



TAMALPAIS CONSERVATION CLUB

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December 24, 2002

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43 page fax including this page: 916 445-9100

The Board of Directors of the Tamalpais Conservation Club, founded in 1912 on the principals of “preserving the natural features of Marin County and particularly Mount Tamalpais” state for the record that the project as presented through various forms of communications between first receipt of the Application by a third party on October 5, 2002 through the events leading up to today is factually incorrect, contradictory, completely lacking in scientific citation to back up any of the several key assertions and incomplete as outlined below.

Furthermore, we believe the Mitigated Negative Declaration (MND) as proposed is an unnecessary waste of money and resources at a time when the State of California is facing a serious budgetary shortfall. We assert there are several common sense cost-saving steps that should be instituted to reduce the overall cost of the project while simultaneously protecting the environment, substantially reducing erosion, improving safety, improving aesthetic appeal and increasing visitor diversity.

Based on the facts at hand, the TCC believes this project in its current form will create more environmental damage to Mount Tamalpais State Park than it will solve. Certainly it will create negative environmental and social impacts well beyond any of the estimations purported by the Mitigated Negative Declaration. Based upon the following facts, the TCC requests that a complete EIR be performed.

The Board of Directors of the Tamalpais Conservation Club request the minimum acceptable width of the proposed Coastal Fire Trail is not less than 72”. With regard to the Lone Tree Fire Road, we request it be decommissioned and no trail is built to replace it.

The following are the major points and deficiencies of the MND:

1. Creation of an Attraction and Use Level Deficiencies

Critical to the proposal, the MND claims no impact and no additional “attractions” would be created. The MND also claims that it would not substantially increase visitation or demands to this or any other park or recreational facility in the area.

(p 54, Section XIV, a)

The TCC maintains there is ample and compelling evidence that the creation of a trail of less than 72” in width will in and of itself set a precedent on MTSP and by DPR’s own admission will create a major “international” “attraction” as outlined below.

a. The MND is inconsistent, in direct conflict and direct contradiction with its own Application, entitled “Final EEM application10-02.” The MND does not address DPR’s own anticipated increased environmental impact, increases in traffic congestion and parking, and the need for additional staffing.

The MND specifically and substantially conflicts with the Application in the following two critical areas:

None of the project elements would contribute to a significant increase of visitation and the level of required services is expected to remain relatively static.

(p. 52 Section XIII, a: Discussion)

A significant increase in overall visitation to Mt. Tamalpais SP is not anticipated as a result of the proposed project although there may be some increase in use of the new trails.

(p. 56, Section XV, a: Discussion)

Utilizing DPR’s own repeated assertions in the Application, it is clearly anticipated that DPR fully expects and virtually is encouraging a significant increase in recreational use in MTSP. The Application asserts there is a need to increase recreational opportunities and increase visitation to the area, as follows:

MTSP has yet to realize its full recreational potential.

It is anticipated that the new trails will attract greater visitation as park users seek more aesthetically pleasing pathways that provide the intimate experience of meandering through the countryside, following the natural contours of the hills, while taking in the world class views of the San Francisco Bay Area.

This project has additional environmental benefits that augment the natural character of Mount Tamalpais State Park, but also increase its recreational use.

Experience gained by State Park staff during the implementation of similar projects located within Annadel State Park, demonstrate that visitation of all user groups is greatly increased [...]

Road to trail conversion work accomplished in 1998, 2000 and 2001 in Annadel demonstrate that [...] visitation is increased [...]

This state park (MTSP) receives very high use and is visited by one of the most diverse populations in the state.

The proposed trails will be visible and accessible to anyone traveling on Highway 1. MTSP is literally the backyard of the 14,000 residents of Mill Valley with another estimated 6.8 million people living nearby in the Bay Area. Local use of the park is quite high. International visitor attendance is substantial at MWNM. These individuals will also be attracted to the project site area [...]

“Road removal and road to trail conversion projects completed in Sonoma County, just to the north, have been an incredible success demonstrated by increased and diversified park use [...]

b. The TCC asserts that the creation of narrow “multi-use” trails on MTSP will create a huge increase in traffic and visitation not anticipated by the MND. It can be anticipated, based on previous well-documented experience, that narrow multi-use trails of widths less than 72” will receive a great deal of press attention from both online resources and in MTB (mountain bike) magazines. Evidence of this pattern is directly available through industry leading Bike Magazine, www.bike.com, consisting of numerous depictions in various issues of the Magazine of destructive use and illegal use throughout the world, in and around Marin, and specifically in close proximity to the proposed project. These depictions encourage and seek to glorify illegal activities and, specifically, riding on traditional hiking trails. Several years worth of these depictions are available upon request.

It is a virtual certainty Bike Magazine and other publication and a variety of mountain bike-based websites would publish photos and written commentary with the intent of advertising the creation of two trails of less than 72” in width in what is well known as the birthplace of the mountain bike, MTSP and adjacent property. Completion of this project in its current form virtually will assure a significant increase in anticipated worldwide mountain bike use thereby creating a major new international attraction to the property.

b. Additional evidence of its potential popularity was demonstrated when 100-200 mountain bike supporters, with significant numbers identifying themselves as from outside the county, attended the November 4, 2002 Public Input Meeting at DPR's Marin Headquarters in Novato. This is the largest turnout of mountain bikers for a proposed multi-use trail project in the last decade in Marin County.

c. The MND fails to address that while total MTSP levels might remain static, creation of this “attraction” will place an imbalanced user load on these proposed new trails

d. The MND does not adequately address MTSP's unique international status within the mountain bike community as home and birthplace of the mountain bike and the impact this will have if trails of less than 72" are open to mountain biking. Mount Tamalpais is often referred to as "Mecca" for mountain bikers. The importance of this symbol as encouraging use must be recognized in an EIR.

2. Lack of Comparative Local Data

a. There is no scientific evidence or citations to research addressing the environmental and social impacts of narrow trails, since their creation, to local State Parks, specifically China Camp S.P. (CCSP) and Annadel S.P. Furthermore, China Camp S.P. which lies in close proximity to MTSP and serves as a model for this proposal, where for several years multi-use trail of widths narrower than 72" have existed, is never cited or mentioned either in the MND or the Application.

b. There is clear and compelling evidence of high levels of damaging bicycling activities at CCSP. Furthermore, there is clear and compelling evidence that serious displacement of other user groups has occurred in CCSP and San Pedro Ridge since the opening of narrow trails to mountain bicyclists on CCSP several years ago.

c. During TCC's onsite November 21, 2002 visit, David Boyd offered that CCSP should be closed to vehicular traffic, specifically mountain bicycling, during the wettest, most environmentally sensitive periods of the year when environmental damage, a direct result of mountain biking activity, is clearly evident. Mr. Boyd stated this issue had been discussed but claimed there was no viable way to enforce closure of CCSP while simultaneously acknowledging its necessity. The identical problem would face MTSP should this project be allowed to go forward in its current form.

d. There is ample physical evidence at CCSP to demonstrate that the concept of opening narrow multi-use trails in this State Park has failed on numerous levels. The same would occur on MTSP lands. Specifically:

1. It has resulted in tremendous environmental damage in the neighboring jurisdictions of the City of San Rafael Open Space and MCOSD lands on San Pedro Ridge where a web of illegal, highly erosive trails has been created by mountain bicyclists.
2. Every existing hiking trail on San Pedro Ridge has been deeply eroded through illegal bicycling.

We maintain the same can be anticipated for MTSP and neighboring jurisdictions. Included is documentation dated February 11, 2000 to Fran Brigmann, General Manager, MCOSD regarding San Pedro Ridge and CCSP concerns. These are many of the same concerns we have in regard to this project.

3. Trail Width Deficiencies within the MND

a. The so-called 48” trail width that DPR considers the minimum acceptable standard lacks any scientific reference or citations to back up these assertions. Furthermore, there is no available comparison to demonstrate that DPR’s minimum acceptable trail width is viable or environmentally sustainable in “very high traffic” areas which DPR acknowledges exist on MTSP.

b. The MND claims this project does not conflict with the Marin Countywide Plan, Trails Element. (p44. IX, b).

We assert it is in direct conflict with the Countywide Plan and inconsistent with the policies of neighboring jurisdictions. No where in the Plan, or in any other jurisdiction including but not limited to MCOSD, MMWD, GGNR, and Muir Woods is there any mention of creating multi-use trails of less than 72”.

c. David Boyd claimed the environmental and visual impact of a 72” trail will be greater than that of narrower width.

While acknowledging the concern regarding views, we note that the proposed trails are being built to follow contours rather than across them. This is a change from the trails current locations, often cutting across contours. Given this proposed change of location, the reasonable width TCC proposes will not be detrimental to views. We maintain a well designed trail of any reasonable width will have minimal long-term environmental impact and in fact will require far less maintenance than the attraction DPR proposes to create. We maintain the impact of anything less than a 72” multi-use trail will be far greater over the long term.

d. DPR claims narrower trails are safer, more accessible and will decrease the threat to park resources. Section 2.4, p7.

There is ample documentation proving the opposite will occur. There is are no citations provided nor any outside peer reviewed scientific evidence to support the assertion that mountain bikers will go more slowly on narrower trails.

Additionally, the reliance on outdated usage studies, i.e., those done in the early 1980's when mountain biking was just beginning and not up to its present, typical intensity, prevents an accurate study of safety given the subsequent use of mountain bikes, used at varying rates of speed, on trails previously wide enough for hikers only.

