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Region

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# Final Environmental Impact Statement

## Sequoia National Forest Motorized Travel Management

Forest Supervisor's Office  
Sequoia National Forest  
Tulare County, California

## Appendices

### Volume 2 of 2



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***Appendix A***  
***Route-Specific Data***

## Introduction

Appendix A displays the site specific resource information and required mitigation measures for all unauthorized routes proposed as additions to the National Forest Transportation System (NFTS) and all NFTS roads and trails that are proposed to be opened to public motorized use, and have a change in the class of vehicle allowed or season of use in the alternatives. Table A-2 below displays the following information for each proposed route as follows:

- The unique **Route ID** number for each proposed route which is used throughout the document and on maps.
- The **Current Status** of each proposed route. The current status is one of the following: 1) an unauthorized route which may have been user created due to repeated motorized use by the public, or a former temporary road constructed as part of a vegetation management project or other authorized activity, but never intended for long term motorized use; and 2) NFTS road or trail with changes.
- The **Class of Vehicle and Season of Use** that would be authorized should the route be added to the NFTS in each respective alternative. The possible combinations of Class of Vehicle and Season of Use are listed in Table A-1.
- The **Class of Vehicle and Season of Use** that would be authorized should the proposed changes to NFTS road and trails be changed in each alternative.

**Table A-1. Class of Vehicle and Season of Use**

<b>Class of Vehicle</b>	<b>Season of Use</b>
<b>C</b> – Trails open to all vehicles	<b>U</b> – May 31 to November 1
<b>D</b> – Trails open to vehicles 50" or less in width	<b>V</b> – April 15 through December 31
<b>E</b> – Trails open to vehicles 50" or less in width and Recreation Utility Vehicles (RUVs)	<b>W</b> – May 1 through November 15
<b>F</b> – Trails open to motorcycles only	<b>X</b> – May 15 through November 15
<b>P</b> –Administrative use only	<b>Y</b> – May 25 through November 15
<b>R</b> – Roads open to highway legal vehicles only	<b>Z</b> – Open Year Long
<b>A</b> – Roads open to all vehicles	

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Route ID	ALTERNATIVE					Mileage	Difficulty Rating	Safety	Lands & Minerals	Botany	Watershed	Wildlife	Recreation	Heritage	Location
	1	2	3	4	5										
U0016		FZ			FZ	1.39	INT	None		N1 - Negligible Effect	Needs to be brought up to standard; Gully/ruts near and at stream crossing. Needs rolling dips and creek crossing hardened; approx 50' of trail needs to be relocated away from creek/stream bank (Gully is 9'x9'4"); Stream Crossing needs bridge, culvert or rock hardening	In Fisher Conservation Area, part of route in RCA, previous SPOW survey in area. Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Needs signing; needs drainage structures (rolling dips); harden 3 creek crossings	See Appendix C	GREENHORN B6
U0017	CY					1.76	INT	None		N1 - Negligible Effect	Needs to be brought up to standard; drainage structures stream crossing needs hardening. Water channeling down trail with ruts (85'x1'-5'x6'-8'); needs rolling dips	In Fisher Conservation Area, previous SPOW survey in area. Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Needs signing; needs drainage structures (rolling dips)	Surveyed	GREENHORN B5
U0017			CY			1.20								Surveyed	
U0017				FY		0.56									
U0017	CY					0.37	INT	None		N1 - Negligible Effect	N1 - Negligible Effect	KE003 PAC (LOP); KE011 HRCA, inside fisher conservation area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6); LOP for maintenance see SNFPA	Needs signing; needs drainage structures (rolling dips); poor drainage, steep 20% + in short sections	Surveyed	GREENHORN B5
U00124						0.28	INT	None	220 OF ROUTE 155 IN CALIFORNIA COUNTY LAND (PENDING LAND EXCHANGE)		Needs to be brought up to standard; drainage structures; needs rolling dips & drains cleaned - Surv Prev	KE008 HRCA, in fisher conservation area, Greenhorn Frillery; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	goes into kern county property behind sand shed, harden spring crossing, goes around sm. spring	DEFERRED SURVEY	GREENHORN B5
U00128						0.56	INT	None		N1 - Negligible Effect	Needs to be brought up to standard; drainage structures; needs rolling dips & drains cleaned - Surv Prev	KE008 HRCA, in fisher conservation area, Greenhorn Frillery; Routes in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	goes into private property, SCE service rd., steep, poor drainage; Needs signing; needs drainage structures (rolling dips)	DEFERRED SURVEY	GREENHORN B5
U00130						0.30	BEG	Intersection with SH 155		N1 - Negligible Effect	Needs Drainage; Rolling dips		needs signs & rolling dips	DEFERRED SURVEY	GREENHORN B5
U00136								None, ENDS ON CALIF. STATE LEGAL VEHICLE ROAD		N1 - Negligible Effect		KE035 PAC, KE003 PAC (LOP FOR MAINTENANCE ACTIVITIES SNFPA), in fisher conservation area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Needs signing; needs drainage structures (rolling dips); poor drainage	See Appendix C	GREENHORN B5
U00223	FY					1.63	INT			N1 - Negligible Effect	N1 - Negligible Effect				

