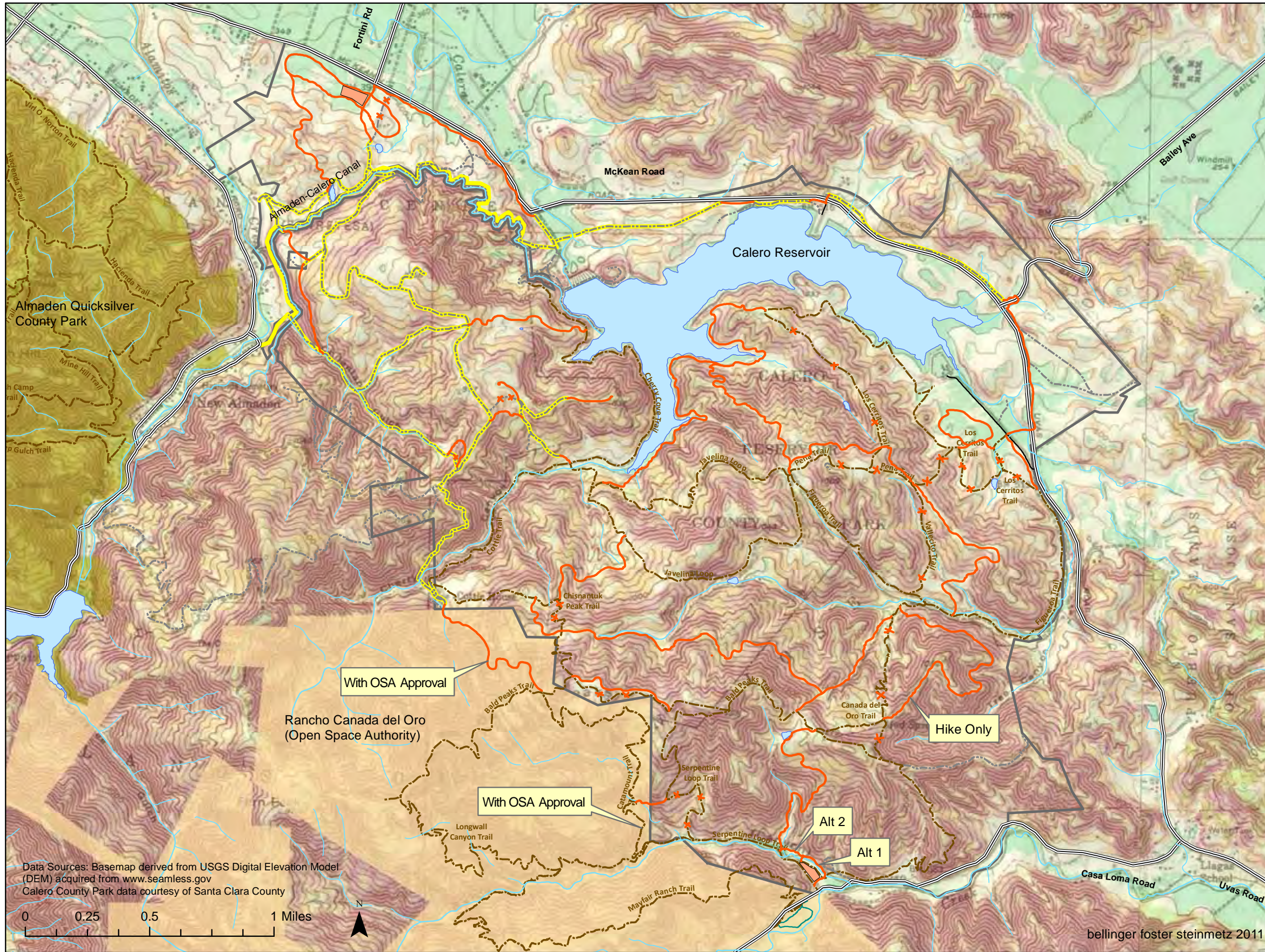
**Topics of Discussions:** new loop trail connection; whole access trail alternatives; bridging needs; staging area







# Calero County Park Trails Master Plan Trail Options



## Legend

- New Staging Area
- New Trails and Reroutes
- Creeks
- Regional Roads
- Park Roads
- Service Roads
- Unpaved Trails
- Paved Trails
- Existing Roads to trails
- Calero Boundary

## Slope

- 0 - 5
- 5.1 - 20
- 20.1 - 30
- 30.1 - 40
- 40+

Data Sources: Basemap derived from USGS Digital Elevation Model (DEM) acquired from [www.seamless.gov](http://www.seamless.gov)  
Calero County Park data courtesy of Santa Clara County



bellinger foster steinmetz 2011







**Memorandum**

To: Elke Ikeda (Bellinger Foster Steinmetz)  
cc: Lee Steinmetz and Joy Long (Bellinger Foster Steinmetz)  
From: Scott Brown, PG, and Jonathan Owens  
Date: August 4, 2011

**Subject: Geologic and hydrologic opportunities and constraints for trail planning, Calero County Park, Santa Clara County, California.**

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**1. Introduction**

Bellinger Foster Steinmetz has asked Balance Hydrologics for assistance in a trails assessment/planning study for Calero County Park in southern Santa Clara County. This memorandum summarizes Balance's analysis of soils, geology, and other hydrologic factors that affect potential trail alignments within the Park. Analysis included assessment of the regional geology (McLaughlin and Helley, 2001) and soils (Lindsey, 1974; SCS, 1968) along with reconnaissance-level field surveys and our professional knowledge of soil and geologic characteristics of the project area and hydrologic best management practices for trail construction.

This memorandum is intended to provide information specifically to guide trail planning and assessment on a broad basis, and is not intended as a comprehensive geologic, geomorphic, hydrologic, and/or soils report.

**2. Analysis****2.1 Field reconnaissance**

Balance staff visited the park site with the project team on June 7, 2011, and also visited the park separately on two other occasions, June 9 and June 23, 2011. The intent of the field reconnaissance was to canvass 'typical' problems associated with existing trails, brainstorm ideas for potential trail alignments and best management practices, and otherwise develop preliminary recommendations to address potential hydrologic concerns. This section briefly summarizes field observations that were made as well as preliminary recommendations based on these field observations and as recorded in the field. The following observations were made during the trails reconnaissance:

1. Numerous seeps and springs were observed, particularly in serpentine bedrock areas. Some seeps and springs may be associated with the serpentine contact with the underlying geologic unit. Other seeps and springs may be associated with landslide slumps.