Reference is made here to sections of documentation entitled: “CONFLICTS ON MULTIPLE-USE TRAILS: Synthesis of the Literature and State of the Practice” Sponsored by The Federal Highway Administration and The National Recreational Trails Advisory Committee.

e. We request that DPR provide all statistical evidence at its disposal that narrower trails are safer and also to provide bases for these assertions.

f. The MND does not address user displacement issues. Displacement of users is a major concern and inconsistent with DPR's primary mission. There is ample evidence that a major change in usage patterns have occurred at CCSP since it installed narrow multi-use trails. The park has been largely abandoned by equestrians, runners and hikers. Reference "CONFLICTS ON MULTIPLE-USE TRAILS: Synthesis of the Literature and State of the Practice" for more complete information in regard to this issue.

g. David Boyd stated during the onsite visit on November 21, 2002 that mitigation for hikers and bikers meeting on proposed 48" trails are for hikers to step up or down off the trails. This meeting can occur anywhere on a trail, causing hikers to step off in areas that can be dangerous. He acknowledged that it is not likely that a biker will get off a bike and wheel the bike off the trail to let the hiker or equestrian go by. When bikers and horses meet, there is increased danger because the room needed for a horse to move or sidestep is significant.

h. The turnout proposal discussed by David Boyd with the TCC and more recently with MMWD staff is unworkable and impractical as mountain bikers generally will not look far enough down the trail to see others, nor stop to allow others to pass specifically at these designated turnouts. Often mountain bikers are looking at the ground ahead of them in order to avoid roadbed problems. At these times, they are not looking down the trail for upcoming passersby.

i. The MND lacks a seasonal provision to reduce or eliminate vehicular use during wettest months. Nor does it address the viability of keeping these trails open to vehicular use during the wettest months nor the impact varying levels of vehicular use will have during these months. DPR has not studied the long-term environmental impact and associated maintenance costs of allowing vehicular use during these periods.

4. Failure to Address Safety Concerns

a. There is no discussion or evidence presented regarding the relative safety to various user groups on 48" multi-use trails in comparison with minimum 72" multi-use trails.

b. There is no evidence presented on the safety of narrow 48" multi-use trails in high traffic of areas as is anticipated by the Application.

c. At the Nov. 4, 2002 meeting we asked for the scientific basis in writing, or any rationale whatsoever, for learning how the 48" minimum width was chosen. We were told by DPR that no such documents are in existence.

DPR also stated at this meeting that it relied on usage studies that were from the early 1980's. This was prior to the first years of commercial mountain biking, so the studies could not take into account the subsequent exploding use of mountain bikes in general and on MTSP. Thus the studies are outdated and do not provide accurate or adequate data to support the use projections included in the MND.

d. The MND implicitly excludes mountain biking from these trails by its supporting rationale. It describes the historic uses of these MTSP footpaths, prior to the construction of the to-be-converted fire roads, as a reason for converting these roads back to trails. It describes these trails as

"historically important within the context of use of Mt. Tamalpais as a regional destination for hiking and other outdoor recreational activities during the late nineteenth and early 20th centuries. [...] [T]he historic significance of the area is based on the retention of the original alignment of the trail and the continued use of the trail system in a manner constant [sic] with its historic use. This allows visitors to enjoy the views and use the resources in much the same way visitors have for over a century.

However, mountain bicycling is approximately only 20 years old. Therefore it is not an historic use but a relatively recently introduced use. Therefore, there is no rationale for including it when these trails are returned to their historic use.

e. The TCC requests access to any and all studies currently at the disposal of DPR and its personnel demonstrating safety on narrower trails.

f. There are no citations providing evidence that narrow trails will cause mountain bikers to ride in a socially responsible, environmentally sensitive manner. All assertions in both the MND and the Application are based on opinion rather than fact and are therefore invalid.

g. We request a complete EIR be performed and the issues of safety are fully addressed. We ask that statistical and environmental evidence be collected throughout the State Parks system where narrow multi-use trails of widths less than 72" to demonstrate the relative success or failure of these policies.

5. Coastal Fire Road Issues

a. The MND proposes trail alignment primarily on downhill slope. The reason David Boyd offered for proposing construction on the more environmentally sensitive, higher visual impact downhill slope is to provide users with "views." Reference: Sierra Club/IMBA Policy On Off Road Bicycle Use, January 31, 1998

We propose flatter, uphill side which shall minimize visual impact of trail when viewed from the proximity of places such as the Dipsea Trail. Views and aesthetics are minimally impacted. Furthermore, it will be then relatively easy to incorporate those sections of the current fire road that are not damaged or in need of replacement into the new alignment.

b. DPR proposes to decommission all but 0.3 miles of the current road. We propose to replace those specific sections that are heavily damaged due to poor alignment and too steep by current standards. The public's approach will save substantial state funds. We believe it is unnecessary to decommission a majority of the current road.

c. DPR proposes that the Parts that 0.3miles of the current road that will be utilized are to be narrowed by infilling the existing fire road with dirt.

We maintain this is unnecessary as the current fire road is an average seven feet in width and perfectly suited as a multi-use trail. This approach will save substantial state funds.

d. The MND does not address potential impact of anticipated illegal bicycling use to Heather Cutoff Trail.

e. The MND does not address the fact that Heather Cutoff leading to Coastal is the only exit from the horse camp at Franks Valley for equestrians. Nor does it discuss the potential for displacement of equestrians, equestrian safety and the anticipated safety and user conflict issues of riding horses on the narrow multi-use alignment.

5. Lone Tree Fire Road Issues

a. The MND does not address a return route nor discuss safety of dumping users onto a narrow and very dangerous section of Highway 1 with no return loop.

b. At the December 9, 2002 meeting of the majority of major environmental conservation and equestrian groups at MCL headquarters attended by David Boyd and Denali Beard, after careful consideration of the proposal, when asked for our opinion, the nearly unanimous consensus was to decommission Lone Tree allowing the land to return to its natural state. The public's approach will save substantial sums of state funds minimally impacting user enjoyment and increasing safety.

We request return to what we have been told was the original plan to decommission Lone Tree as it is unnecessary, is historically insignificant to the public and only serves to repeat a past mistake in the name of questionable historical significance.

c. The MND does not address potential impact of illegal bicycling use that can and should be anticipated to occur on Dipsea Trail.

Not building an essentially parallel trail to the Dipsea Trail will protect the Dipsea from illegal biking and protect a trail of true great historical significance to the public.

There is ample evidence illegal bicycling occurs to trails adjacent to legal narrow width bicycling trails in China Camp SP, Annadel SP and in Mid-Peninsula Regional Open Space District. (Reference February 11, 2000 to Fran Briggmann, General Manager, MCOSD regarding San Pedro Ridge and CCSP concerns).

6. Public Input

a. DPR did not properly notice the public.

- None of the three so called notices is legally sufficient. Only one letter, the one in the front of the MND. states where copies are available.
- It does not give the beginning and ending dates of the comment period as required by law.

- The other two letters, DuMont and Boyd's, fail to give the locations where the MND is supposedly located.

This information needs to be in the notice for it to be legal. Therefore, there has been NO notice given. We request to start the process over.

b. Many groups and several public entities on the mailing list provided to us by David Boyd never received word of the November 4 meeting and therefore were denied an opportunity to be present. The original Application lacks initial equestrian, environmentalist and conservationist input and presents a biased and inaccurate portrayal of public support of this project. (Reference TCC Position Statement to David Boyd, November 4, 2002).

The release of the MND to the interested public no sooner than December 2, 2002 along with the December timing factor right in between the three most major holidays of the year puts the public at a tremendous disadvantage to properly address it within the window provided. The public has every reason to be highly suspicious of the motivations and apparent manipulations of any government entity and its personnel that attempts to push a project past the public during this time period and specifically in the manner in which DPR has approached this project from its inception.

As outlined in the letter from the TCC to Shaelyn Raab Strattan on December 23, 2002 and copied to Ms. Du Mont. The community received conflicting dates and conflicting contacts adding to the confusion. There is clear evidence of unfair foreknowledge of the plan in the mountain bike community resulting in imbalance of viewpoints throughout the MND and Application.

The mountain biking community, represented by the following: Marin BTC, East Bay BTC, IMBA, Access4Bikes and the Sonoma County Trails Council (a mountain biking organization) were included in the original list of organizations contacted by DPR as it prepared the Application. No environmental, conservation or equestrian group was contacted and there is no conservation group included in this list, although many including the TCC are well known to DPR.

7. Enforcement

a. The MND states that there will be "no impact" on police protection, stating:

None of the project elements would contribute to a significant increase of visitation and the level of required services is expected to remain relatively static.

However, the MND ignores known needs for increased patrols. At the Nov. 4, 2002 public meeting, all present recognized the potential for increased contacts on the proposed trails. In response the DPR stated that it would need greater signage asking users to be courteous to each other.

In addition on a site visit on November 21, 2002 DPR staff stated that one element of determining the new trail alignments was to avoid areas where mountain bikers would go off-trail, down slopes, and create new, illegal trails. Since this occurs all-too-often, increased patrolling will be necessary, in contradiction to the MND. (Reference February 11, 2000 to Fran Brigmann, General Manager, MCOSD regarding San Pedro Ridge and CCSP concerns).

As an example of the seriousness of this problem, the ex-vice president of the Marin Bicycle Trails Council was found guilty in US District Court of Northern California, with two others, of destruction of federal property by cutting an illegal four mile trail in highly sensitive, endangered Coho and Spotted Owl habitat across State, Federal, and County lands, when they were discovered in the act. This individual was in attendance at the November 4 meeting.

b. The MND lacks an enforcement element. This must be adequately addressed.

c. The MND does not address inherent and well documented user conflicts. (Reference February 11, 2000 to Fran Brigmann, General Manager, MCOSD, “CONFLICTS ON MULTIPLE-USE TRAILS: Synthesis of the Literature and State of the Practice”)

d. The MND does not address inherent and well documented evidence of increase in injuries and how emergency personnel will respond.

