Trail Change-in-Use Proposal Evaluation

Park (Including classification):	Mt Tamalpais State Park	**Evaluation Team Members**	Mike Nelson
Park Sub-classification	N/A		Victor Bjelajac
Trail Name:	Easy Grade		Bree Hardcastle
Location in Unit:	Mt. Tam Amphitheater		Roberto Walton
Current Use Designation(s):	Hike only		Cyndy Shaffer
Proposed Use Type Change:	Add Bikes		
Use Change Initiated By:	Marine County Bicycle Coalition		
Evaluation Date:	June 29, 2015		

This worksheet is designed to help park managers make an objective, defensible, and consistent determination regarding a proposed change-in-use (CIU) for a trail in the state park system. The first section is designed to make an initial determination regarding the compatibility of the proposed CIU with the park's classification and management. Refer to the rules and regulations for the park's classification as well as approved planning documents when making this preliminary decision. If the CIU is found to be incompatible, note the rule, regulation, or planning document under which the determination to deny was made.

Preliminary Considerations

		Yes	No	NA	Comments
0.1	Is the proposed CIU compatible with the park unit classification or sub-classification per the CA Public Resources Code and/or Code of Regulations?	X			
0.2	Is the proposed CIU on a trail that passes through more than one unit or sub-unit?		X		
0.3	Is there an approved general plan?	X			1980 General Plan
0.4	Is there an approved road and trail management plan?		X		
0.5	Is there an approved area management plan?		X		
0.6	If there is an approved and relevant planning document, is the proposed CIU consistent with planning recommendations?	X			
0.7	Has a previous CIU request been made and evaluated for this trail?		X		
0.8	Is the proposed CIU located on a non-system (volunteer trail)?		X		
0.9	Is the proposed CIU on a facility designated as a trail or road? *This form cannot be used to consider a CIU for non-designated facilities such as a beach or desert wash.*	X			
0.10	Based on the preliminary considerations, should the CIU be further evaluated? *If yes, continue to the next page. If no, please explain.*	X			

If found to be compatible, the following pages aid park managers in considering the broader impacts of the proposed CIU, including necessary management or design options. Clearly identify the primary concerns and considerations for each item that significantly contributes to approval or denial of the CIU proposal.

Summary of Findings and Considerations

Complete this section last

Transfer the results from the following pages to this summary page.
If using the electronic version, the results will transfer automatically.

		Yes	No	NA	Comments
Part 2	Will the CIU be compatible with existing visitor uses, facilities, and services?	X			
Part 3	Will implementation of the CIU enhance circulation?	X			
Part 4	Would implementation of the CIU with management and design options (as recommended) maintain trail safety?	X			
Part 5	Will the trail be sustainable following implementation of the CIU with management and design options (as recommended)?	X			
Part 6	Would implementation of the CIU with management and design options (as recommended) create significant negative impacts to the natural or cultural resources?		X		
Part 7	Will implementation of the CIU with management and design options create a significant on-going maintenance or operational workload?		X		

Recommendation Based on Evaluation Considerations

Substantiate in Comment Box

Recommend that the park's general plan or road and trail management plan be developed or amended to evaluate the CIU		X		
Recommend that the CIU be approved with no design or management modifications.		X		
Recommend that the CIU-be approved with design options such a major or minor re-route or minor re-construction.	X			
Recommend that the CIU be approved with management options such as alternating days of use, one way travel, and/or seasonal closures	X			Recommended management options to include user education, slow and say hello campaign and encouragement of user cooperation.
Recommend that the CIU be put on hold				

Final Comments/Determinations

The use of the Easy Grade Trail by bikes would provide an important non-paved biking route connecting the Pantoll Ranger station and the Mountain Amphitheater. This connection would facilitate regional non-paved bike connections to the Golden Gate National Recreation Area (GGNRA) property to the south and the Marin Municipal Water District (MMWD) property to the north. The existing bike connection from the Pantoll Ranger Station to MMWD land requires bikes to share use with motorized vehicles on a curving and relatively narrow section of the Pantoll Road. Allowing bike use on easy grade would alleviate safety concerns by eliminating the need to use a large portion of the Pantoll Road when making connections to MMWD property.