2. Locations of serpentine bedrock are generally visually obvious, marked by numerous surface boulders and, typically, distinct vegetation.
3. Some trail surfaces showed signs of pock-marking by cattle during wet conditions with subsequent drying, leaving a hard and irregular trail surface.
4. Many existing trail sections are too steep and lack proper drainage. Basic trail-design guidelines for slope and drainage (10% max trail grade<sup>1</sup>, drain dips, critical dips in reentrants, selective outsliping, etc.) have not yet been applied to most areas. One notable exception is the east end of the “Serpentine Loop Trail”, which is distinctly well-designed and –constructed.

Associated suggestions and discussion points based on the numbered observations follow below:

1. a) Avoid routing trails near or downstream of spring areas to avoid saturated trail conditions; b) test springs and springs intended to supply horse watering troughs for mercury concentrations; c) alternatively, as a first-cut approach, locations for horse watering troughs can be selected by testing for salinity (specific conductance) and favoring those spring locations with lower salinity, which may indicate springs that are less likely to contain elevated levels of mercury.
2. If narrow trails are located on serpentine bedrock areas, these trails will tend to have a rocky, irregular surface (as opposed to a smooth soil surface). These locations would be suited for making more-difficult “technical” bike trails. If a more family-oriented trail is desired through a serpentine bedrock area, it would likely need heavy equipment to smooth the bedrock and end up being a wider trail.
3. a) Integrate trail route suggestions with the current grazing-management plan. b) Impacts on trails will be mainly during the wet season. c) Assess current locations of pock-marked trails and try to avoid similar conditions that lead to soft muddy trails. d) Adding gravel to roads reduces cow impacts and mud, but ranchers typically don’t like cattle getting gravel stuck in their hooves. e) Adding wood chips to trail surfaces can sometimes also help with muddy trail section, where positive drainage cannot be reliably maintained.
4. Site-specific trail routing and design will be important for selecting optimum routes to reduce erosion and drainage problems. New trail segments should implement drainage principles similar to those used in the construction of the eastern portion of the Serpentine loop.

## **2.2 Geology**

Calero County Park lies along the eastern flank of the Santa Cruz Mountains, part of the southern Coast Range of California. The Coast Range was formed at the boundary of two major tectonic plates, the Pacific and North American plates. As a result, the region contains several

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<sup>1</sup> 10% max trail grade or no more than half the predominant land-surface slope in low-slope areas.

major fault systems, including the well-known San Andreas Fault, along with many minor fault traces – both active and inactive.

The Park is located within the southeastern portion of the New Almaden fault block, composed primarily of highly-sheared and jumbled mix of marine sedimentary, volcanic and intrusive igneous rocks of basaltic composition (Alt and Hyndman, 2000). Just west of the park is the New Almaden mining district, known primarily for the abundant mercury deposits (Bailey and Everhart, 1964); however the lack of evidence of old mine operations within the park area suggest that the economically viable mercury-bearing units are not prevalent within the park itself.<sup>2</sup>

Seven aerially-significant geologic units are mapped within the park boundaries (summarized from McLaughlin and Helley, 2001; map abbreviations for each unit are shown in parentheses; see Figures 1 and 2):

Franciscan mélange, undifferentiated (fn); metamorphosed volcanic rocks of the Franciscan mélange (fpv); metamorphosed basaltic rocks of the Franciscan mélange (fmv)

These units are variations of metamorphosed volcanic and marine sedimentary units, commonly with blocks of chert and limestone, and are exposed throughout the park. The three Franciscan units noted above are not considerably different from one another from a trails planning perspective. Properties will vary more *within* units than *between* units, and thus they are considered the same unit for the purposes of trail planning. While high potential for erosion might be present in areas where these units are faulted, highly-sheared, and/or heavily weathered, the types of rocks within these units are not generally considered highly prone to erosion. Trails in this set of units<sup>3</sup> should not require extra precautions beyond typical and site-specific trail-building best management practices.

Serpentinized ultra-mafic rocks (los)

These rocks occur within a broken band extending from west of the Calero Reservoir southeastward toward the Casa Loma entrance to the park. The San Vicente Ranch portion of the park, west of the reservoir, contains the largest exposure of serpentinized rocks, with exposures to the southeast being spotty and much less continuous. Serpentinized rocks may contain chrysotile and other asbestiform minerals, formed in voids created by shearing, fracturing and faulting of the host rocks (Wrucke, 1995). Erosion of serpentinized deposits may release asbestiform minerals into the environment, where, if inhaled in significant quantities may pose a risk of lung cancer. It is important to note that not all serpentinized units contain asbestiform minerals in significant quantities; bulk soil testing in areas of preferred alignments can assess whether such minerals are present.

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<sup>2</sup> A single set of quarries is shown within the park on the geologic map (McLaughlin and Helley, 2001) and are noted as a source of limestone. These are the namesake of the park, which refers to a source of lime. Additional ‘mining’ activities are shown on the soils survey (SCS, 1968), but this is associated with source material for Calero Dam. No other mines or quarry activities are noted on the geologic map, nor were significant mercury deposits described near Calero Reservoir by Bailey and Everhart (1964).

<sup>3</sup> As well as other units that do not have significant aerial extent within the park: chert (ch), foraminiferal limestone (fpl), amphibolite blocks (am), basaltic volcanic rock blocks (v), radiolarian chert (fmc); none of which are considered highly prone to incision.



A small exposure of silica carbonate rocks (sc) is shown associated with the serpentinized ultramafics on the ridge just south of the northern arm of Calero Reservoir. This unit, a result of hydrothermal alteration of serpentine rocks, is commonly associated with mercury-bearing deposits, especially in the New Almaden mining district to the west of Calero County Park (Bailey and Everhart, 1964). The silica carbonate rocks are also present north of the Calero Reservoir, but these exposures are not located within the Park itself. For the purposes of this analysis, we include the silica carbonate rocks with the associated serpentinized rocks.

In our experience, serpentinized rocks in this part of Santa Clara County often (but not always) tend to be well-drained due to their tendency to weather to granular soils and the high degree of fracturing and shearing. With the exception of potential asbestos concerns noted above and the sensitive vegetation they support, they are often well-suited for trail construction from a hydrologic perspective.