Sincerely yours,
(Signature on faxed copy)

Larry Minikes
Corresponding Secretary Tamalpais Conservation Club
Member, Board of Directors, Bay Area Trails Preservation Council

References

We request the following documents are included in our request for a complete EIR.

February 11, 2000 to Fran Brigmann, General Manager, MCOSD regarding San Pedro Ridge and CCSP concerns

November 4, 2002 TCC Position Statement to California Department of Parks and Recreation, Planning and Local Services Section

“CONFLICTS ON MULTIPLE-USE TRAILS: Synthesis of the Literature and State of the Practice” Sponsored by The Federal Highway Administration and The National Recreational Trails Advisory Committee.

Sierra Club/IMBA Policy On Off Road Bicycle Use, January 31, 1998

TAMALPIAS CONSERVATION CLUB

*3030 Bridgeway Suite 117
Sausalito, CA 94965*



February 11, 2000

Fran Brigmann, General Manager, MCOSED
3501 Civic Center Drive, Room 415
San Rafael, CA 94903

Re: San Pedro Ridge BTC Proposal

Dear Fran,

On behalf of the Tamalpais Conservation Club, in regard to our meeting in your office with you and Ron Miska on 1/21/00, we request this correspondence be included in the packet you are delivering to members of the Parks and Open Space Committee prior to the February 23 meeting.

All involved parties should understand we environmentalists and conservationists of the TCC are very much in support of bicycling, when and where it is practiced in an environmentally sound and socially responsible manner. Furthermore, we fully support the current rules and regulations designed to protect our lands and its users from abuse, conflicts, potential injury, and lawsuits.

For the record, based on our combined years of previous and ongoing experiences as involved members of our community, we are quite concerned as to the likelihood for success for a project of this type. We believe it is premature to consider such an undertaking until a number of important issues are resolved prior to start of this study. At this time we believe District resources and personnel time can be put to better use dealing with these other issues first.

However, if our reasonable concerns can be satisfactorily addressed, we are willing to work in cooperation with all participants, and will support a proposal to study the building of a trail on San Pedro Ridge from Woodoaks Drive to Scetrini Fire Road.

The position of the Board of the TCC is that the Open Space District and the Marin BTC should fully address these concerns prior to any consideration of the building of new

trails. In essence, we are asking that a number of sensible, proactive steps be taken to reduce user conflicts and protect sensitive habitats from further damage, degradation, and permanent destruction.

Our concerns are complementary to those presented by the Bay Area Trails Preservation Council. We would like to reiterate the points covered during the meeting, and add related comments as well.

Our concerns cover five major areas and are outlined, as follows:

I. District Policy

II. Trail Construction and Environmental Impacts

III. Traffic and Parking

IV. Enforcement

V. Proactive Bicycling Community Involvement

District Policy Concerns

1. As acknowledged by all participants in the meeting, if and when such a trail is built, the vast majority of users will be bicyclists. Though this is presented as a proposal to study building a "multiple-use" trail, it is understood and acknowledged this is a proposal primarily for a mountain bicycle trail with expectations of very low use by other user groups.
2. While other recreational trails have been constructed under the current policy, this is the first to be considered with the explicit understanding it is primarily for the benefit of a single-user group.

As Nancy Sandy of the TPC stated, just the mere discussion of such a proposal represents a major change in District mission. Prior to moving forward on any proposal, Open Space policy needs to acknowledge and reflect its shift in mission to one that properly addresses:

- First, the continuation of building trails purely for recreational purposes.
- Second, building trails primarily for use by single-user recreational groups.
- Third, establishment of a master plan for recreation.

As a public agency, it is essential all in the community be provided a formal opportunity to review and approve of this change, which we view as significant departure from previous policy.

3. Furthermore, based on experiences at Tamarancho and China Camp S.P., all participants should recognize, and the public be made aware that there is a clear and reasonable expectation that user group displacement will occur on the Ridge.

We are asking this be acknowledged for the purposes of moving forward within that context. It is then for the community to decide if this is a reasonable use of the Ridge and adjacent lands.

Construction and Environmental Concerns

4. We ask for written assurance that all active participants in the process agree that best practices will be utilized in the event this process reaches the construction phase. Work must be based upon the recommendations of MCOSD staff regarding proper trail alignment, grade, and trail width. Additionally, CEQA guidelines should be followed, where applicable. Other concerns we have are:
5. What criteria is the BTC using for suggesting a standard of 75 pound per square foot live load, and what citations are they referencing this to?
6. What the expected environmental impact to the current hiking trail? And should higher levels of illegal use be anticipated to the hiking trail because of its proximity to the proposed trail?
7. As of now policy is clear; District signs on the Ridge state only fire roads are open to bicycling. Will creation of this multi-use trail serve to confuse bicyclers as to types of trails open for the activity?
8. Is consideration being given to the seasonal traffic expectations on the proposed trail?
9. Is the anticipated regional growth rate in the coming years being considered?
10. Assuming it is agreed the proposed trail will receive a fair amount of use, we ask that the District identify the carrying capacity the proposed trail will be able to withstand under varying weather conditions.
11. What impact upon flora and fauna in the area is anticipated?
For Example:
 - Impact to nesting animals during trail construction, and after completion
 - Impact to identified rare species residing in the vicinity
 - Number of cubic yards of soil that will be displaced
12. Should this trail be constructed, we request a comprehensive minimum two-year study period, to include baseline measurements after the trail is constructed.

In our opinion, the District must be able to fully assess impacts to the immediate trail and the Ridge before any further trail building proposals by the BTC or associated bicycling groups may be considered on MCOSD lands. This is to ensure we move forward in the future with a clear knowledge of long and short-term recreational and environmental impacts to District lands through this kind of project.

Traffic and Parking Concerns

13. As was acknowledged in the meeting, the vast majority of the mountain bicycling traffic entering at a Woodoaks trailhead will climb the Ridge and ride to the State Park, or conversely, exit through Woodoaks. This effectively creates a western portal to the Park.

As the location is approximately one-half mile off Highway 101 in a fairly densely populated section of Marin, in our opinion it is reasonable to expect a sizable percentage of China Camp S.P. traffic will be diverted to this optional western entry point.

Furthermore, because of its proximity to a major highway interchange, if history is an indicator, it potentially will become a convenient regional destination point for those coming from outside the county, thereby increasing total use. Because of the convenience of parking in the area, the potential exists of funneling far more traffic to the Woodoaks area than either Tamarancho or China Camp S.P. currently receive.

14. We understand, as part of the process that the affected neighborhood will be made aware of the project prior to any construction.

We are going on record to predict high use levels will prevail. We wish to ensure that the affected neighborhood understands this and is allowed to become full partners in the process to avoid unpleasant surprises and later conflicts. We respectfully ask:

- Awareness of our opinion, as stated here, of possible traffic impacts.
- The neighborhood be made aware of issues affecting other neighborhoods with similar trailheads or similar use patterns, specifically in the Cascade Canyon and Tamarancho areas.
- The neighborhood be made aware of current traffic patterns around China Camp S.P.

Enforcement Concerns

15. Today there exists a myriad of illegal trails on the Ridge. There are clear signs of heavy, ongoing bicycle traffic appearing on nearly every hiking trail and illegal bike path; this includes paths clearly marked as closed to all forms of traffic. Old trails that have been stable for many years are now showing signs of degradation, directly attributable to this illegal use.

Social bicycling trails have appeared in the last few years where previously there were none. A virtual spider web of cross country trails and shortcuts has developed in China Camp, the areas immediately adjacent to it, and the Ridge in general. Additionally, there is comprehensive evidence of off-trail cross-country bicycle riding occurring in very sensitive redwood habitat on District lands.

We respectfully request the following of the District:

- A. Before any proposal for trail building goes forward, a plan is executed to fully inventory these unauthorized trails and closely monitor present use patterns on these and established hiking paths.
 - B. Once the scope is understood, a plan is prepared, funded, and implemented to ensure this pattern is substantially reduced or eliminated.
 - C. The District establishes and funds a formal mechanism to periodically report on the relative success of this program.
16. During the 1/21 meeting, all agreed this would undoubtedly bring more recreation to the Ridge. We ask for a commitment to, and a demonstrated ability of the District rangers to enforce rules and regulations in the San Pedro Ridge area. We ask for a determination of the future forecast impact on staff time, the impact on enforcement in other areas, whether extra staff will be required, and the projected additional costs to be borne by the community.
 17. As the Open Space District is moving towards a more active recreational policy, we ask it to review the format of its current rules and regulations and develop a more complete and comprehensive set for all users to follow. Furthermore, we ask it be made readily available to the public so all users may better understand what is expected of them and why.
 18. We ask the District prepare a comprehensive plan in the event that problems continue and the Committee does not deem the proposed trails building program a success. We ask what benchmarks will be established for the Committee and the District to determine relative success or failure.

Bicycling Community Concerns

19. We ask that as part of the plan, the Marin BTC makes a long-term commitment towards:

- A. Acknowledgement that there are illegally developed trails on San Pedro Ridge and elsewhere on MCOSED lands, used primarily by off-road bicyclers; and that these activities constitute improper use of our resources and must cease if any plan to build additional trails is to succeed over the long term.
- B. We feel the bicycling community leadership has been far too uninvolved and silent in this particular area for much too long. We ask for a strong public commitment against illegal bicycling activities of all kinds.
- C. Agreement to use BTC trail building volunteers to mitigate and repair any and all illegal bicycling trails present on San Pedro Ridge, under the auspices and direction of the District, before discussion of new trail construction continues.
- D. Agreement to repair legal hiking paths on the Ridge showing conclusive evidence of damage due to mountain bicycling use.
- E. Agreement to exert meaningful peer pressure to keep bikes off all hiking paths.
- F. Acknowledgement that while it is a minority of users causing the majority of problems this still represents a sizable number of individuals negatively impacting the environment and the experience of all user groups on a consistent, historical, and ongoing basis.
- G. Subsequent to the foregoing, to then present a comprehensive plan to the Committee consisting of a proactive education campaign via peer networks, newsletters, Internet, mountain bicycling events, etc. to curtail illegal use in all forms throughout the county, including, but not limited to:
 - Explaining the reasons behind the rules and regulations.
 - Providing a better understanding for the need to live within those rules and regulations.
 - Consistent reinforcement of the rules and regulations by members of the BTC to the bicycling community at large.