Easy Grade Trail is currently a relatively sustainable trail in most locations. It is anticipated that the majority of the trail alignment will remain sustainable with the addition of bike use if trio maintenance (brushing, removing fill slope berms, removing back slope sloughing) and minor reconstruction (increase outslope) is preformed and maintained on the trail. However, it is anticipated that some steeper locations along the trail will exceed maximum sustainable grades once bikes are added to the trail. It is also unknown how many bikes will use easy grade if use allowed. It will therefore be necessary to re-engine (install rolling

grade dips, rock armor trail tread) in these sections of trail to maintain sustainability. It is also recommended that the trail be rerouted in approximately three locations to reduce existing linear grades in excess of maximum sustainable grades.

Easy Grade Trail is currently receives relatively low use from hikers only and safety issues have not been a concern. It is anticipated that the addition of bikes may present safety issues associated with down hill bike travel speeds and encounters with hikers and/or uphill bikers. This would be a particular concern on steeper sections of the trail that will not be rerouted to reduce linear grades. Limited pinch points may be required prior to blind curves in these steeper sections of trail to reduce bike speeds through these low visibility locations. In addition, armored textured rolling grade dips and armored drainages would be installed to both improve trail drainage and protect waterways, but also to slow bike users by roughing the trail surface. The trailhead located at the Mountain Amphitheater also posses a potential safety concerns associated with the convergence of the Easy Grade Trail and the Bootjack Trail and high visitor use during amphitheater special events. In addition there are steps located just prior to the Mountain Amphitheater trailhead which may pose an additional safety concerns for some bikers (depending on technical riding capabilities) and hiker/biker encounters in this area. It is therefore recommended that the last part of the trail connecting to the Mountain Amphitheater be rerouted to a separated trailhead located uphill form the existing one. This will provided separation of use between the trails and allow for more definitive direction and enforcement of allowable use on each trail. In addition, the Easy Grade Trailhead will be separated form potential bootjack trail use associated with special event performances. This trail reroute will also reduce trail linear grades and provide increased trail sinuosity to reduce users speeds and avoid the need for additional pinch points for speed control.

Initial evaluations indicate there should be no significant impacts to natural or cultural resources associated with the change-in-use and modifications required for change-in-use approval if standard departmental best management practices are implemented. Other agency permits (RWQCB, Army Corps, CA Dept. Fish and Game) will be required for drainage crossing re-engineering necessary for trail sustainability. Plant surveys will also be required as part of project development and implementation. Identified sensitive plant locations, as determined by surveys, will be avoided and/or construction techniques will be modified for minimization of potential impacts.

The trail is currently not being maintained on a regular or cyclic basis. Given the lack of regular maintenance the trail has remained in a relatively sustainable condition with the exception of a few locations. Depending on level of use if bikes are added, it is expected that the additional wear and tear on the tread surface cause by the mechanical wear of bike tires and breaking will occur. It is anticipated that this potential additional wear and tear will be mitigated through the proposed design modifications recommended for sustainability and that significant additional resources will not be required to maintain the trail outside of an increase in trio maintenance to maintain sight distances and sufficient outslope for drainage. Maintaining user compliance through signage, education and cooperative efforts with user groups is not expected to create significant additional work loads or added cost for park staff.

Trail Change-in-Use Proposal Evaluation

Multiple CIU requests may require development or amendment of a unit wide road and trail transportation management plan.
Qualified staff, including a DPR-trained Trail Coordinator will complete this survey and checklist to:
(1) Determine the sustainability, safety, and feasibility of a proposed CIU for a single trail.
(2) Determine the appropriateness of the CIU in relation to cumulative impacts to the existing uses (users, routing, hiking opportunities, etc.)
(3) Validate the existing conditions described on the attached trail log. The trail log should address typical log elements and positive and negative attributes related to the evaluation criteria.

Evaluation Considerations		Yes	No	NA	Comments
Part 1 Existing Conditions					*Describe positive and negative impacts of the proposed CUI and any other details related to proposal evaluation.*
1.1	Is the trail a controlled access road?		X		
1.2	ADA Accessible Route of Travel		X		
1.3	Connection to a trail head or other accessible facility?		X		
1.4	What is the trail's current classification?	Class II			*Enter the trail class (I, II, III, or IV)*
	Trail or road surface type:	*Check All Applicable*			**Comments**
1.5	Asphalt				
1.6	Concrete				
1.7	Gravel				
1.8	Native Material	X			Primarily native material but some aggregate has been placed in locations along the trail.
	Trail and road facility use type				
1.9	Public	X			
1.10	Administration				
1.11	Fire Break				
1.12	Motorized Recreation				
1.13	Non-Motorized Recreation				
1.14	Road used as trail route				
	Current trail uses allowed	**Yes**	**No**	**NA**	
1.15	Pedestrian	X			
1.16	Mountain Bike		X		
1.17	Equestrian		X		
1.18	Other - specify in comment box				