#### Landslide deposits (Qls)

Several large landslides are mapped in the area south of the western portion of Calero Reservoir, and northwest of the Casa Loma entrance to the park. Landslide deposits are prone to erosion and channel incision in response to concentrated surface flows, such as those that typically result from trail-building.

While it is best to avoid landslide-prone areas when aligning trail routes, the presence of landslides does not preclude trail-building. Special considerations and/or allowances should be made in these areas.

- If necessary, trails can *cross* landslide deposits perpendicular to the prevailing slope but should not run on landslide deposits more than absolutely necessary.
- Trail length on the actual slide deposits should be minimized.
- Seeps and springs are common at the foot (downslope) side of landslide deposits where groundwater exits the slide deposits at the interface of the underlying bedrock. Trails near the toe of landslides should be avoided to minimize wet trail conditions or to cause the springs to be turbid.

#### Alluvial deposits (Qal)

Alluvial deposits are present primarily within the valleys just upstream of Calero Reservoir and along Casa Loma Creek at the south of the park. Similar to landslide deposits, alluvial deposits are unconsolidated and prone to erosion. Special considerations should be included to minimize impacts to the riparian zones associated with alluvial soils<sup>4</sup>.

It is important to note that some streams within the park likely have alluvial deposits that are not of mappable scale. Even if such alluvial deposits are not present, hydrologic controls and

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<sup>4</sup> Stream channel deposits (Qhc) are present within the Park to limited extent, and are combined with the Qal unit for the purposes of this assessment.

best management practices are suggested wherever possible to protect both the streams and the trails and to buffer streams from sediment inputs.

- Direct drainage connections between trails and creeks should be avoided through the use of buffer zones, except at designated crossings.
- Trails constructed on alluvial deposits are prone to occasional inundation by floodwaters. Trails along streams should be designed to minimize potential for ‘capture’ of the stream, especially in small watersheds. Undulating trail grades and setting trail alignments oblique to the prevailing land-surface slope will help alleviate such problems.
- Seasonally-saturated conditions may be present within areas underlain by alluvial deposits. Consider wet-weather closures of trails in alluvial and riparian areas.
- Creek crossings should minimize impacts to the stream channel through the use of bridges, puncheons, rock fords or stepping stones, etc.

#### Alluvial fan deposits (Qpf)

Pleistocene alluvial fan deposits are present within the northwestern-most corner of the Park<sup>5</sup>. These are unconsolidated, poorly-sorted deposits that have a greater potential for erosion than the bedrock units within the park, but because of the presence of gravel and boulders within the deposits are not particularly prone to excessive erosion. As such, we recommend the following:

- Trails should have frequent grade reversals to limit the potential for stormwater runoff accumulation. While this is generally good practice for any trail design, it will be more important within the alluvial fan areas.
- Reduce the maximum allowable trail grade in areas of alluvial fan deposits, possibly to as low as 6-percent (or less than one-half the prevailing land-surface slope, where surface slope is low).

### **2.3 Soils**

As with underlying geology, soils can have varying suitability for trail construction. The soils within the park are predominately well-drained, sandy loams to clay loams that are generally not-poorly-suited for trail construction. Using the available soil survey data, we highlight several factors to avoid when planning trail alignments<sup>6</sup>. These are described below and shown in Figure 3 (see also Table 1). Figure 4 highlights areas where soil-type indicates where constraints to trail-building may be present.

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<sup>5</sup> The Santa Clara formation (QTsc), also alluvial fan deposits, also outcrops in the park, but is of limited aerial extent.

<sup>6</sup> Most mapped soils include areas, or inclusions, of other associated soil types. Site-specific conditions should always be used when these conflict with the mapped soil types.

### *Slope*

Trail construction in steep terrain can be problematic, both logistically during construction and for long-term erosion control. We recognize that it is not feasible to completely avoid steep areas in Calero County Park, but do encourage that trails not be routed for extended distances in soils with a 'representative' slope greater than 50 percent (Table 1; Figure 4). It is important to note that while we identified soil types with particularly high slopes for this analysis, DEM analysis is the preferred method for trail route planning, as it provides better spatial resolution and higher accuracy slope values than the generalized soils mapping units.

- To reduce the potential for trail erosion, multi-use trails should generally be routed 'along contour' rather than parallel to the prevailing slope, and have grades of less than 10% (up to 15% for hiker-only trails).
- Even in low-slope areas, trail erosion may occur. Where prevailing slopes are below 20 percent, trail grades should be less than one-half of the prevailing slope.

### *Ponding/flooding*

In general, soils within the park are well-drained, primarily due to moderate to high slopes and the presence of granular soils with fair to good infiltration rates. However, some areas are more likely than others to be subject to ponding, and/or saturated conditions. We identified such soils in several ways:

- 1) Soils that are designated as 'flood-prone' within the soil surveys.
- 2) Soils designated as prone to 'frequent ponding' in the soil surveys (note that all of the soils in the park were listed as having 'none' for this category);
- 3) Soils with very high clay content, based on soil textural descriptions; and
- 4) Low-slope soils categorized in hydrologic group D (an indication of soils with low infiltration rates, likely to remain ponded or wet after rain storms<sup>7</sup>).

While areas prone to ponding/flooding should generally be avoided when planning trail corridors, it is important to note that not all areas within the soils noted above will be prone to saturated conditions. Site-specific studies in these areas are encouraged. In addition, several techniques can be used in wet locations to avoid long-duration ponding problems. These include:

- Temporary trail closures after rainstorms

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<sup>7</sup> Soils within hydrologic group D with higher slopes were not counted, as none had appreciable clay content that would suggest a likelihood of prolonged saturation. Despite having low infiltration rates, moderate- to high-slope, D-group soils are not likely pond water if proper trail-building techniques are employed (outsloping, rolling dips, etc.)



- Raised 'boardwalks' through ponding- or flood-prone areas
- Gravel surfacing and/or other soil amendments
- Rock drains

### *Serpentine soils*

As described in Section 2.1, areas underlain by serpentine rocks may present some difficulties for trail alignments. Even though the serpentine areas were highlighted in the 'geology' analysis (Figure 2), it is important to highlight these areas using the soils information as well. Given the different methods used to construct the maps, the soils analysis identifies some areas of serpentine soils not shown on the geologic map (and vice versa) expanding the area where special precautions are warranted. Recommendations for testing in areas of serpentine soils are the same as those for the serpentinized ultra-mafic rocks discussed above.