- Sensitivity Training – teaching the need to understand and respect the rights of others within and outside their user group.
- Agreement to report any and all illegal trails and trail activity throughout the county, and take a proactive role in working towards prevention of this type of activity in the future. Acting as a set of eyes and ears for the District.
- Provide a specific, concrete plan as to how each of these aspects will be implemented.

The Board of Directors of the Tamalpais Conservation Club asks the District to request of the Marin Bicycle Trails Committee that it aspire to a much higher level of leadership, resource protection and proactivity in our community in regards to the above issues. If and when these conditions are instituted in good faith, only then should the county consider devoting resources to a project of this nature.

In closing, we ask the bicycling community to show by action, rather than words alone, that they are willing to fully embrace and work within policies set by our community. At this time we feel an independent study will support our contention of high levels of flagrant abuse of policy, as it relates to San Pedro Ridge specifically, and generally to other District lands throughout our county.

We ask that any proposal to study the building of new trails be postponed until these larger, more vexing issues are properly addressed, and until the District and the Committee has a full grasp of the problems already facing the Ridge and surrounding areas.

Sincerely yours,

Larry Minikes
TCC, Bicycling Committee Chair

Cc: Ron Miska
Marin Board of Supervisors
Bay Area Trails Preservation Council
Marin Conservation League
Sierra Club, North Bay Chapter
Audubon Society, Marin Chapter
Native Plant Society, Marin Chapter

November 4, 2002

California Department of Parks and Recreation
Planning and Local Services Section
P.O. Box 942896
Sacramento, CA 94296-0001

Re: Conversion of Coastal and Lone Tree Fire Roads

Position Statement

The Tamalpais Conservation Club has been recognized as Guardian of the Mountain since 1912. Our organization has consistently been at the forefront of preserving and protecting what is now Mount Tamalpais State Park, founded in 1930, and neighboring jurisdictions. Over the last ninety years, the Club has been actively working to preserve and protect the slopes and spurs of Mount Tamalpais through financial contributions and the direct involvement of its membership to build, maintain and restore trails, bridges and other manmade and natural features.

The directors of the Tamalpais Conservation Club object to the Application in its current form. The Application is biased in its views and observations, incomplete, misleading, inconsistent with the Trails Element of the Marin Countywide Plan, which it cites, and inconsistent with the California Department of Parks and Recreation's mission statement.

Specifically, the Tamalpais Conservation Club states the following claims are false:

"This project is widely supported by visitors and trail groups of all kinds."

"This project is widely accepted as an important breakthrough for multi-use trail access."

"This project is consistent with all local and state plans."

The organizations asked to provide letters of support during the development process of the Application excluded virtually all local, traditional, environmental and recreation groups. The overwhelming majority of recreational groups initially invited to participate with written comment were mountain biking groups, one of which is headquartered outside of Marin County and another headquartered in Colorado. When asked why the TCC was not provided with an opportunity to comment, the written response received from Assistant State Park Resource Ecologist Denali Beard claims it was an "oversight," further stating that "recreation-oriented groups" were contacted first. This explanation raises several questions of credibility.

It is wholly unacceptable that the Department of Parks and Recreation when seeking comment overlooked, unintentionally or otherwise, the TCC and affiliated groups including, but not limited to, the Sierra Club Marin Chapter, the Mount Tamalpais Interpretive Association, the Alpine Club, the Marin Audubon Society, the Marin Conservation League, the Marin Horse Council and the Bay Area Trails Preservation Council. The DPR is well aware several of the named groups have been at the local, state and national forefront of recreational use issues for well over a decade.

Furthermore the Board of Directors of the Tamalpais Conservation Club finds that the following statements are an inaccurate portrayal of the majority of stakeholders:

1. “MTSP has yet to realize its full recreational potential.” We believe the majority of the public desires a primarily low-key, pastoral recreational experience as opposed to converting Mount Tam into a primarily mechanical venue as suggested in this Application.

2. “This project will provide a more diverse, enhanced visitor trail experience.” We believe, as is demonstrated in the case of China Camp S.P., that in reality the suggested four-foot multi-use width will not enhance overall user experience. Instead it will result in increases in bicycling traffic and displacement of other user groups due to well-documented incompatibility issues.

3. “More narrow (multi-use) pathways are needed.” What has occurred on San Pedro Ridge when more narrow pathways were added to China Camp S.P. is a tremendous increase in serious erosion, the direct result of illegal bicycling use on trails closed to bikes, and the surreptitious creation of an illegal bicycling trails network throughout the neighboring jurisdictions.

4. “Roads to more narrowly constructed pathways will increase the opportunity for users to have a more aesthetically pleasing, safer and environmentally friendly, multi-use trail experience.” Narrow pathways, rather than slowing some mountain bikers down, serve to encourage tests of speed and technical skill for a small but very significant group of riders that has before, and will now, negatively impact the experience of the vast majority of all user groups.

5. “Steep slopes far exceed limits for safe travel, and encourage excessive mountain bike speed.” This is false. Steepness of slope and trail width are minor characteristics in determining speed and safety. Excessive mountain bike speed is a direct function of the attitude, demeanor, equipment quality and expertise of the user.

Safety is an issue when there is no regard for the rules and regulations, when riding beyond capabilities and when there is a lack of consideration for other users. Another important factor affecting safety is the mixing of vehicles capable of high speeds in a narrow space with slower modes of transport. A narrower trail increases the margin for error. It allows for fewer options and increases the risk to all users.

Key to this is that DPR makes no mention that MTSP's maintenance and enforcement staffs are at historically all-time lows thereby rendering enforcement of illegal uses difficult to impossible. It makes no mention how it intends to deal with the negative impact increased use will have on the rest of the facility and neighboring jurisdictions, nor how it intends to deal with additional traffic and the increased need for additional parking that it will create.

The Tamalpais Conservation Club requests that the process be suspended until all stakeholders are given an equal opportunity to comment on the Application and specifically requests that:

- 1. Additional input is sought from all interested stakeholders with an adequate time and opportunity to respond.**
- 2. The misrepresentations in the Application are corrected.**

Until these conditions are satisfied the issuance of a negative declaration would be improper.

While the TCC strongly supports public restoration projects and restoration of these two historic routes, we believe the Application in its current form is not in the best interests of Mount Tamalpais, its slopes and spurs, and the majority of its users.

Many of our organizations share a long and productive relationship with DPR. The Tamalpais Conservation Club expects that in the future the Department of Parks and Recreation, as steward, will make every effort to ensure all stakeholders are provided an equal opportunity to participate in projects of this kind.

Sincerely yours,

Larry Minikes, Corresponding Secretary

cc: State of California, Department of Parks and Recreation, Marin District Headquarters

Bay Area Barns and Trails
Bay Area Trails Preservation Council
California Alpine Club
Marin Audubon Society
Marin Conservation League
Marin Horse Council
Mount Tamalpais Interpretive Association
Sierra Club, Marin Chapter
Golden Gate National Recreation Area
Marin County Open Space District
Marin Municipal Water District
Press

**CONFLICTS ON MULTIPLE-USE TRAILS:
Synthesis of the Literature and State of the Practice
Sponsored by The Federal Highway Administration and The National Recreational
Trails Advisory Committee.**

**The full document is available at:
<http://safety.fhwa.dot.gov/fourthlevel/pdf/Conflicts.pdf>**

The National Recreational Trails Advisory Committee identified trail-user conflicts on multiple-use trails as a major concern that needs resolution. The Advisory Committee recognized that there is a significant amount of literature and expertise on this topic, but no one source that summarizes the available information. The Committee asked the Federal Highway Administration to produce a synthesis of the existing research to foster understanding of trail conflicts, identify promising approaches for promoting trail sharing, and identify gaps in our current knowledge. This synthesis is intended to establish a baseline of the current state of knowledge and practice and to serve as a guide for trail managers and researchers.

The challenges faced by multiple-use trail managers can be broadly summarized as maintaining user safety, protecting natural resources, and providing high-quality user experiences. These challenges are interrelated and cannot be effectively addressed in isolation. To address these challenges, managers can employ a wide array of physical and management options such as trail design, information and education, user involvement, and regulations and enforcement.

Past research has consistently found that most outdoor recreationists are satisfied with their recreation experiences. Likewise, most trail experiences on multiple-use trails are probably enjoyable and satisfying. Conflicts among trail users do exist, however, and these conflicts can have serious consequences.

Conflict in outdoor recreation settings (such as trails) can best be defined as "goal interference attributed to another's behavior" (Jacob and Schreyer 1980, 369). As such, trail conflicts can and do occur among different user groups, among different users within the same user group, and as a result of factors not related to users' trail activities at all. In fact, no actual contact among users need occur for conflict to be felt. Conflict has been found to be related to activity style (mode of travel, level of technology, environmental dominance, etc.), focus of trip, expectations, attitudes toward and perceptions of the environment, level of tolerance for others, and different norms held by different users.

Conflict is often asymmetrical (i.e., one group resents another, but the reverse is not true). The existing literature and practice were synthesized into the following 12 principles for minimizing conflicts on multiple-use trails. Adherence to these principles should help improve sharing and cooperation on multiple-use trails.

1. Recognize Conflict as Goal Interference

-- Do not treat conflict as an inherent incompatibility among different trail activities, but goal interference attributed to another's behavior.