Trail Change-in-Use Proposal Evaluation

Evaluation Considerations		Yes	No	NA	Comments
Part 2 Compatibility with Existing Visitor Uses, Facilities, and Services		**Yes**	**No**	**NA**	
Existing Conditions					
2.1	Is the trail high-use or in a high use area?		X		The trail does not receive high use, but the trailhead area around the Mountain Amphitheater can receive high use associated with Mountain Theater activities and use from the Bootjack Trail.
2.2	Is there evidence of unauthorized use?	X			Antidotal reports of Mountain bike use from park staff and occasional evidence of bicycle tire tracks on the trail.
2.3	Does the proposed use currently exist in the park?	X			Biking is currently allowed on other trails in the park unit.
2.4	Are there other routes in the unit or on nearby public land that adequately accommodate the type of use proposed?		X		Although the National Park Service and Marin Municipal Water District (MMWD) allow mountain biking in certain locations there still is an unmet latent demand for additional non paved biking in the region.
2.5	Is there documented survey or statistical information that identifies a need/desire for the CIU?		X		No statistical data is known that addresses this issue
2.6	Would the CIU create conflicts with existing facilities connected or adjacent to the trail (trail heads, stables, campgrounds etc.)?		X		
2.7	Would significant user conflict be anticipated with implementation of the CIU?		X		This trail is not heavily used by hikers and equestrian use is not allowed. Design and management modifications would also reduce the potential for user conflicts.
Part 2	**Based on above considerations, will the CIU be compatible with existing visitor uses and services?**	X			The currently condition of the trail is relatively conducive and compatible with existing use and facilities. Design and management modifications would help to increase this compatibility.
#3 Effects to Circulation Patterns		**Yes**	**No**	**NA**	
	Does the CIU:				
3.1	Provide a loop, semi-loop, or other connection for the CIU user group?	X			Provides non-paved vehicular road connection between the Pantoll use area and the Mountain Amphitheater. Accommodates regional connectivity to and between MMWD and NPS roads and trails.
3.2	Legalize or legitimize unauthorized trail use currently occurring in the unit?	X			

Trail Change-in-Use Proposal Evaluation

Evaluation Considerations		Yes	No	NA	Comments
3.3	Provide a connection to adjacent land agency that allows similar use?	X			Provides connections to and between MMWD and NPS roads and trails that allow bike use.
3.4	Improve circulation or relieve congestion on other high-use trails?		X		
3.5	Create the potential need for use changes on adjacent or connecting trails or facilities?		X		
3.6	Require a seasonal closure to mitigate resource impacts?		X		
3.7	If yes, will seasonal closures disrupt circulation patterns?			X	
Part 3	**Based on above criteria, will implementation of the CIU enhance circulation for the new use type?**	**X**			

Trail Change-in-Use Proposal Evaluation

Evaluation Considerations		Yes	No	NA	Comments
#4 Effects to Trail Safety		**Yes**	**No**	**NA**	
Existing Conditions					
4.0	Are there documented safety concerns resulting from interactions between different user groups at the requested CIU location(s)?		X		Trail is currently hiking only. The trail is only occasionally ridden by unauthorized bikes. This has contributed to minimal reported safety issues. Although it has not been documented it is anticipated that user conflict could occur near the Mountain Amphitheater trailhead during weekends and use associated with amphitheater events.
4.1	With standard cyclical trail brushing (as determined by vegetation type), is there adequate sight distance to address safety concerns resulting from the CIU?		X		There are a few locations where brushing outside of cyclic brushing standards would improve sight distances and thus improve safety.
4.2	With standard cyclical slough and berm removal, is there adequate tread width for safe passage of trail users with the CIU?	X			There are only a few locations and small section (rocky outcrop) along the trail where it could be difficult for users to safely pass.
4.3	With equestrian users is there adequate space for non-equestrian users to retreat to the downhill side of trail for safe passage?			X	
4.4	If tread widths are narrow, are the fill slopes gentle, firm, and stable for users to retreat to the downhill side of trail for safe passage?		X		Trails widths are narrow and fill slopes are steep, and unstable in the rock outcrop section of the trail.
4.5	Does the trail have sinuosity that slows trail users?		X		The trail does have some sinuosity that may slow bikers in some locations. However sinuosity is not sufficient along some steeper sections of the trail to sufficiently slow users in locations where visibility between oncoming users may be limited.
4.6	Would the CIU increase the need for enforcement of park rules and regulations?		X		
Design Options to Improve Safety					
	Check those design options that could be implemented to improve trail safety with the CIU				
4.7	Increase sinuosity through re-routing or re-construction	X			Rerouting sections of trail could add increase sinuosity of the trail through curvilinear layout and switch back turns designed to reduce linear grades and slow users.
4.8	Increase sight distances through re-routing or removal of visual obstructions	X			Rerouting sections of trail could improved sight distances. Brushing of vegetation at blind curves could also improve sight distances.
4.9	Widening of the trail tread to provide adequate passing space		X		Adequate passing space currently exist on the majority of the trail.