In addition to the issues noted above, the unique geochemistry of serpentine rocks results in soils can be harsh to many common plant species, and thus often support unique flora adapted specifically to the soil types<sup>8</sup>.

### *Stone content*

Several of the soils with the park were designated in the soil survey as having particularly high stone content. Soils within Calero County Park with this designation are the same as those designated as serpentine-derived soils, consistent with our field observations (see Section 2.1 above). The presence of large cobbles and boulders makes trail construction more difficult, and thus construction costs are likely to be higher in these soils. While the presence of large stones certainly does not preclude the building of suitable trails, it does affect the style of trail that should be used. In these areas, trails should be more 'tight and technical' rather than 'open and flowing' (IMBA, 2004)<sup>9</sup>.

### *Erosivity*

Soil 'k-factor' is a quantitative description of the susceptibility of a soil to sheet and rill erosion based on percentages of sand, silt, and clay, as well as other hydrologic properties. K-factor values vary between 0.02 and 0.69<sup>10</sup>. For the purposes of this analysis, we consider k-factor between 0.35 and 0.5 to be moderate erosivity, and values between 0.5 and 0.69 to be high erosivity soils<sup>11</sup>. Soils with high erosion potential should be avoided (note that no high-erosivity

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<sup>8</sup> Biologic considerations of serpentine areas are considered separately from this analysis.

<sup>9</sup> Open and flowing trails support higher speeds, but need better sight lines so trails users can see each other coming. Transitions from 'open and flowing' to 'tight and technical' sections should be gradual so that sudden excessive braking is not needed for an unexpected tight corner.

<sup>10</sup> <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>; k-factor does not consider slope when assessing erodibility. Many of the soils at the site are considered highly erodible simply because of their high slope and position in the landscape. Given that slope is already being considered elsewhere in the trails analysis, we have not included that factor as it specifically relates to soils, in an effort to better differentiate areas more-susceptible to erosion within the high-relief landscape of the Park.

<sup>11</sup> We used 'k-factor, whole soil' (Kw) for our analysis. Kw accounts for the presence of rock fragments in a soil. 'K-factor, rock free' is typically used in agricultural areas, where rock fragments are likely to be mechanically removed from the soil.

soils, based on k-factor alone, were identified in the park). Soils with moderate erosivity potential would be best to avoid as well, but with proper trail building techniques should not be problematic.

## **2.4 Groundwater**

As discussed above, numerous seeps and springs were identified during the field reconnaissance, many associated with the lower boundary of the serpentine unit and associated with landslide deposits. It is our understanding that some of these springs may be used to support watering troughs for horses at specific points along the trail system. The following summarizes several recommendations related to seeps and springs:

- Seeps and springs, as well as areas immediately downslope, should generally be avoided when planning trail alignments, due to concerns of extended saturation and ponding on trails (as discussed above).
- Where seeps and springs are intended for use in watering horses, troughs should be located some distance (we suggest at least 30 feet) from springs and associated saturated areas to reduce trampling and potential for contamination.
- All springs intended for use to supply watering troughs should be tested for the presence of mercury, due to the presence of known mercury deposits in the region. Springs near the lower boundary of the serpentine-bearing rocks are most likely to contain traces of mercury, especially in areas where silica carbonate hydrothermal alteration of serpentine rocks has been noted (see serpentine discussion in section 2.2, above).
- Useful testing for mercury typically requires much more exacting sampling than most other trace elements. We suggest using SCVWD's mercury sampling protocols (c.f., Owens and others, in prep), which is probably best done by a water-quality professional and with appropriate Quality Assurance Project Plan (QAPP) documentation, such that they will be credible to regulatory entities.

## **2.5 Other recommendations**

There are a number of other generalized guidelines for trail construction to reduce hydrology-related impacts. While not explicitly included in our scope, we feel that it is important to summarize some of the most important of these practices here for reference. Many of these guidelines are described in detail in the International Mountain Biking Associations trail building guide (IMBA, 2004) and other trail-building guides and assessments (c.f. Edwards and others, 2006; Ritter and others, 2005; Porter and others, 2007; Parker, 2004; and Schmidt and Woolner, 2004).

- Trails should generally be out-sloped, though in-sloping is ok for trails at outside bends (slope 'noses').
- Trails should have frequent grade reversals to prevent accumulation of flowing water within any one trail segment (commonly called 'rolling grade dips').

- Trails should always slope down toward stream crossings and swale/gully/valley bottoms (concavities), and slope upward away from such features to limit the potential for trails to capture water flowing down the gully during storms. (This is sometimes referred to as “critical dip”)
- Trail slopes should generally be less than 10% grade, though up to 15% is acceptable for technical, hiker-only trails. Where land-surface slopes are less than 20%, trail grades should be no greater than half the land-surface slope to reduce the potential for trails to capture and accumulate runoff.

### 3. Conclusions and Recommendations

Conclusions:

- Geology and soils within the Park are generally quite homogenous, with little difference (for trail planning purposes) between many of the major units. This is in stark contrast to some other parks within Santa Clara County (such as Grant Ranch and Mt. Madonna County Parks) which exhibit much higher variability and thus are more amenable to geologic and soils differentiation.
- There are few areas within Calero County Park that are truly poor locations for trail corridors, from a geologic and soils perspective (exclusive of slope concerns, analyzed separately). In general, the locations highlighted in Figures 2 and 4 should be avoided, if possible, but potential concerns can be alleviated by implementing common trail building best management and erosion control practices.
- Areas of serpentine rocks/soils comprise the most extensive geologic/soils/hydrologic trail planning constraint within the park<sup>12</sup>. Though there are certainly some geologic/soils concerns (asbestos, presence of large stones) in building trails through serpentines, trail corridors through such areas are more likely to be guided by biologic constraints.
- Landslide areas are an erosion concern, and should be avoided, if possible.
- Other significant constraints (ponding/flooding, moderate to high erosivity, etc.) are contained within small segments of the park and/or relevant to variability *within* specific units and thus not identifiable in a broad-brush assessment. While the small areas that are noted on Figures 2 and 4 should be easily avoidable, common trail-building practices are available to help mitigate constraints should trail alignments cross through such areas.
- It is important to remember that in almost all cases, a well-built trail within a ‘poor’ trail corridor is still better than a poorly-built trail in a ‘good’ trail corridor.