2. Provide Adequate Trail Opportunities

-- Offer adequate trail mileage and provide opportunities for a variety of trail experiences. This will help reduce congestion and allow users to choose the conditions that are best suited to the experiences they desire.

3. Minimize Number of Contacts in Problem Areas

-- Each contact among trail users (as well as contact with evidence of others) has the potential to result in conflict. So, as a general rule, reduce the number of user contacts whenever possible. This is especially true in congested areas and at trailheads. Disperse use and provide separate trails where necessary after careful consideration of the additional environmental impact and lost opportunities for positive interactions this may cause.

4. Involve Users as Early as Possible

-- Identify the present and likely future users of each trail and involve them in the process of avoiding and resolving conflicts as early as possible, preferably before conflicts occur. For proposed trails, possible conflicts and their solutions should be addressed during the planning and design stage with the involvement of prospective users. New and emerging uses should be anticipated and addressed as early as possible with the involvement of participants. Likewise, existing and developing conflicts on present trails need to be faced quickly and addressed with the participation of those affected.

5. Understand User Needs

-- Determine the motivations, desired experiences, norms, setting preferences, and other needs of the present and likely future users of each trail. This "customer" information is critical for anticipating and managing conflicts.

6. Identify the Actual Sources of Conflict

-- Help users to identify the specific tangible causes of any conflicts they are experiencing. In other words, get beyond emotions and stereotypes as quickly as possible, and get to the roots of any problems that exist.

7. Work with Affected Users

-- Work with all parties involved to reach mutually agreeable solutions to these specific issues. Users who are not involved as part of the solution are more likely to be part of the problem now and in the future.

8. Promote Trail Etiquette

-- Minimize the possibility that any particular trail contact will result in conflict by actively and aggressively promoting responsible trail behavior. Use existing educational materials or modify them to better meet local needs. Target these educational efforts, get the information into users' hands as early as possible, and present it in interesting and understandable ways (Roggenbuck and Ham 1986).

9. Encourage Positive Interaction Among Different Users

-- Trail users are usually not as different from one another as they believe. Providing positive interactions both on and off the trail will help break down barriers and stereotypes, and build understanding, good will, and cooperation. This can be accomplished through a variety of strategies such as sponsoring "user swaps," joint trail-building or maintenance projects, filming trail-sharing videos, and forming Trail Advisory Councils.

10. Favor "Light -Handed Management"

-- Use the most "light-handed approaches" that will achieve area objectives. This is essential in order to provide the freedom of choice and natural environments that are so important to trail-based recreation. Intrusive design and coercive management are not compatible with high-quality trail experiences.

11. Plan and Act Locally

-- Whenever possible, address issues regarding multiple-use trails at the local level. This allows greater sensitivity to local needs and provides better flexibility for addressing difficult issues on a case-by-case basis. Local action also facilitates involvement of the people who will be most affected by the decisions and most able to assist in their successful implementation.

12. Monitor Progress

-- Monitor the ongoing effectiveness of the decisions made and programs implemented. Conscious, deliberate monitoring is the only way to determine if conflicts are indeed being reduced and what changes in programs might be needed. This is only possible within the context of clearly understood and agreed upon objectives for each trail area.

The available research on recreational conflict is helpful for understanding and managing conflicts on trails. There is a great deal we do not know, however. This report concludes by identifying many conflict-related research topics that have not been adequately explored.

Some of this suggested research is theoretical in nature, and some is suggested for applied experimentation by managers in the field. Trail managers recognize trail conflicts as a potentially serious threat. Many are optimistic, however, and feel that when trail conflict situations are tackled head on and openly they can become an opportunity to build and strengthen trail constituencies and enhance outdoor recreation opportunities for all users.

Maintaining User Safety

Unsafe situations or conditions caused by other trail users can keep visitors from achieving their desired trail experiences. This goal interference due to safety concerns is a common source of conflicts on trails. There are a number of threats to user safety that can occur on trails. Some of these include:

- * Collisions and near misses among users and/or their vehicles.
- * Reckless and irresponsible behavior.
- * Poor user preparation or judgment.

- * Unsafe conditions related to trail use (e.g., deep ruts, tracks on snow trail, etc.).
- * Unsafe conditions not related to trail use (e.g., obstacles, terrain, weather, river crossings, etc.).
- * Poor trail design, construction, maintenance or management.
- * Other hazards (e.g., bears, lightning, cliffs, crime, etc.).

To help maintain user safety on trails, planners and managers can attempt to control or influence many factors, including the following:

- * User speed (often has more to do with speed differential than the speed itself).
- * Mass of user and vehicle (if any).
- * Sight distances.
- * Trail width.
- * Trail surface.
- * Congestion (e.g., number of users per mile).
- * Users overtaking one other silently/without warning.
- * Trail difficulty (obstacles, terrain, condition, etc.).
- * User skill level and experience.
- * User expectations and preparedness (e.g., walkers who understand they may see bicycles on a particular trail can better prepare themselves for possible encounters).
- * Emergency procedures.
- * On-site management presence.

Research indicates that the following factors influence the amount of resource damage caused by trail use:

- * Soil characteristics: type, texture, organic content, consistence, depth, moisture (e.g., muddy versus dry), temperature levels (especially frozen versus thawed), etc.
- * Slope of surface and topography
- * Position in land form (e.g., northern versus southern exposure)
- * Elevation
- * Type of ecosystem
- * Type of wildlife
- * Type of vegetation in trail
- * Type of vegetation and terrain beside trail (influencing widening)
- * Quality of trail design and construction (especially regarding drainage)
- * Level of maintenance (e.g., effectiveness of drainage)
- * Type of use
- * Type of vehicle
- * Level of use
- * Concentration or dispersal of use
- * Season of use
- * Difficulty of terrain (to user)
- * Up or down hill traffic direction
- * Style of use or technique (e.g., skidding tires versus controlled riding)

There is a large body of research regarding the natural resource impacts of outdoor recreation. Much of this research is reviewed in *Visitor Impact Management: A Review of Research*, by Kuss, Graefe, and Vaske (1990). It provides an excellent summary and

synthesis of the findings of more than 230 articles related to the vegetation and soil impacts of recreation, 190 related to water resources impacts, and another 100 related to impacts on wildlife. Many of these deal directly or indirectly with trail use. Another excellent reference is a bibliography prepared by the National Off-Highway Vehicle Conservation Council (date unknown). It identifies more than 750 studies relating to off-highway vehicles and their use. A large number of these relate to resource impacts and resource protection.

Crowding

-- Crowding is more than the objective density of users in a particular area. It is a subjective judgment on the part of an individual that there are too many other people there. In other words, it is a negative evaluation of a particular density of people in an area (Stokols 1972; Rapoport 1975; Kuss et al. 1990). As such, crowding can reduce the quality of recreation experiences. Level of use does appear to affect feelings of crowding, but in most cases not directly. Levels of perceived crowding vary with such mediating factors as:

- * Number of encounters
- * Number of encounters preferred
- * Number of encounters expected
- * Discrepancy between actual and expected encounters
- * Motivations for participation (e.g., solitude versus social interaction)
- * Preferences (desires)
- * Expectations (what was anticipated)
- * Behavior (as opposed to the number) of others
- * Visitor attitudes
- * Type of area (e.g., primitive versus urban)
- * Location of contacts (e.g., trailhead versus campsite)
- * Proximity of others
- * Size of group
- * Size of group encountered
- * User's experience level
- * Perceived environmental disturbance
- * Type of encounter
- * Obtrusiveness of visual impact (e.g., bright-colored versus earth-toned clothes, tents, and equipment)

See Kuss et al. (1990) for an excellent review and synthesis of research related to crowding.

Crowding on trails can be the result of others participating in the same trail activity or different activities. Crowding can be related to feelings of conflict on trails.

As with crowding, conflict is not an objective state but depends on individual interpretations of past, present, and future contacts with others. Jacob and Schreyer (1980, 370) theorize that there are four classes of factors that produce conflict in outdoor recreation:

- * Activity Style

-- The various personal meanings attached to an activity. Intensity of participation, status, range of experience, and definitions of quality (e.g., experts and novices may not mix well).

* Resource Specificity

-- The significance attached to using a specific recreation resource for a given recreation experience (e.g., someone running her favorite trail near where she grew up along Lake Tahoe will not appreciate seeing a tourist demonstrate a lack of respect for her "special place" by littering).

* Mode of Experience

-- The varying expectations of how the natural environment will be perceived (e.g., bird watchers who are "focused" on the natural environment will not mix well with a group of ATV riders seeking speed and thrills who are "unfocused" on the environment).

* Tolerance for Lifestyle Diversity

-- The tendency to accept or reject lifestyles different from one's own (e.g., some trail users "just don't like" people who do not share their values, priorities, trail activities, etc.).

These four factors have been redefined by Watson, Niccolucci, and Williams (in press) as "specialization level," "definition of place," "focus of trip/expectations," and "lifestyle tolerance." Their research suggests that these factors may be better at predicting predispositions toward conflict than predicting actual goal interference.

1. "Conflict is a process of social interaction which is operationalized with the general motivational goal of eliminating environmental instability and restoring perceived equilibrium" (p. 251). According to Owens, all behavior settings have normative "rules." When competing groups view a setting and its purpose in different ways and/or there is inappropriate behavior, these rules begin to break down. In such cases people will employ various coping mechanisms (behavioral, cognitive, or affective) to try to eliminate the source of stress and try to return things to a more desirable state. Conflict occurs when these coping strategies are inadequate, unsuccessful, or unavailable in an acceptable period of time and alternatives seem to be unavailable (i.e., if a person's coping strategies don't work, his feelings of crowding can become feelings of conflict).

