



Appendix II

Visitor Use Value Analysis

For the Comprehensive Trail Management Plan (Draft) – 2007

VALUE ANALYSIS - Mini VA

Park: Mammoth Cave National Park

Project: Comprehensive Trail Management Plan

Date: 1-31-07

Project Element Evaluated: Trail Use Alternatives

Phase I - Information:

Background Information/Special Concerns/Constraints/Previous Decisions/Description of Present Proposal/Design Assumptions

See Scoping Statement

Phase II - Function Analysis

Functional Analysis/Description of the Present Proposal:

	Active Verb	Noun
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____

Phase II - Creativity (Alternatives):

#	Alternative (Brainstormed)	Action (consider further, reject and why)
1	No Action	Rejected
2	Shared Use Year round	Consider further
3	Shared use seasonal	Consider further
4	New bicycle trail	Consider further
5	Bicycle use on First Creek Trail	Consider Further
6		

Phase IV - Evaluation

Evaluation Sub-Factors or Variables ():

#	Evaluation Variables or Sub-factors	Definition of Variable or Sub-factors
1	Protect Public and Employee Health, Safety, and Welfare	
2	Protect Natural and Cultural Resources	
3	Provide for Visitor Enjoyment through Improved Educational and Recreational Opportunities	
4	Improve Operational Efficiency, Reliability and Sustainability	
5		

Several evaluation methods can be used. Choosing by Advantages (CBA) matrix is attached. Standard Line Item CBA Factors in attached matrix.

Phase V - Development (Confirm proposal feasibility, Initial and Life Cycle Costs):

All alternatives are feasible; life cycle costs does not apply.

Phase VI - Recommendation & (Recommendations, Preferred Alternative's Advantages, Benefit-Cost Issues Why should we do it?):

Alternative 5 is recommended and had the highest score.

Phase VII - Implementation (Considerations and Options for Implementation, Next steps, Who does what?)

Pending plan approval and, then, funding

Study Team Members

Discipline	Name	Organization	Phone
Facilitator:	Larry Johnson & Ken Kern	Mammoth Cave National Park	270-758-2150/270-758-2187
Park Management	Pat Reed	Mammoth Cave National Park	270-758-2184
Park Management	Bruce Powell	Mammoth Cave National Park	270-758-2186
Public Information	Vickie Carson	Mammoth Cave National Park	270-758-2192

Summary of Improvements, Cost Savings and Study Costs (All are reported to OMB)

Project Improvements e.g. increased benefit or importance of advantage

N/A

Cost Savings e.g. of the recommended VA proposals, which are to be implemented

N/A

Study Costs e.g. What costs were charged to project accounts?, What was the value of donated time?

MAMMOTH CAVE NATIONAL PARK - CTMP

DRAFT -- Choosing by Advantages -- DRAFT

COMPONENT;		FUNCTION:							
FACTOR		ALTERNATIVES							
		Alternative 2: Shared use year round on Sal Hollow		Alternative 3: Shared use seasonally on Sal Hollow		Alternative 4: Construct New Bike/Hike Trail on Northside		Alternative 5: Change of use of First Creek Trail to Bikers/Hikers	
FACTOR 1 Protect Public and Employee Health, Safety and Welfare									
Attribute: a characteristic or consequence of one alternative		<ul style="list-style-type: none"> Shared use between hikers, horses, bikes year round. Perceived safety concerns re: mixed use <u>LEAST</u> Some single track trail Some double track trail Requires road crossing 		<ul style="list-style-type: none"> Shared trails between hikers, horses, bikes part of the year Perceived safety concerns re: mixed use are reduced Some single track trail Some double track trail Requires road crossing Provides a horse-free trail and campsite part of the year 		<ul style="list-style-type: none"> New trail for hikers and bikers only; horses use separate trails. Perceived safety concerns re: mixed use are reduced Single track trail Requires road crossing Provides a horse-free trail Multiple loops w/ varying levels of expertise Potential for future section of double track trail Shared use on access trail 		<ul style="list-style-type: none"> Changes use of First Creek Trail to hikers and bikers only. Perceived safety concerns re: mixed use are reduced Single track trail Provides a horse-free trail and campsites Bike use on Houchins Ferry road may increase Potential for future section of double track trail 	