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Location	GREENHORN B5		GREENHORN B5		GREENHORN B5	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D5	BRECKENRIDGE D4
Heritage		DEFERRED SURVEY		DEFERRED SURVEY	Surveyed	Surveyed	See Appendix C	Surveyed	DEFERRED SURVEY
Recreation			Possible seep in Spring		needs signs, rolling dips;	Signs, rolling dips	constructed is or, concern fire safe area completely vegetated.	Geoc T/A, needs signing & rolling dips	satisfactory w/ routine maint. Could provide a loop opportunity w/ 238534
Wildlife		KE003 PAC, in fisher conservation area. Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)			KE003 PAC (LOP), fisher conservation area, part of route in RCA; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Previous SPOW survey in area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Previous SPOW survey in area	Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)
Watershed			N1 - Negligible Effect		needs rolling dip and haneening at spring	N1 - Negligible Effect	Needs to be brought up to standard; drainage structures; add rolling dips and clean drains; minimal erosion	Needs to be brought up to standard; drainage structures; add rolling dips and clean drains; minimal erosion	Needs to be brought up to standard; drainage structures; Trail crosses near spring, reroute or harden.
Botany		N1 - Negligible Effect			N1 - Negligible Effect	N1 - Negligible Effect	N1 - Negligible Effect	N1 - Negligible Effect	N1 - Negligible Effect
Lands & Minerals									
Safety			None		None	None	Slack, eroding, needs rolling dips	None	MAP ERROR ALT 1; NOT RECORDED 238534 LEADS TO SAME PLACE TRAIL HEAD
Difficulty Rating		0.02 BEG				0.32 BEG	1.15 BEG	0.10 BEG	0.18 INTBEG
Mileage		0.02 BEG	0.17 BEG		0.34 BEG	0.32 BEG	1.15 BEG	0.10 BEG	0.18 INTBEG
Description		ADD Unauthorized to Trail Open to All	ADD Unauthorized to Trail Open to All; Begins on Owl Fire Rd to Lanning, Used by motorcycles, ATV, 4x4		ADD Unauthorized to Trail Open to All	ADD Unauthorized to Trail Open to All; ATV, 4x4, Motorcycle, from staging area 25528	ADD Unauthorized to Trail Open to All; Deadends at U01001 near Pipe Springs;	ADD Unauthorized to Trail Open to All; Connects to U01002, deadends	ADD Unauthorized to Trail Open to All
ALTERNATIVE	1	2	3	4	5	MOD 3			
Route ID	U00224	U00224	U00324	U00324	U00324	U00424	U01000	U01001	U01002
	CY	CY	CY	CY	CY	CY	CY	CY	FY