2. "Conflict is a cumulative process of social interaction which once established becomes an enduring psychological state guiding the behavior of individuals and/or groups" (p. 252). Owens proposed that this is how conflict can be distinguished from crowding. Crowding is an immediate reaction to present conditions and thus transient. Conflict is more persistent and enduring, lasting beyond a particular outing. Owens sees conflict itself as an experience which can be viewed as a continuum from "simmering discontent and frustration" to confrontation. It may or may not alter actual behavior. If overt confrontation appears, much of the damage of conflict may have already occurred. Kuss et al. (1990) noted three types of coping strategies, all of which change the character of the experience for the user forced to cope:

* Users re-evaluate the normative definition of what is acceptable (i.e., they adapt and accept the conditions they find).

* Users change their behavior (e.g., use less frequently, use at off-peak times, etc.).

* Users are displaced altogether (i.e., conditions are unacceptable to them, so they stop the activity or stop visiting that area).

In studies of recreationists on trails, rivers, and lakes, several themes and patterns have been found to relate to conflict. These themes tend to support the four theoretical propositions proposed by Jacob and Schreyer (1980) that were discussed above. These themes are:

* Level of Technology

-- Participants in activities that use different levels of technology often experience conflict with one another. Examples include cross-country skiers and snowmobilers, hikers and motorcyclists, canoe paddlers and motor boaters, and nonmotorized raft users and motorized raft users (Lucas 1964; Knopp and Tyger 1973; Devall and Harry 1981; Adelman, Heberlein, and Bonnicksen 1982; Noe, Hull, and Wellman 1982; Noe, Wellman, and Buhyoff 1982; Bury, Holland, and McEwen 1983; Gramann and Burge 1981).

* Conflict as Asymmetrical

-- Many times, feelings of conflict are one-way. For example, cross-country skiers dislike encountering snowmobilers, but snowmobilers are not as unhappy about encountering cross-country skiers. This type of one-way conflict has been found between many different activities (Stankey 1973; Schreyer and Nielsen 1978; Devall and Harry 1981; Jackson and Wong 1982; Adelman, Heberlein and Bonnicksen 1982). In general, trail users enjoy meeting their own kind, but dislike uses that are faster and more mechanized than their own (McCay and Moeller 1976; Goldbloom 1992).

* Attitudes Toward and Perceptions of the Environment

-- Users in conflict have been found to have different attitudes toward the environment (Knopp and Tyger 1973; Saremba and Gill 1991) and may perceive the environment differently. Perceptions may be influenced by when the user first visited the area, with long-time and frequent visitors being most sensitive to contacts with others (Nielsen, Shelby and Haas 1977; Schreyer, Lime and Williams 1984). People who view the environment as an integral part of the experience are more susceptible to conflict than those who see the environment as just a setting for their activity. (Low Impact Mountain Bicyclists of Missoula (LIMB), for example, encourages riders "to use mountain bikes to enjoy the environment, rather than use the environment to enjoy mountain bikes" (Sprung 1990, 29). Some experiences are dependent upon very specific environments. Likewise, people can become attached to particular settings (Williams and Roggenbuck 1989; Moore and Graefe 1994). Some mountain bikers feel hikers are too possessive toward trails (Hollenhorst, Schuett and Olson 1993).

* Others as Different

-- Users experiencing conflict perceive others to be different from themselves in terms of background, lifestyle, feelings about wilderness, activities, etc.

(Adelman, Heberlein and Bonnicksen 1982). However, trail-user groups are sometimes more similar than they believe (Watson, Williams and Daigle 1991). Method of travel and group size are the most visible cues users can evaluate to determine their similarity to other groups (Kuss et al. 1990). One negative contact can lead some sensitive users to conclude that "all of them are rude."

* Violation of Norms

-- Individuals and groups with different standards of behavior (social and individual norms that define what behavior is appropriate) often conflict with one another (Jacob and Schreyer 1980; Vaske, Fedler and Graefe 1986). Norms of behavior are established through social interaction and refined through an ongoing process. These norms influence how people behave and how they expect others to behave. For example, many fishermen resent canoeists who shout and yell (Driver and Bassett 1975). They apparently hold a norm that boisterous behavior is inappropriate in those situations. The strength of the norm violated (as well as the importance of the goal interfered with) will influence the magnitude of the conflict. Norms appear to be more useful than goals for predicting conflict (e.g., a hiker and a motorcyclist may share the same goals of experiencing nature and escaping from the city but may cause conflict for one another).

* Level of Tolerance

-- Level of tolerance for others is related to level of conflict (Jacob and Schreyer 1980; Ivy, Steward and Lue 1992). Levels of tolerance vary widely among individuals depending upon personal norms and situational factors such as group size, where the contact occurs, when the user first visited the area, motivations, and frequency of use (Vaske et al. 1986; Shelby and Heberlein 1986). Levels of tolerance are lowest in "wilderness" areas. Assumed images of activities and stereotyping influence tolerance as well (White and Schreyer 1981; Williams 1993). This is consistent with the belief among members of LIMB that Missoula's "live and let live" attitude contributed to their success in minimizing user conflicts on area trails.

* Environmental Dominance

-- Users who differ in terms of the importance they give to "conquering" the environment are likely to conflict. This is related to the importance of autonomy, control, challenge, and risk-taking goals (Bury, Holland and McEwen 1983). Another theme related to trail conflict often expressed by trail managers and trail users is the resentment toward newcomers that is often expressed by traditional trail users. This is similar to the "last settler syndrome" (Nielsen, Shelby and Haas 1977) where visitors want a particular place to remain the way it was when they first arrived. The first or traditional users want to be the last ones allowed access. Mountain bikers commonly complain that hikers want to unfairly exclude them from backcountry areas just because bicycle use is new and untraditional. This "last settler syndrome" is particularly acute in areas where one user group has built and/or maintained trails which are later invaded by other types of uses. Managers and new users must be sensitive to the understandable ownership the traditional users feel toward trails they have built and care for. A similar sense of ownership and tradition makes it more difficult to close trails to a particular use once that use is established. The animosity felt by some long-time mountain bikers toward

managers of the Mt. Tamalpias area (Marin County, north of San Francisco) is likely magnified by the fact that in the early days of mountain biking, all trails there were open to mountain biking. Single-track trails were subsequently closed to mountain bike use. In addition to the general causes of conflict summarized above, it is instructive to look at specific factors that lead to feelings of conflict on trails. Sources of conflict can be either willful or innocent. Some users are irresponsible and unfriendly. They behave in ways they know will annoy others or damage resources. Many, however, are simply not aware of how they should behave on trails. Examples of common sources of conflict among trail users reported by trail managers and users include noise, speed, smell of exhaust, surprise, lack of courtesy, trail damage (e.g., erosion, tracks, skid marks, etc.), snow track damage, different (and sometimes unrealistic) expectations, uncontrolled dogs, horse manure, fouled water sources, littering, animal tracks in snow, wild behavior, and lack of respect for others. Flink and Searns (1993) believe conflict results from an increase in demand for trail resources, increased use of existing limited trails, poor management, underdesigned facilities, lack of user etiquette, and disregard for the varying abilities of trail users (p. 194).

A study of readers of Backpacker magazine found that over two-thirds felt the use of mountain bikes on trails was objectionable (Viehman 1990). Startling other trail users, running others off the trail, being faster and more mechanized, damaging the resources, causing erosion, frightening wildlife, and "just being there" were the biggest concerns (Kulla 1991; Chavez, Winter and Baas 1993). Keller (1990) notes that brightly colored clothes, a high-tech look, and the perception of a technological invasion can all be sources of conflict felt by others toward mountain bikers.

Just as some physical damage to trails is not caused by trail users, some conflicts on trails are not due to other trail users at all. Aircraft noise from sightseeing planes and helicopters, for example, is a major irritant to trail users in Hawaii. Noise and smells from nearby roads or developments can have as much or more impact on trail experiences than conflicts with other users.

So, following this collection of items that can cause conflict on trails, the relevant question is, how big a problem is trail conflict? Certainly, conflict is a major problem on some multi-use trails (Flink and Searns 1993). As mentioned earlier, however, past research has consistently found that outdoor recreationists are well satisfied with their recreation experiences (Kuss et al. 1990, 1991). This has been found in a variety of settings, including trails. Because the conflict studies noted above were designed to examine recreational conflict, many of them focused on areas where visible conflicts were occurring. These studies do not give a clear picture of the scope of conflict that might be occurring on trails in general. Conflicts are certainly a serious threat to satisfaction, but serious conflicts may not be the norm.

Several studies of multiple-use rail-trails have included questions related to user conflicts. In a survey of rail-trail managers conducted by the Rails-To-Trails Conservancy in 1991, over half of the 83 managers responding reported no conflicts or "few if any" conflicts on their trails. The most common type of conflicts reported were between hikers and bikers,

followed by conflicts between equestrians and bikers. Conflicts involving in-line skaters, cross-country skiers, and dogs were also reported.

A study of three rail-trails in Iowa, Florida, and California found that users reported little problem with conflict on average. More than 2,000 users were asked to rate "conflicts with other activities" and "reckless behavior of trail users" on a 7-point scale where "1" represented "not a problem" and "7" represented "a major problem." The mean response was less than 2 on each trail for "conflicts with other activities" and ranged from 1.5 to 2.8 for "reckless behavior of trail users" (Moore, Graefe, Gitelson and Porter 1992, III-26). The same study included an open-ended question that asked "What things did you like least about the trail?"

The top three responses were recorded for each user. Of a total of 2,128 comments, 316 (14.8 percent) related to the behavior of other users. The most common of these (239) were about bicyclists being inconsiderate, riding two-abreast, passing with no warning, going too fast, and other unspecified concerns about bikers. An additional 72 (3.4 percent) identified crowding as the thing liked least. Similar results were found in a study of trail users on 19 multi-purpose pedestrian and bike trails in Illinois (Gobster 1990, 32). "Use problems" (crowding, conflict, and reckless users) received mean ratings of less than 2 on a 5-point scale where "1" represented "not a problem" and "5" represented a "major problem."