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<sup>12</sup> Second to high-slope, which (as described in section 2.3) is more appropriately analyzed through DEM rather than soils analysis, and was not included in this report.

#### Summary of recommendations:

- Testing of bulk soil material for the presence of asbestos should be conducted along potential trail alignments within serpentine areas.
- Trail routes should avoid mapped landslides as well as down-slope areas, where possible.
- Stream buffer zones and trail-building practices intended to avoid ‘stream capture’ should be incorporated into areas underlain by alluvium, as well as in other areas adjacent to streams and headwater gullies.
- Trail alignments should avoid areas prone to ponding or flooding. Where avoidance is not feasible, site-specific BMPs should be incorporated to avoid or limit excessive ponding on the trails.
- Trails in areas of soils with high stone content (in Calero, typically within serpentine soils) should be planned to be ‘tight and technical’ rather than ‘open and flowing’, and transitions between these two trail types should be gradual.
- Trail grades should be no greater than 10% (15% for ‘hiker-only’ trails); OR no greater than half the prevailing land-surface slope in areas where slopes are less than 20%.
- Springs planned to supply watering troughs should be tested for the presence of mercury, especially those that appear to be associated with serpentinized rocks.
- Horse watering troughs should be located at least 30 feet from springs and associated saturated areas, to reduce the risk of trampling and contamination within such areas.
- Trail planning should be integrated with the grazing management plan to prevent cattle pock-marks on trails. Pock-marks are less of a problem on ‘tight and technical’ trails, and thus constraining grazing to areas of such trails during wet periods may be advisable<sup>13</sup>.

## 4. Limitations

This memo summarizes reconnaissance-level work intended for generalized trail planning purposes. Site-specific factors along individual proposed routes should be assessed once preferred alignments are drawn. This memo describes some hydrologic and erosion control best management practices for trail building, but should not be considered an extensive summary of all site-specific preferred trail construction techniques.

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<sup>13</sup> In fact, grazing in areas of serpentine soils, where we suggest the ‘tight and technical’ trails be located, may be beneficial in that it reduces non-native grassland species. (see [http://www.greenfoothills.org/news/2002/10-2002\\_CoyoteRidge.html](http://www.greenfoothills.org/news/2002/10-2002_CoyoteRidge.html)) Further investigation is suggested to see if this applies to Calero.



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**Table 1. Properties of soils relevant to trail planning and generalized suitability ranking, Calero County Park, Santa Clara County, CA.** See text for description of factors and site-specific recommendations. It is important to note that a high number of "flags" does not necessarily mean that a particular soils is a poor place for trails, but rather areas where greater care should be taken when constructing the trails. Soils data based on review of soils data in the two Santa Clara soils surveys (Lindsey, 1974; SSURGO, 2010).

Soil Symbol	Soil Name	Area of coverage within Park (m <sup>2</sup> )	Susceptible to ponding/saturated conditions				High stone content? <sup>3</sup>	High slope? <sup>4</sup>	Moderate (M) or high (H) erosivity (K-factor) <sup>5,6</sup>	Total number of "flags" <sup>7</sup>
			Susceptible to ponding? <sup>1</sup>	Susceptible to flooding? <sup>1</sup>	High clay content?	Low-slope, hydrologic group D soil? <sup>2</sup>				
560	Katykat-Mouser-Sanikara complex, 30 to 50 percent slopes	8,811,870	--	--	--	--	--	--	n/r	0
386	Alumrock-Zeppelin complex, 9 to 15 percent slopes	2,167,634	--	--	--	--	--	--	n/r	0
303	Montara-Santerhill complex, 15 to 30 percent slopes	1,954,333	--	--	--	--	<b>Y</b>	<b>Y</b>	--	2
561	Footpath-Mouser complex, 30 to 50 percent slopes	1,285,332	--	--	--	--	--	--	n/r	0
W	Water	1,167,675	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
143	Flaskan sandy clay loam, 5 to 9 percent slopes	381,696	--	--	--	--	--	--	--	0
569	Katykat-Sanikara complex, 8 to 30 percent slopes	341,541	--	--	--	--	--	--	n/r	0
LfG	LOS GATOS GRAVELLY LOAM, 50 TO 75 PERCENT SLOPES	216,114	--	--	--	--	--	<b>Y</b>	--	1
335	Montavista-Togasara complex, 2 to 9 percent slopes	188,909	--	--	--	--	--	--	--	0
LhG	LOS GATOS-GAVIOTA COMPLEX, 50 TO 75 PERCENT SLOPES	188,759	--	--	--	--	--	--	--	0
LfF	LOS GATOS GRAVELLY LOAM, 30 TO 50 PERCENT SLOPES	179,857	--	--	--	--	--	--	--	0
MfG2	MAYMEN ROCKY FINE SANDY LOAM, 50 TO 75 PERCENT SLOPES, ERODED	171,148	--	--	--	--	--	<b>Y</b>	--	1
302	Montara-Rock outcrop complex, 30 to 50 percent slopes	131,017	--	--	<b>Y<sup>8</sup></b>	--	<b>Y</b>	<b>Y</b>	--	3
301	Montara sandy loam, 15 to 50 percent slopes	129,263	--	--	--	--	<b>Y</b>	<b>Y</b>	--	2
IsG3	INKS STONY CLAY LOAM, 30 TO 75 PERCENT SLOPES, SEVERELY ERODED	129,068	--	--	--	--	--	--	--	0
GoG	GILROY CLAY LOAM, 50 TO 75 PERCENT SLOPES	89,247	--	--	--	--	--	<b>Y</b>	--	1
316	Cropley clay, 2 to 9 percent slopes	59,591	--	--	<b>Y</b>	--	--	--	--	1
334	Urban Land-Montavista-Togasara complex, 9 to 15 percent slopes	52,112	--	--	--	<b>Y</b>	--	--	n/r	1
409	Zamora loam, 2 to 9 percent slopes	50,571	--	--	--	--	--	--	<b>M</b>	1





**Table 1. Properties of soils relevant to trail planning and generalized suitability ranking, Calero County Park, Santa Clara County, CA.** See text for description of factors and site-specific recommendations. It is important to note that a high number of "flags" does not necessarily mean that a particular soils is a poor place for trails, but rather areas where greater care should be taken when constructing the trails. Soils data based on review of soils data in the two Santa Clara soils surveys (Lindsey, 1974; SSURGO, 2010).