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FACTOR	ALTERNATIVES							
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FACTOR 1 Protect public and employee health, safety, and welfare. Advantage: a difference between the attributes of two alternatives.	<ul style="list-style-type: none">Provides for maximum recreational use of trailsProvides some double track trail for family bike use	10	<ul style="list-style-type: none">Provides high level of recreational use of trailsProvides horse-free trail and campsite for part of the yearReduces interaction between user groupsShared use concerns are reduced	50	<ul style="list-style-type: none">Increased variety of trail difficultyProvides horse-free trailReduces interaction between user groupsShared use safety concerns are substantially eliminated	95	<ul style="list-style-type: none">Provides horse-free trail and campsiteReduces interaction between user groupsShared use safety concerns are eliminated; this alternative provides the clearest division of trail user groups. GREATEST ADVANTAGE; PARAMOUNT ADVANTAGE.Eliminates horses crossing secondary road	100
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FACTOR 2 - Protect Natural and● Cultural Resources								
Attribute: a characteristic or consequence of one alternative	<ul style="list-style-type: none">• Use of and impact to Sal Hollow trail increases• Trail impacts decrease on other trails• No new trail construction• Increases horse waste on Sal Hollow (exotic species, water quality concerns)• Mixed year round use promotes ruts, braiding, and mud bogs		<ul style="list-style-type: none">• Increases trail impacts on Sal Hollow part of the year• Decreases trail impacts for part of the year• No new trail construction• Reduces number of users on Sal Hollow for part of the year• Reduces horse waste on Sal Hollow for part of the year (exotic species, water quality concerns)• Mixed use during part of the year promotes ruts, braiding, and mud bogs• Seasonal closure to horses promotes sustainability		<ul style="list-style-type: none">• Requires new trail construction; impacts undeveloped park resources; increases the footprint of development in the park. <u>1 EAST PREFERED.</u>• New use in additional park area• Requires a spur connector trail to Maple Springs Trailhead• Constructed to sustainable standards• Volunteer maintenance shifts from Sal Hollow to new trail		<ul style="list-style-type: none">• Bike use will require some trail reroute (Temple Hill area)• Increases horse use on other trails• Eliminates horse use in the First Creek drainage• Change in use could potentially affect wintering eagles• Volunteer maintenance shifts from Sal Hollow to First Creek trail	

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FACTOR 2 - Protect Natural and Cultural Resources Advantage: a difference between the attributes of two alternatives	<ul style="list-style-type: none">No additional construction requiredDoes not disturb undeveloped resourcesNo change in current impacts to eaglesDecreases impacts on other trails	65	<ul style="list-style-type: none">No additional construction requiredDoes not disturb undeveloped resourcesReduces horse waste seasonallyReduces resource impacts seasonallyReduces number of visitors seasonallyNo change in current impacts to eaglesSeasonal closure to horses promotes sustainability	70	<ul style="list-style-type: none">Reduces trail use on Sal HollowEliminates bikes on Sal HollowNo change in current impacts to eaglesNo horse impacts on this trail: tread wear; exotic species concerns; water quality concernsNew trail condition is maintained by volunteers	40	<ul style="list-style-type: none">Eliminates horse impacts on First Creek drainage, trail and campsites: tread wear; exotic species concerns; water quality concerns. GREATEST ADVANTAGE.Improved trail condition due to increased volunteer maintenance	90
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FACTOR			ALTERNATIVES							
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FACTOR 3 - Provide for Visitor Enjoyment through Improved Educational and Recreational Opportunities										
Attribute: a characteristic or consequence of one alternative			<ul style="list-style-type: none">Sal Hollow is open to mixed use, even though users have expressed they don't prefer mixed use of trails. <u>LEAST PREFERRED.</u>No horse-free trailsNo horse-free campsitesMixed use year round promotes ruts, braiding, and mud bogsYear round: 60 miles for horses and hikers; 13 miles for bikes, including 6.9 miles of single-track..Many options for loop trailsEasy access to trailhead, parking, restroom, picnic tables, group camping areaCapacity for year round use is less than Alternative 4; greater than Alternatives 3 & 5		<ul style="list-style-type: none">Sal Hollow is open to mixed use seasonally, event though users have expressed they don't prefer mixed use of trailsNo horse-free trails for part of the yearNo horse-free campsites for part of the year60 miles for horses and hikers; 13 miles for bikes, including 6.9 miles of single track; 9 miles closed to horses seasonally.Fewer options for loops, seasonally.Easy access to trailhead, parking, restrooms, picnic tables, group camping areaPlaces fewer users on the trail in weather conditions that promote ruts, braiding, and mud bogsUse is limited part of the year.		<ul style="list-style-type: none">Provides new opportunities for hikers and bikersProvides horse-free trailsMultiple loops provide variety in trail length and difficultyProvides potential for future horse-free campsiteYear round: 60 miles for horses; 66 miles for hikers; 6 miles for bikes (all single track).Provides a short loop on the northsideImplementation time requiredPotential for future section of double track trailShared use on access trailEasy access to trailhead, parking, restrooms, picnic tables, group camping area		<ul style="list-style-type: none">Eliminates horse use on First Creek Trail, campsitesProvides horse-free trailsNo viewing of First Creek Lake by horse ridingSingle track trailFewer miles for bikesYear round: 53 miles for horses; 60 miles for hikers; 7 miles for bikes, including 5.5 miles of single track.Isolated/remote area of parkAccess via two trailheadsNo loopImplementation time requiredPotential for future section of double track trailSignificantly further from visitor center areaThis alternative has the lowest capacity for year round use	