A recent National Park Service study of backcountry recreation management provided information related to conflicts on backcountry trails in 93 national parks (Marion, Roggenbuck and Manning 1993). Nine percent of the parks reported that conflicts between horses and hikers were a problem in many or most backcountry areas. Three percent of the parks reported that conflicts between hikers and mountain bikers were a problem in many or most areas. Day users (apparently due to their large numbers), overnight users, horse users, and mountain bikers were all felt to cause visitor conflicts.

Day users, overnight users, OHV/ATV users, horse users, and mountain bikers were also reported to create problems through inconsiderate behavior. Conflicts among trail users are a serious problem in some areas. On Mt. Tamalpais in Marin County, California, for example, "renegade" mountain bikers have allegedly built illegal trails and engaged in vandalism and sabotage to attempt to gain access to single-track trails closed to them. However, there are also areas where users are successfully (and apparently happily) sharing trails. Unfortunately, the existing research does not offer much insight into how widespread a problem recreational conflict is on trails.

Many of the managers we talked to felt conflict was a problem. Several also volunteered that they expected conflicts to increase unless they could do something about the problem soon.

Summary

Managers of multiple-use trails face many interrelated challenges. Most important, they must attempt to keep users safe, minimize negative impacts to natural resources, and

provide for high-quality visitor experiences. All of these challenges involve managing various types of impacts caused by recreational use. Conflicts among trail users are one of these impacts. After extensively reviewing the recreation literature, Kuss et al. (1990) developed five principles related to the impacts caused by outdoor recreation (pp. 5, 187-188). Although developed to explain the environmental and social impacts of outdoor recreation in general, they apply equally well to the impacts (including conflict) that challenge managers of multiple-use trails in particular. They consider contacts between users and the damage users cause to the environment as "first-order" social impacts (p. 189). They feel these impacts interact to cause combinations of perceived crowding, dissatisfaction, perceived resource impacts, as well as conflicts between users. Their principles can be summarized as follows:

- * Recreational use can cause an interrelated set of impacts to occur (e.g., damage to natural resources caused by one group can lead to feelings of conflict or crowding in another group). There is no single predictable response to recreational use.
- * Impacts are related to level of use, but the strength and nature of the relationships vary widely and are influenced by many aspects of use intensity and a variety of situational variables.
- * Tolerance to impacts vary (e.g., all individuals do not respond the same way to encounters with other visitors, just as all soils or plants react differently to trampling).
- * Impacts are activity-specific. Some activities create impacts more quickly or to a greater degree than others. Impacts even from the same activity can vary according to such factors as mode of transportation, characteristics of visitors, party size, and behavior.
- * Impacts are site-specific. Given a basic tolerance level to a particular type of recreation, the outcome of use may still depend on the time and place of the encounter or disturbance. Conflicts on trails can be a serious, complex challenge, but one that must be addressed if users are to have safe, satisfying experiences. The next section details the tools available to address the challenge of conflict on multiple-use trails.

B. Ways to Avoid or Minimize Conflicts on Multiple -Use Trails

As noted earlier, most participants are satisfied with their outdoor recreation experiences. The challenges discussed in the preceding section, however, can lead to severe consequences if not managed properly. In addition, the nature of the recreation experience limits the manager's options in addressing the potential negative impacts of trail use. Freedom, and freedom of choice in particular, are essential for high-quality outdoor recreation on and off trails. Multiple-use trail managers must be sensitive to this fact and avoid restriction and manipulation whenever possible. The "minimum tool rule" proposed by Hendee, Stankey, and Lucas (1990) for wilderness management is an appropriate guideline for the management of most multiple-use trails as well. They advocate using the least intrusive measures (whether physical or managerial) that will still achieve area objectives. This sensitivity is critical to maintaining the freedom and naturalness so important to most trail-based recreation.

A wide variety of possible responses to addressing conflict problems exists. For example, rail-trail managers responding to a survey by the Rails-To-Trails Conservancy listed the following as techniques they use to overcome conflict-related problems on their trails (listed from most to least frequently reported):

- * signage
- * education
- * meeting with user groups
- * expanding facilities
- * police or ranger patrols
- * enforcement of regulations
- * brochures articles in newsletters or local newspapers
- * imposing speed limits
- * volunteer trail patrols
- * partial closings
- * bicycle bell give-aways

In a recent National Park Service study of backcountry recreation management in 93 national parks (Marion et al. 1993), managers listed the following as actions they had taken to reduce visitor crowding and conflict in backcountry areas (the numbers following each indicate the percent of managers reporting that they used that technique):

- * Inform visitors about crowded conditions they may encounter in certain areas (56 percent)
- * Encourage quiet behavior and activities (45 percent)
- * Inform visitors about conflicting uses they may encounter in certain areas (40 percent)
- * Encourage use of less popular access points and backcountry areas (38 percent)
- * Encourage off-season use (29 percent)
- * Designate trails for different types of visitor use (27 percent)
- * Encourage visitors to use natural-colored equipment and clothing (18 percent)
- * Encourage weekday use (14 percent)
- * Segregate different types of visitor use by geographic area (12 percent)
- * Discourage use during peak seasons (12 percent)
- * Discourage weekend use (4 percent)
- * Encourage outfitters and large groups to use lesser used areas (2 percent).

The following section discusses these and other possible responses managers can take when faced with one or more of the safety, resource protection, or user experience challenges noted in the previous section. These responses are grouped into two broad categories: physical responses and management responses. Management responses are further broken down into three types: information and education, user involvement, and regulations and enforcement. There is considerable overlap between the physical and management responses as well as among the three types of management responses. An effective program will include many different tools.

Strategies will differ depending upon whether the trail is an existing one or one planned for new construction. There is no reason to wait for any problem to occur before taking steps to address it. This is especially true of conflict. It is always better to try to avoid conflict before it becomes a challenge rather than try to reduce it after it is entrenched.

Responses may also be affected by factors outside the manager's immediate control. Occasionally sharing trails is not an option for managers or users such as when a private or corporate landowner agrees to allow only certain activities (e.g., snowmobile use). These situations may occur as conditions of a lease, easement, or other agreement. A more common situation that can limit managers' options is overall agency policy. See Keller (1990) for an excellent discussion of the two general policy approaches that guide decisions on mountain bike access (and access for other trail activities) to public lands.

Keller identifies a "trails open unless declared closed" policy and a "trails closed unless declared open" policy. Although policies can be changed, they form the context within which managers and users must address conflict and promote cooperation.

Note that although many of the following approaches are directed toward trail users, most require action on the part of trail managers as well as users. Some strategies will require training for the managers, staff, and volunteers who implement them. Conflict resolution training for individuals facilitating initial meetings of different user groups would be very helpful, for example. As pointed out by Keller (1990) the land manager's approach to the issue can be every bit as important as the proposal itself (p. 24).

Dear Sierra Club member:

On January 31, 1998 the Club's Wild Planet Strategy Team unanimously adopted the Background and Guidelines below to accompany the 1994 Policy on Off-Road Use of Bicycles. The guidelines are intended to provide Club groups and chapters with information and guidance useful to making trail use decisions in their area. The roles of policy and guidelines are discussed in "Conservation Policy Development," available from Sierra Club's Office of Volunteer Services.

The Wild Planet Strategy Team would like to thank those who reviewed and commented on the several drafts of the guidelines. A summary of comments on the most recent draft, and responses to those comments, is available from the undersigned.

We will appreciate your thoughts on the guidelines as they are put to use in specific situations: what works, what doesn't, and where improvements can be made. We would also like to add to the Appendices new studies and information that can assist Club volunteers dealing with bicycle use questions. Descriptions of group and chapter experiences with bicycle trail planning and projects will also be useful. Please forward all such comments to the undersigned.

Finally, we are working with the International Mountain Bicycling Association and its affiliates on recreation and conservation projects of mutual interest. To that end, Mark Bettinger of the Club's Northeast Office is available to help resolve conflicts over bicycle use. If your Sierra Club group or chapter is having difficulties with bicycle issues and needs assistance, please contact him at 85 Washington St., Saratoga Springs, NY 12866 (Tel.: 518 587-9166; Email: mark.bettinger@sierraclub.org).

Sincerely,

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POLICY ON OFF-ROAD USE OF BICYCLES

The following Policy on Off-Road Use of Bicycles was adopted in May 1994 by the Sierra Club Board of Directors:

I. POLICY

1. Use in officially designated wilderness:

The Sierra Club reaffirms its support for the Wilderness Act's prohibition of "mechanized modes of transport," including non-motorized vehicles, from entry into designated wilderness.

2. Use of vehicles on other public lands:

a. Trails and areas on public lands should be closed to all vehicles unless (1) determined to be appropriate for their use through completion of an analysis, review, and implementation process, and (2) officially posted with signs as being open.

b. The process must include (1) application of objective criteria to assess whether or not environmental quality can be effectively maintained, and whether the safety and enjoyment of all users can be protected; (2) a public review and comment procedure involving all interested parties; and (3) promulgation of effective implementing regulations where impacts are sufficiently low that vehicle use is appropriate.

c. Trails and areas designated for vehicular use must be monitored periodically to detect environmental damage or user interference inconsistent with the above criteria. Where this occurs, the trail or area must be closed to vehicles unless effective corrective regulations are enforced.

II. BACKGROUND

The Sierra Club is concerned about the effects of use of bicycles off-road. Concerns have been raised about effects such as soil erosion, impacts on plants and animals, displacement of other trail users, and impacts on other users' safety and enjoyment. These concerns argue for special regulation, with effective enforcement, of off-road bicycling.