Soil Symbol	Soil Name	Area of coverage within Park (m <sup>2</sup> )	Susceptible to ponding/saturated conditions				Low-slope, hydrologic group D soil? <sup>2</sup>	Serpentine?	High stone content? <sup>3</sup>	High slope? <sup>4</sup>	Moderate (M) or high (H) erosivity (K-factor) <sup>5,6</sup>	Total number of "flags" <sup>7</sup>
			Susceptible to ponding? <sup>1</sup>	Susceptible to flooding? <sup>1</sup>	High clay content?							
175	Urban land-Botella complex, 0 to 2 percent slopes	50,304	--	--	--	Y	--	--	--	n/r	1	
ZaC	ZAMORA LOAM, 2 TO 9 PERCENT SLOPES	48,259	--	--	--	--	--	--	--	M	1	
Rg	RIVERWASH	40,496	--	Y	--	Y	--	--	--	--	2	
115	Pits, mine	33,941	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
ZaA	ZAMORA LOAM, 0 TO 2 PERCENT SLOPES	32,564	--	--	--	--	--	--	--	M	1	
LfE2	LOS GATOS GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES, ERODED	32,032	--	--	--	--	--	--	--	--	0	
VaE2	VALLECITOS ROCKY LOAM, 15 TO 30 PERCENT SLOPES, ERODED	19,375	--	--	--	--	--	--	--	M	1	
DAM	Large dams	19,306	n/a	n/a	n/a	n/a	n/a	n/a	--	n/a	n/a	
GoF	GILROY CLAY LOAM, 30 TO 50 PERCENT SLOPES	17,589	--	--	--	--	--	--	--	--	0	
137	Stevens Creek sandy clay loam, 0 to 2 percent slopes	16,436	--	--	--	--	--	--	--	--	0	
PpC	PLEASANTON GRAVELLY LOAM, 2 TO 9 PERCENT SLOPES	8,758	--	--	--	--	--	--	--	--	0	
VaG2	VALLECITOS ROCKY LOAM, 50 TO 75 PERCENT SLOPES, ERODED	2,433	--	--	--	--	--	--	Y	M	2	

Notes:

n/a = not applicable; n/r = not rated

1. As reported in the soil surveys
2. Soils in lower-slope areas in hydrologic group D likely have high clay content or a shallow water table (i.e. high runoff is due to low infiltration and not to steep slopes), which may result in ponded water.
3. Soils with high stone content may require additional construction costs for clearing of stones; these soil types would be amenable to 'tight and twisty' trails, but not 'broad and flowing' trails.
4. Greater than 50%; "Representative slope", as reported in the soil surveys. This only highlights the very steepest soils. Other slope determinations are better characterized using the 'slopes' coverage derived from the DEM.
5. Used 'K-factor, whole soil' for our analysis.
6. K-factor varies between 0.02 and 0.69; between 0.35 and 0.50 were considered moderate; >0.50 considered high; none of the soils within the Park have a 'high' K-factor (whole soil)
7. Generalized trail suitability ranking based on soils data contained within this table. Maximum 'score' would be 7 (a soil can either be 'High slope' or 'Low-slope hydrologic group D' so a score of 8 is not possible)
8. High clay content is present in scattered patches within this soil complex