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FACTOR 3 - Provide for Visitor Enjoyment through Improved Educational and Recreational Opportunities Advantage: a difference between the attributes of two alternatives	<ul style="list-style-type: none">Increases miles of horse trails and loopsProvides longer loop rides for horsesEasy access to trailhead, parking, restroom, picnic tables, group camping area for all user groups	20	<ul style="list-style-type: none">Increases miles of horse trails and loops for part of the yearProvides bike/hike only trail for part of the yearProvides longer loop rides from Maple Springs for part of the yearMaintains better trail conditions on Sal HollowProvides single track trail part of the yearDecreases mixed use for part of the yearEasy access to trailhead, parking, restroom, picnic tables, group camping area	40	<ul style="list-style-type: none">Horse-free trail (hikers/bikers do not encounter horses or horse waste), excepting the access trail.Reduces mixed useIncreases horse trail mileageIncreases loops for all user groupsIncreases miles of trail in parkMultiple loops provide variety in trail length and difficulty for bikersProvides short loop on northsideEasy access to trailhead, parking, restroom, picnic tables, group camping areaProvide potential for future horse-free campsiteMaintains better tread conditions on new trailLargest recreational capacity for year round use. GREATEST ADVANTAGE.	85	<ul style="list-style-type: none">Horse-free trails and campsites (hikers/bikers do not encounter horses or horse waste)Increases miles and loops for horsesIsolated/remote area of parkSingle track trailAccess via two trailheadsMaintains better tread condition on First Creek trail	70

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FACTOR 4 - Improve Operational Efficiency, Reliability and Sustainability								
Attribute: a characteristic or consequence of one alternative	<ul style="list-style-type: none">Facilitates visitor contactsMore concentrated usePatrol area remains the sameMaintenance mileage and facility management remain the sameRequires increased tread maintenanceVolunteer efforts may be compromised by mixed use		<ul style="list-style-type: none">Facilitates visitor contactsMore concentrated use part of the yearPatrol area remains the sameMaintenance mileage and facility management remain the sameSeasonal closure to horse promotes sustainability of trailIncreases need for and coordination of visitor information mediaIncreases regulatory complexitySeasonal closure to horse enhances volunteer trail maintenance efforts		<ul style="list-style-type: none">Disperses useRequires greatest oversight and management: new trail construction; maintenance mileage increases; increases facility management.LEAST PREFERRED.Patrol area increasesFacilitates enforcementReduces shared use and perceived conflictsIncreases need for and coordination of visitor information mediaEasy accessImplementation time requiredIncreases regulatory complexityRequires altered volunteer agreementVolunteer trail maintenance support is provided under MOA		<ul style="list-style-type: none">Disperses useRequire construction of some reroutesPatrol area remains the sameIncreases need for and coordination of visitor information mediaIsolated/remote area of parkImplementation time requiredIncreases regulatory complexityRequires altered VIP agreementVolunteer trail maintenance support shifts from Sal Hollow to First Creek	

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FACTOR 4 - Improve Operational Efficiency, Reliability and Sustainability Advantage: a difference between the attributes of two alternatives	<ul style="list-style-type: none">Facilitates visitor contactsPatrol area remains the samePermits efficient patrolsMaintenance mileage and facility management remains the sameNo new construction or associated costsRequires least number of regulatory signsMinimizes regulatory complexity	30	<ul style="list-style-type: none">Facilitates visitor contactsPatrol area remains the samePermits efficient patrolsMaintenance mileage and facility management remains the samePromotes sustainability of trailReduces tread maintenanceNo new construction or associated costsIncreases volunteer maintenance efficiency, sustainability	15	<ul style="list-style-type: none">Can be constructed to provide sustainabilityProvides clear division of horse/bike use areas, except for access trail.Disperses useFacilitates enforcementReduces shared use and perceive conflictsEasy accessIncreased volunteer maintenance support	80	<ul style="list-style-type: none">Disperses usePatrol area remains the sameFacilitates enforcementIsolated/remote area of parkProvides clear division of horse/bike use areas.GREATEST ADVANTAGE.Increased volunteer maintenance support	85

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Factor 4b – Costs								
Attributes	• Minimal expense		• More expense		• Most expensive		• Moderate expense	
Advantages								

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TOTAL IMPORTANCES OF ADVANTAGES		125		185		3 0 0		345
Initial Cost (Net)								
Re-design Cost								
Compliance								
Life Cycle Cost (Net)								

Green Circle represents Most Important Advantage in a Factor

Red Underline represents Least Preferred Set of Attributes