III. GUIDELINES FOR IMPLEMENTATION

The following Guidelines were developed by the Sierra Club Wild Planet Strategy Team with the help of a Mountain Bicycling Task Force to help interpret and implement the policy on off-road use of bicycles:

A. Purpose

The Sierra Club recognizes that bicyclists can be legitimate users of many non-Wilderness backcountry trails and supports responsible off-road bicycling. In an effort to find common ground and work for positive and shared environmental and recreational goals, the Sierra Club and International Mountain Bicycling Association (IMBA) agreed to a set of principles (Park City Agreement, Appendix A). The Sierra Club affirms its commitment to those principles.

All backcountry users, including bicyclists, have an effect on the environment (e.g., soil erosion and effects on plants and animals). These Guidelines should be used to identify places and situations where bicycles are clearly not appropriate, to recognize opportunities where bicycle use can be encouraged, to minimize impacts where bicycles are allowed, to foster cooperation between trail user groups, and to maximize the quality of the recreational experience for all users.

B. Site Specific Analysis

Public lands include a range of landscapes from urban to backcountry, from alpine to coastal, from desert to wetlands, with vastly different amounts and mixes of recreational use. One solution might not work equally well in all places. Therefore, implementation of this policy will be on a site-specific basis.

No general rule can be drawn concerning appropriateness or inappropriateness of use of bicycles on specific trails or areas until the conditions stipulated in the policy have been met: the appropriate land management agency must complete a competent analysis that considers public input.

Single track trails can present difficult management, safety, and environmental protection situations, but may be acceptable for bicycling as determined on a local, case-by-case basis. See Appendix D for suggestions on reducing impacts of bicycles.

C. Wilderness Opportunities

By law, bicycles are excluded from federal Wilderness areas. Potential for losing opportunities for Wilderness designation should be taken into account when planning bicycle access. Conversely, the potential for losing bicycle opportunities (and replacing such opportunities) should be taken into account when planning Wilderness designation. Sierra Club members are therefore encouraged to work with local off-road bicycle groups when preparing Wilderness proposals.

D. Cooperation and Education

The Sierra Club encourages its members to join in the spirit of the Park City Agreement (Appendix A) and to work with local off-road bicycle groups on projects of mutual interest.

Trail user etiquette and rider education programs may enhance cooperation and reduce friction between different trail user groups, and may help reduce damage to the environment. The Sierra Club encourages all trail users to cooperate in efforts to heighten

awareness of, and participation in, these trail user education programs. These and other programs listed in Appendix E may help reduce the need for closing trails to bicycles.

E. Analysis, Review, and Implementation Process

A land management agency must take into consideration the following when assessing bicycle use:

1. Trails open to bicycles must successfully pass an agency review for suitability. Criteria to include in such a review are listed in Appendix C.
2. Trails open to bicycles should fit compatibly into the overall trail system, providing (to the extent possible) a satisfying and safe bicycling experience that will minimize the desire of bicycle riders to enter closed areas. See Appendix D for additional guidance.
3. Trails open to bicycles should be designed to need minimal enforcement, e.g. relying on natural barriers and terrain features such as ridgelines to prevent bicycle riders from straying into closed areas. While signs can be important for regulating bicycle traffic, trails needing excessive and unsightly signage are not appropriate.
4. Implementing regulations should be enforceable, clearly posted in appropriate locations such as trailheads, and emphasized through agency patrols and outreach programs. The regulations should be simple, consistent, and generally understood and widely accepted by all users. See, for example, the Rules of the Trail in Appendix E.
5. Trails open to bicycles should have a monitoring plan developed and implemented. For examples of key elements, see Appendix F.

Appendix A - Park City Agreement

Sierra Club and International Mountain Bicycling Association agree:

1. To work for Wilderness, park, and open-space protection;
2. That mountain bicycling is a legitimate form of recreation and transportation on trails, including single track, when and where it is practiced in an environmentally sound and socially responsible manner;
3. That not all non-Wilderness trails should be opened to bicycle use;
4. To create joint projects to educate all non-motorized trail users;
5. To encourage communication between local mountain bicycle groups and Sierra Club entities.

(Agreement reached at Park City, Utah, April 1994.)

Appendix B - Definitions

1. Bicycle -

A two-wheeled human-powered vehicle. For all vehicles powered by electric or internal combustion motors, the Sierra Club policy "Off-Road Use of Motor Vehicles" applies.

2. Single-track trail -

A single-track trail is one where users must generally travel in single file.

3. Public Land -

Public land is land managed by federal, state, or local government, and is open to the general public for recreation pursuits.

4. Significant -

Any degradation of the environment, user safety, or enjoyment may be considered significant, depending on the permanence, scale, intensity, and context of the impact. Determination of the meaning of significant will rest, to a great degree, upon local entities and the regulatory agencies to which they appeal for such a determination. See, for example, the definition in the National Environmental Policy Act (40 CFR 1508.27).

Appendix C - Criteria

When a land management agency reviews suitability of a trail for bicycle use, bicycle use should not be allowed where it would cause the following measurable effects. This list is not all-inclusive.

1. Significant soil erosion or significant damage to streams or fish habitat.

2. Rutting, impairment of trail drainage, breakdown of trail shoulders, and other forms of damage not correctable using U.S. Forest Service trail maintenance standards and techniques.

3. Significant disturbance of plants or animals or their habitat.

4. Damage to archaeological, scientific, historical, or other significant resources, including rare natural features of interest for scientific study.

5. Danger to the safety of bicyclists or other users because of bicycle speed, steep grades, steep terrain, sharp curves, slippery or unstable trail surfaces, or limited visibility. See Appendix D for design features that can improve safety.

6. Significant displacement or annoyance of other non-motorized users.

Appendix D - Some Methods to Reduce Bicycle Impacts (not in priority order)

1. Walk bicycles in certain areas.

2. One-way-only trail sections.

3. Speed limits (though these may be difficult to enforce).

4. Restrict use by time of day, day of week, week of month, month of year.

5. Restrict use by season (e.g. to protect soils or sensitive habitats).

6. Separate different types of uses at trailheads and congested areas.
7. Party size limits.
8. Area permits/licenses, reservations, and trip permits, though these should be instituted only in special situations as a last resort.
9. Trail alignment to minimize soil erosion, avoid wetlands, sensitive plant or animal habitat, and sensitive archaeological or cultural features.
10. Trail alignment to maximize compatibility with adjacent land use and connecting trail use.
11. Natural and artificial design features that restrict bicycle speed, such as barriers and speed bumps, which are not an undue impediment to other non-motorized users.
12. Design features that enhance sight distance, e.g. locating the trail away from tall brush.
13. Design features that minimize trail erosion: proper grades, turn radii, tread hardening, and drainage control.
14. Wide or pull-out sections to facilitate safe passing.
15. Design features for user enjoyment: loop trails, scenic destinations, picnic/camp sites.
16. Barriers to prevent leaving trail. Block and obliterate (rehabilitate) unauthorized trails.

Appendix E - Trail User Etiquette and Education

1. In order to minimize conflicts with other trail users, bicyclists should know and use the established Rules of the Trail:

- Ride on open trails only.
- Leave no trace.
- Control your bicycle.
- Always yield trail.
- Never scare animals.
- Plan ahead.

2. Bicyclists should know and follow applicable laws and regulations.

3. Bicyclists yield trail to foot travelers, both animal and human. Yielding trail means: slow down, be prepared to stop; establish communication; dismount when appropriate; and pass safely.

4. Opportunities to educate users include: audiovisual presentations; public service announcements prepared for television, radio and print outlets; community presentations; production of printed materials such as brochures and posters; information kiosk or trailhead signing; trail information hotlines or Internet sites; bicycle patrols; widely distributing maps and guidebooks; and advertising by equipment manufacturers and suppliers that promotes responsible bicycling. Joint activities can provide rider education, trail planning, volunteer trail maintenance, or just plain fun interaction.

5. Cross-country bicycle travel off trails is not appropriate.

Appendix F - Monitoring and Enforcement

If a trail is determined to be suitable for bicycles, the land management agency should develop and implement a monitoring plan:

- 1. Identify the impacts being monitored, including impacts to water quality, soils, wildlife, flora, and other users (accidents, injuries, enjoyment of the trail).**
- 2. Establish quantitative and qualitative measurement scales for impacts.**
- 3. Establish impact thresholds which, if reached, trigger correction or closure of the trail to bicycles.**
- 4. Establish a schedule for monitoring activities.**
- 5. Establish a written reporting system.**
- 6. Train personnel to follow the monitoring program.**
- 7. Reliable trained persons from user groups may be used to supplement monitoring by staff.**
- 8. Specify baseline inventories to allow for monitoring of trends.**
- 9. Secure the resources to carry out the monitoring plan.**
- 10. The best enforcement of regulations will come from regular patrolling combined with effective education and an active monitoring program.**

Appendix G - Resource List/Bibliography

The following publications may prove helpful to local Sierra Club groups and chapters. They are only suggested readings, and this is an incomplete list.

Roger Moore, Conflicts on Multiple-Use Trails; Synthesis of the Literature and the State of the Practice. Federal Highway Administration, Report #FHWA-PD-031, August 1994.

U.S. Forest Service Trails Management Handbook, FSH 2309.18.

Mountain Bikes on Public Lands, Bicycle Federation of America.

Andy Kulla, Recreational Specialist, A New Perspectives Approach in National Forest Management and its Application to Mountain Bike Management. USDA Forest Service Region One, Lolo National Forest Supervisor's Office.

Mid-Peninsula Regional Open Space District trail use policies - 1990 Trail Use guidelines and mitigation measures, January 1993.

Strategic Plan - 1994-98, Mountain Biking Program, San Jacinto Ranger District. USDA Forest Service Region Nine, San Bernardino National Forest.