Trail Change-in-Use Proposal Evaluation

Evaluation Considerations		Yes	No	NA	Comments
4.10	Install speed control devices such as pinch points or tread texturing	X			A limited number pinch points located prior to blind curves could slow users and reduce potential safety concerns associated with poor sight distance and speed. Tread texturing at armored drainage crossings and armored rolling dips could also slow users.
Management Options to Improve Safety					
	Check those management options that could be implemented to improve trail safety with the CIU				
4.11	Alternating days of use		X		
4.12	One-way directional usage		X		
4.13	Installation of new signage	X			Installation of multi-use yield signs and caution signs located in the narrow rocky outcrop section of the trail. Installation of "Slow and say hello" signs at trailhead and trail locations.
4.14	Other (Describe)				
Part 4	**Based on the above considerations, would implementation of the CIU with management and design options (as recommended) maintain trail safety?**	**X**			

Trail Change-in-Use Proposal Evaluation

Evaluation Considerations		Yes	No	NA	Comments
#5 Effects on Trail Sustainability		**Yes**	**No**	**NA**	
Existing Conditions					
5.1	Is the trail draining to natural topographic drainage features, such as creeks and swales or natural sheet flow, and not being captured and concentrated to the man-made drainage structures?	X			
5.2	Is the trail tread firm and stable?	X			Trail tread surface material consist of clay based soils mixed with a matrix of aggregates.
5.3	Are there abrupt changes in trail running grade?	X			There is approximately six abrupt grade changes along the trail. There are also approximately 4 sections of steps located along the trail.
5.4	Is the fill slope stable?	X			
5.5	Is the back slope/cut bank stable?	X			
5.6	Does the trail tread remain firm and stable in wet conditions?	X			
	Supporting data from trail log				
5.7	Number of water breaks (water bars, dips, etc.) required for proper drainage				There is approximately 11 dips and 10 waterbars located on the trail.
5.8	Linear footage of berms				There is approximately 1400 linear feet or berm on the outside of the trail limiting cross slope drainage. This berm could be easily removed with standard trio maintenance or minor reconstruction.
5.9	Linear footage of ditches				0 linear feet of ditches
5.10	Linear footage rills and ruts				Rills and ruts included in entrenched trail totals
5.11	Linear footage log entrenched trail				Approximately 670 feet of entrenched trail
	Describe the locations of soil types and matrixes encountered on trail				
5.12	Rocky				Approximately 4% of the trail.
5.13	Rocky/Partial Soil Profile				Approximately 21% of the trail.
5.14	Full Soil Profile				Approximately 75% of the trail.
5.15	Partial Soil Profile/Sandy				
5.16	Sandy				
5.17	Based on these considerations is the trail currently sustainable?	X			Overall the trail is performing well under existing use
5.18	Will the trail be sustainable following implementation of the CIU without management or design options (as recommended)?		X		Portions of the existing trail could perform well under existing conditions while others may not. Sustainability will depend of level of increased use if bikes are added. Therefor it is recommended that design options be implemented to ensure sustainability with anticipated added use.
Design Options to Improve Sustainability					