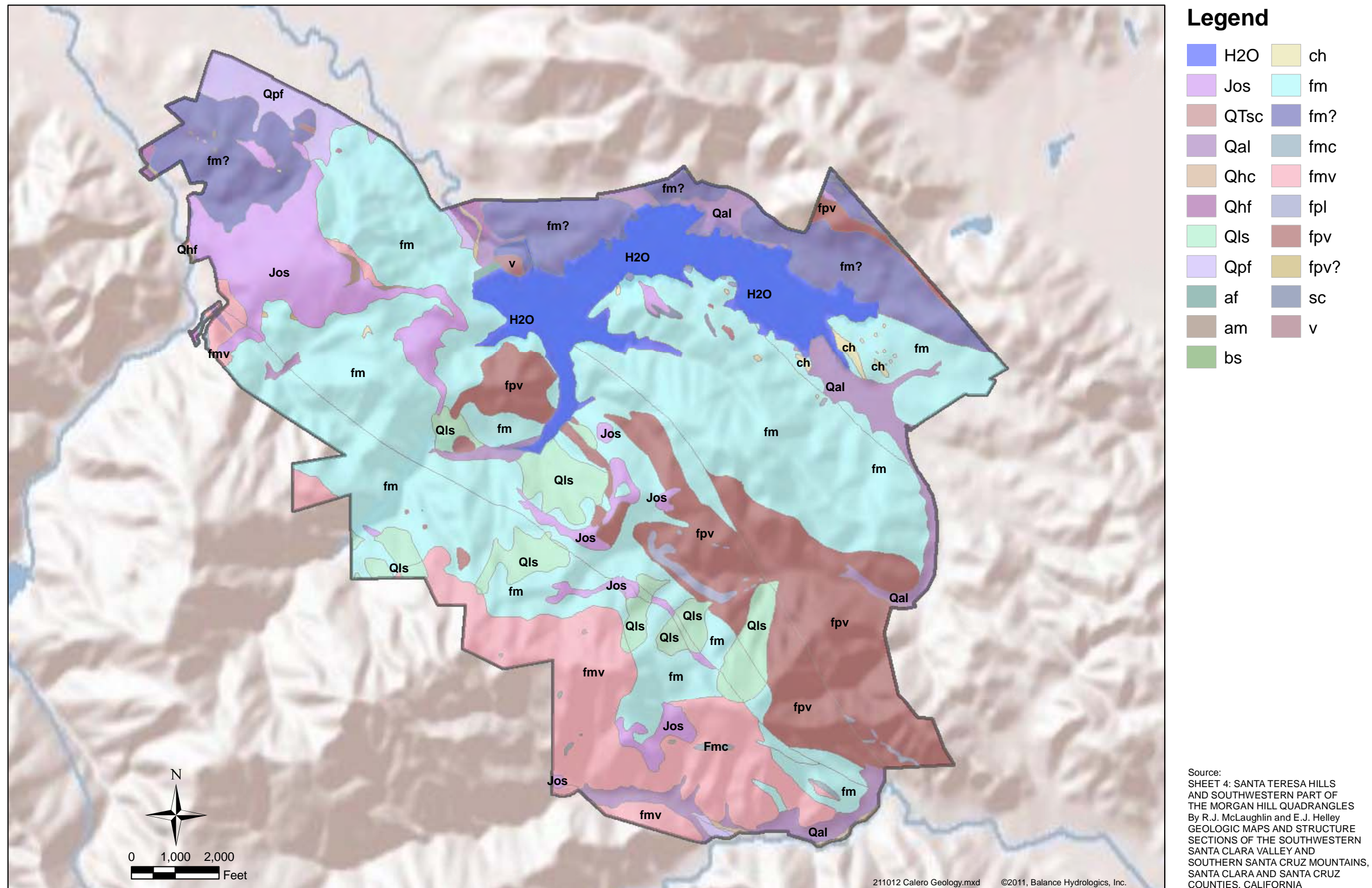
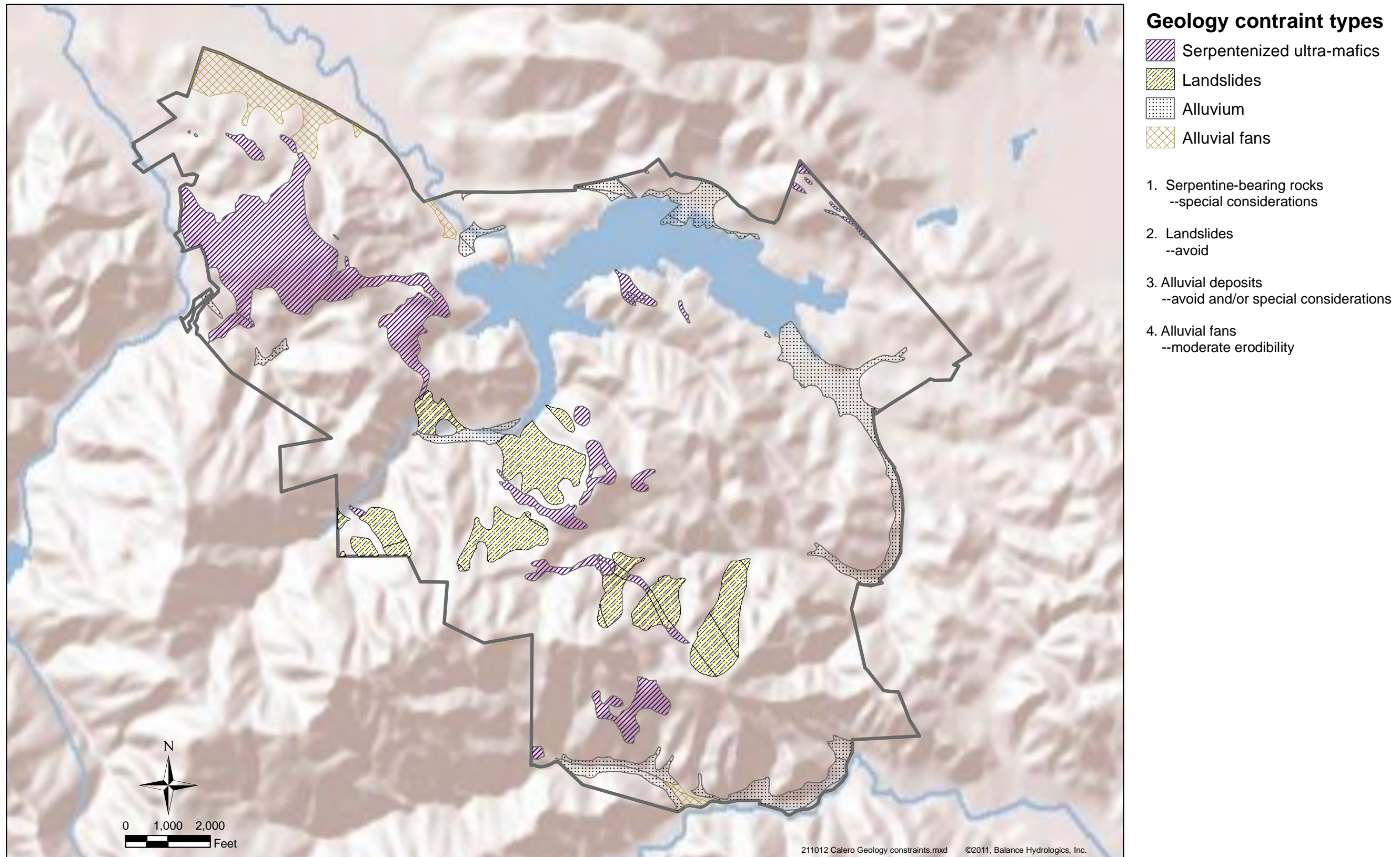


Figure 1. Geology Map See text and tables for additional explanation and descriptions.







**Figure 2. Geology Constraints Map** Analysis of site geology for trail planning purposes. See text for additional explanation and recommendations.