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Location	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D4
Heritage		DEFERRED SURVEY		DEFERRED SURVEY		Surveyed		DEFERRED SURVEY	
Recreation				access plan: sign, signing & rolling dips		access plan: sign, signing & rolling dips		access plan: sign, signing & rolling dips	
Wildlife	Part of route in RCA, previous SPOW surveys in area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6); CONDOR ROOST AREA ALT 3	Part of route in RCA, previous SPOW surveys in area; Condor Roost Area	Previous SPOW surveys in area; condor roost area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6); Condor Roost Area	Part of route in RCA, previous SPOW surveys in area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6); CONDOR ROOST AREA	Previous SPOW surveys in area; condor roost area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6); Condor Roost Area	Condor Roost Area; Previous SPOW surveys in area; condor roost area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Condor Roost Area; Previous SPOW surveys in area; condor roost area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Condor Roost Area; Previous SPOW surveys in area; condor roost area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Part of route in RCA, previous SPOW surveys in area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)
Watershed	Needs to be brought up to standard; drainage structures need maintenance	Needs to be brought up to standard; drainage structures need maintenance	Needs to be brought up to standard; drainage structures need maintenance	Needs to be brought up to standard; drainage structures need maintenance	Needs to be brought up to standard; ADD drainage structures; need maintenance				REC: NEEDS REPAIR BEFORE OPENING
Botany		NT - Negligible Effect	NT - Negligible Effect	NT - Negligible Effect	NT - Negligible Effect	NT - Negligible Effect	NT - Negligible Effect	NT - Negligible Effect	NT - Negligible Effect
Lands & Minerals					885 INTO ROADLESS				
Safety	PART OF 28508A				None	None	None	None, low use	Fire is good, but 99% vegetated
Difficulty Rating		BEG	BEG	BEG	BEG	BEG	BEG	BEG	BEG
Mileage	0.35		0.13	0.48	0.97	0.17	0.89	0.24	0.11
Description	ADD Requested by Public; starts on 28508 and connects to U01033	ADD Unauthorized to Trail Open to All; connects 28508 and U01006 AND U01033	ADD Unauthorized to Trail Open to All	ADD Unauthorized to Trail Open to All; Golf Meadow Fire Exempt Area	ADD Unauthorized to Trail Open to All; GOLF MDAW AREA	ADD Unauthorized to Trail Open to All; PS constructed road not in Atlas	ADD Unauthorized to Trail Open to All	Unauthorized to Trail Open to All; Dead ends, no destination, off U01041	ADD Requested by Public; UNAUTHORIZED TO TRAIL, OPEN TO ALL
ALTERNATIVE	MOD 3	CZ	CZ	CZ	CZ	CZ	CZ		CZ
	5								
	4								
	3	CZ	CZ	CZ	CZ	CZ	CZ		CZ
	2								
	1		CY	CY	CY	CY	CY	CY	
Route ID	U01028	U01032	U01033	U01035	U01035	U01035	U01041	U01042	U01043
									U01045