Trail Change-in-Use Proposal Evaluation

Evaluation Considerations		Yes	No	NA	Comments
	If not sustainable, can any of the following measures be implemented to make the trail sustainable for the CIU?				
5.20	Armoring of wet drainage crossings to reduce erosion and impacts to waterways?	X			Armoring of the all major and minor drainage crossing and rolling dips
5.21	Additional drainage structures (e.g. grade reversals, water bars, rolling grade dips, etc.) to manage increased mechanical wear?	X			Adding rolling grade dips along exiting section of steep trail may be required for proper drainage
5.22	Additional bridges and puncheons/boardwalks to facilitate dry crossings necessary to reduce erosion and impacts to waterways?		X		
5.23	Reconstruction or replacement of bridges and puncheons to comply with equestrian construction standards?		X		
5.24	Fill slope or cut bank retaining walls?		X		
5.25	Additional or upgraded turnpikes or causeways?		X		
	Minor reconstruction of trail tread would:				
5.26	Correct lack of outslope	X			The addition if bikes will required increased outslope for drainage
5.27	Stabilize abrupt grade changes	X			It is possible that armoring of steep abrupt grade changes may be required. Re-engineer of some trail sections could reduce linear grades along the trail.
5.28	Stabilize cut bank		X		
5.29	Stabilize fill slope		X		
5.30	Correct riling and rutting	X			Rolling grade dips and increased outslope would reduce or eliminate rills and ruts
5.31	Provide for firm and stable surfaces				
	Minor realignment/re-route of trail within the immediate proximity of the existing trail would:				
5.32	Stabilize cut bank		X		
5.33	Stabilize fill slope		X		
5.34	Eliminate abrupt grade changes	X			
5.35	Correct unsustainable grades	X			Reroutes would reduce overall trail grades and thus improve both sustainability and safety
5.36	Correct lack of sinuosity				Reroutes could add sinuosity through improved curvilinear trail alignment and installation of switchbacks designed to reduce linear grades.
5.37	Would a major reroute be required to establish/maintain sustainability?		X		
Management Options to Improve Sustainability					
	If not sustainable, can any of the following measures be implemented to make the trail more sustainable for the CIU?				

Trail Change-in-Use Proposal Evaluation

Evaluation Considerations		Yes	No	NA	Comments
5.38	Wet weather closures establish or maintain sustainability?		X		Design modification would address wet weather issues.
5.39	Other management options be implemented to improve trail sustainability? If so, please describe.	X			Inspection and adaptive management of design modifications
Part 5	**Based on the above considerations, will the trail be sustainable following implementation of the CIU with management and design options (as recommended)?**	**X**			

Trail Change-in-Use Proposal Evaluation

Evaluation Considerations		Yes	No	NA	Comments
#6 Effects or Impacts to the Natural or Cultural Resources		**Yes**	**No**	**NA**	
	Would the CIU and/or needed modifications significantly impact:				
6.1	Erosion of existing trail tread and sedimentation of adjacent streams?		X		
6.2	Significant geologic features?		X		
6.3	Sensitive wildlife habitat?		X		
6.4	Sensitive plant habitat?		X		Plant surveys would be required as part of project development. Avoidance and minimization of sensitive plant species would be required for locations identified in plant surveys. Invasive species control would need to be included as part of the project.
6.5	A wetland, riparian or stream zone?		X		
6.6	A sensitive cultural feature?		X		
6.7	A sensitive paleontological feature?		X		
6.8	Is the trail a historic feature?		X		
6.9	Would required trail modifications trigger outside agency permits?	X			RWQCB 401, Army Corps 404, and CADFW 1600 permit would be required for drainage crossing locations.
Part 6	**Based on the above considerations, would implementation of the CIU with management and design options (as recommended) create significant negative impacts to the natural or cultural resources?**		**X**		
#7 Effects or Impacts to Maintenance and Operations		**Yes**	**No**	**NA**	
	Would the CIU and/or needed modifications:				
7.1	Change the classification of the trail?	X			The addition of bikes to the trail will change the trail classification from a Class II trail to a class I trail.
7.2	Require additional maintenance?	X			Design modifications required for change in use would improve the overall sustainability of the trail and thus reduce maintenance. However increased maintenance of the trail tread (e.g. outsloping, etc..) may be necessary to ensure trail sustainability with the addition of bikes.
7.3	Require additional management practices to maintain user compliance?		X		Signage, education, and user self policing would be the principle management actions to maintain user compliance

Trail Change-in-Use Proposal Evaluation

Evaluation Considerations		Yes	No	NA	Comments
7.4	Require additional staff time to address compliance requirements of the management or design options?	X			
7.5	Could the proposed modifications be completed by non-department work forces?	X			Only with proper oversight by qualified DPR staff
7.6	Could the proposed modifications be maintained by non-department work forces with minimal cost to the State?	X			They could be maintained by non-departmental work forces, but supervision by qualified DPR staff would be required. This would be a cost to the state.
7.7	Can necessary management strategies be enforced?	X			Management strategies could be enforced through education signage and user enforcement.
7.8	If not, is there a volunteer group or partner agency that can assist with enforcement?				
Part 7	**Based on the above considerations, will implementation of the CIU with management and design options (as recommended) create a significant on-going maintenance or operational workload?**		**X**		