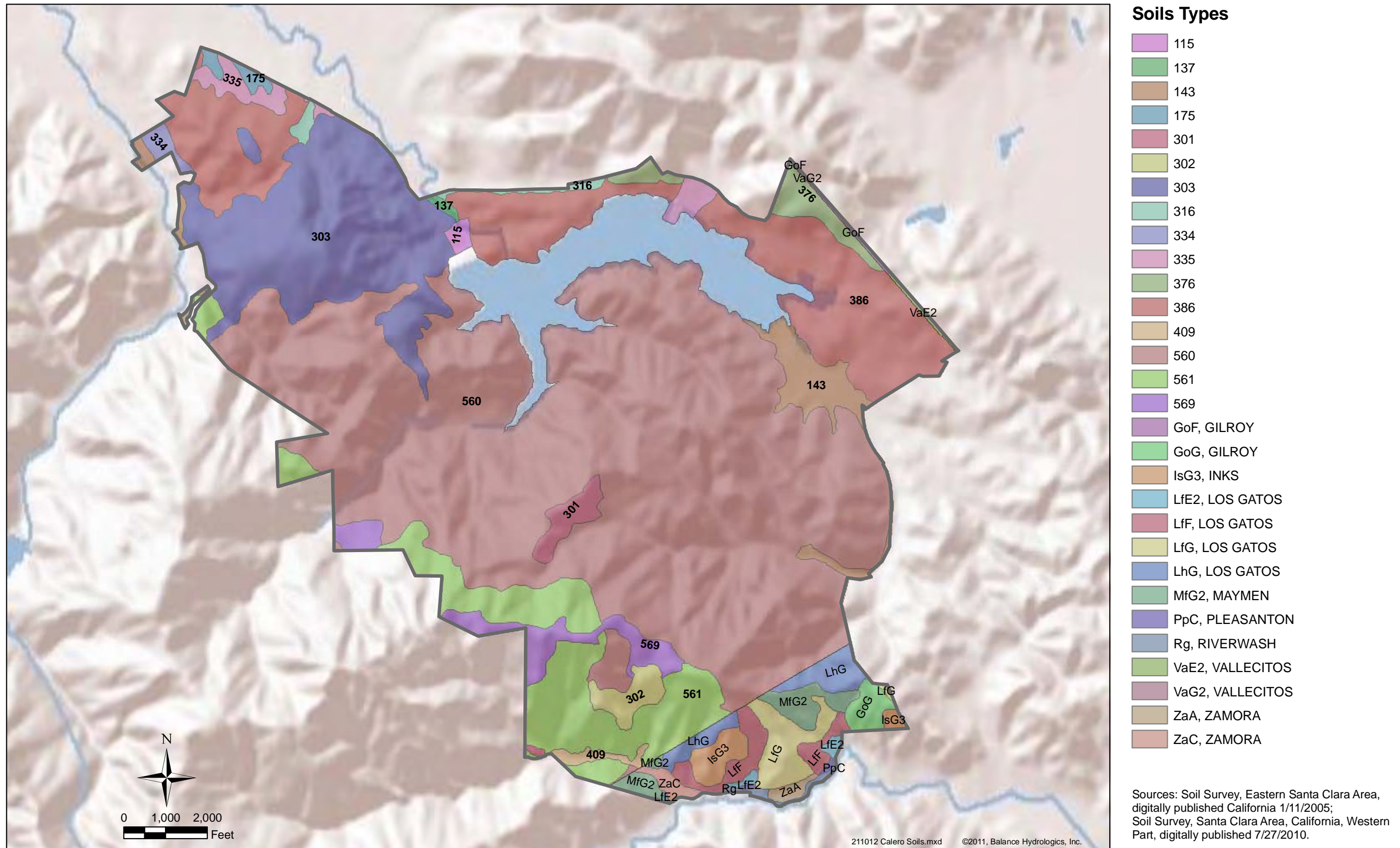
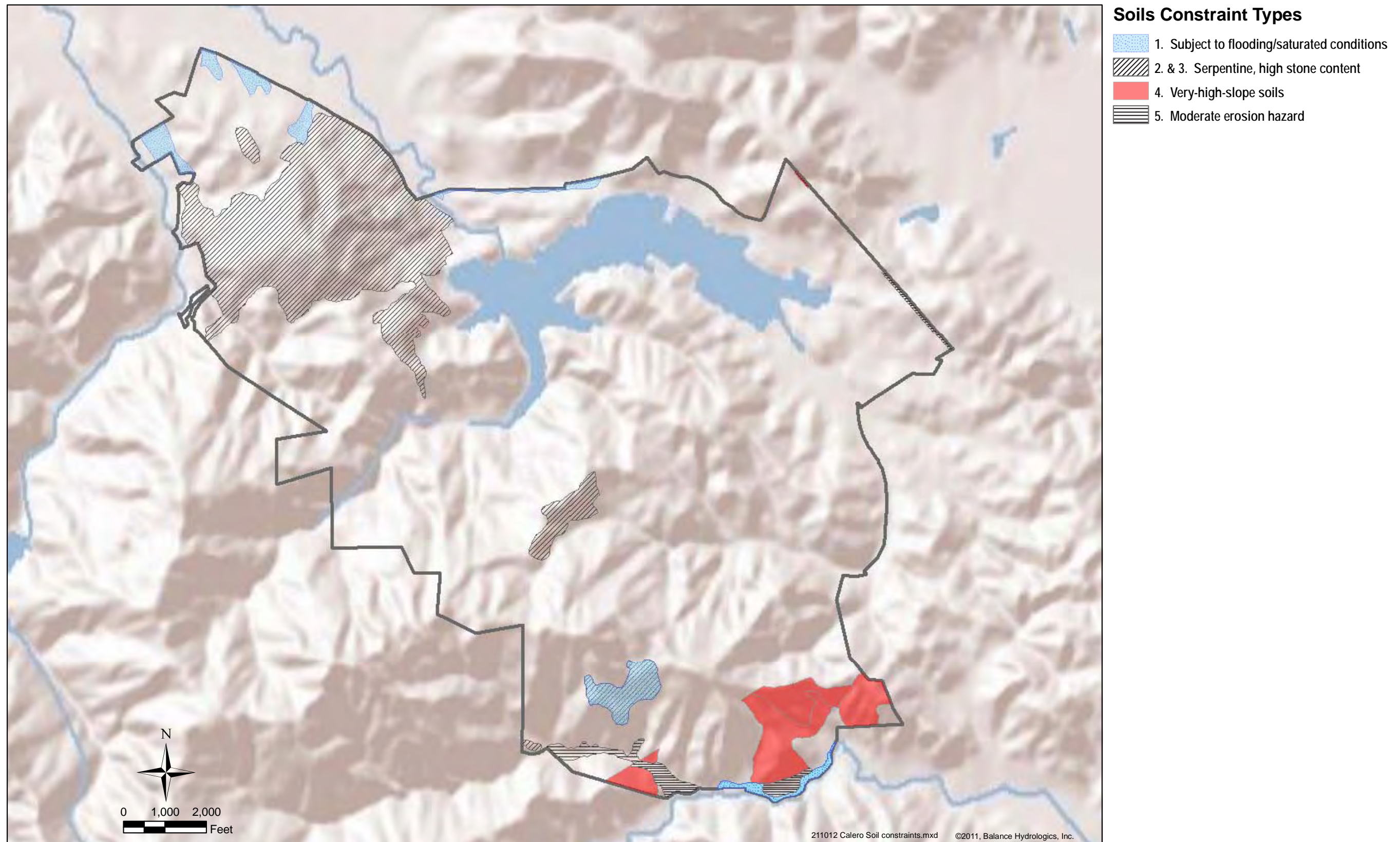


Figure 3. Soils Map See text and Table 1 for additional explanation and descriptions.







**Figure 4. Soils Constraints** Analysis of site soils for trail planning purposes. See text and Table 1 for additional explanation and recommendations