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Location	BRECKENRIDGE D4	BRECKENRIDGE C3	BRECKENRIDGE C3	BRECKENRIDGE D4	BRECKENRIDGE E2	BRECKENRIDGE D2	GREENHORN A6	GREENHORN A6
Heritage								
Recreation	Creates top opportunity, wood cutters and hunters use			Signage, needs rolling dips		needs maint. Add to rd. system M12.		Need to reconstruct exiting rolling dips and drains, add signs REMOVE WIRE GATE
Wildlife	Previous SPOW surveys in area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)		SURVEY PRIOR TO INSTALLATION OF CULVERT	Condon Roost Area; Part of route in RCA, previous SPOW surveys in area; Route in Late Successional Habitat (4V, 4D, 5M, 5D or 6)	San Joaquin pocket mouse Townsend's big-eared bat; Route in Late Successional Habitat (4V, 4D, 5M, 5D or 6)	Route in Late Successional Habitat (4V, 4D, 5M, 5D or 6); Condon Roost Area	In fisher conservation area, previous SPOW surveys in area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Condon Roost Area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)
Watershed	Needs to be brought up to standard; drainage structures, rolling dips and drains need cleaning; previously surveyed	Stream crossing below springs needs culvert & fill	Needs general maintenance and culvert at stream crossing	Road needs general maintenance, add rolling dips and drains;		Needs to be brought up to standard; Needs general maintenance; drainage structures - rolling dips and drains cleaned; previously surveyed	Road needs general maintenance; rolling dips and drains cleaned; previously surveyed	Needs to be brought up to standard; Needs general maintenance; drainage structures - rolling dips and drains cleaned; previously surveyed
Botany			N1 - Negligible Effect	N1 - Negligible Effect	N1 - Negligible Effect		N1 - Negligible Effect	N1 - Negligible Effect
Lands & Minerals		N ROADLESS				ROADLESS; OLD MINING ROAD		
Safety	None		Low use	medium use	Accesses Beryl Canal - SCE - Mining - Private; Road on old canal made, at some point was removed from public use; gate lock when vent	None	None	Wire gate, dirt fence
Difficulty Rating		BEG		INT		M 2	BEG	BEG
Mileage	0.72	0.65	0.00	2.27	1.05	0.85	0.95	0.38
Description	ADD Requested by Public - Unauthorized to Trail open to all; Loop off of 28580; 4X4 ATV/Motorcycle; accesses planation	ADD Unauthorized to Trail Open to All	ADD Unauthorized to Trail Open to All; only loop off Cow Flat 4X4, ATV, Motorcycle, connects to 31E80; Mileage?	ADD Unauthorized to Trail Open to All; 4X4 begins at Golf Meadow Fire Exempt; dead ends;	ADD Unauthorized to Road Open to All; Quonset Beach, SCE PERC; used by private property owners	ADD Requested by Public - Unauthorized to Trail Open to all; old mining road	ADD Unauthorized to Trail Open to All; Upper Basket Pass area; old sold rcd that dead ends at landing	ADD Requested by Public - Unauthorized to Trail Open to All; Basket Pass Area connects 28520 and 001057; turns to east ends at landing;
ALTERNATIVE	MOD 3	CZ	CV		AZ	CV		
1								
2	CZ	CV	CV	CZ	AZ	CV	CZ	CZ
3								
4								
5								
Route ID	U01048	U01051	U01051	U01055	U01059	U01053	U01095	U01098

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Route ID	ALTERNATIVE					Description	Mileage	Difficulty Rating	Safety	Lands & Minerals	Botany	Watershed	Wildlife	Recreation	Heritage	Location
	1	2	3	4	5											
U01097	CY		CZ			Requested by Public - Unauthorized to Trail Open to All; Baseline Pass Area; connects 26S05 and U01096; creates loop	0.49	BEG			N - Negligible Effect	Needs to be brought up to standard; Needs general maintenance; drainage structures - rolling dips and drains cleaned; previously surveyed	In fisher conservation area, previous SPOW surveys in previous SPOW surveys in Successional Habitat (4M, 4D, 5V, 5D or 6)	Access plantation. Need to reconstruct existing rolling dips and drains, add signs, loop opportunity	Surveyed	GREENHORN A5
U01110	CY		CY		CV	ADD Unauthorized to Trail Open to All; 300' North of Evans Flat CG; connects to 26S18	0.23	BEG	None				GOSHAWK PAC, previous SPOW surveys, AREA OF HIGH RODENSITY, fisher conservation area, Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Needs signing & reconstruct rolling dips	DEFERRED SURVEY	GREENHORN B6
U01111	CY					ADD UNAUTHORIZED TO TRAIL OPEN TO ALL; connects U01110 & 26S29	0.41	BEG	Baseline 26S15 - Bradshaw			Needs to be brought up to standard; Needs general maintenance; drainage structures - rolling dips and drains cleaned; Ruts (45x1x1", 35x2-3x2")	GOSHAWK PAC (LOP), previous SPOW surveys, AREA OF HIGH RODENSITY, fisher conservation area, Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	This trail creates a loop opp. Out of Evans Flat camp	DEFERRED SURVEY	GREENHORN B6
U01113	CY		CV		CV	ADD Unauthorized to Trail Open to All; connects Evans Flat CG; N to 26S29	0.82	BEG	None		N - Negligible Effect	Needs to be brought up to standard; drainage structures; rolling dips and drains cleaned	Route in Late Successional Habitat (4V, 4D, 5M, 5D or 6)	This trail creates a loop opp. Out of Evans Flat CG; needs rolling dips and signs	DEFERRED SURVEY	GREENHORN B6
U01118			DV		DV	ADD Requested by Public - Unauthorized to Trail Open to All; parallels Rancheria; ATV, Motorcycle Only; Route to get to Evans Flat CG; connects to 26S16A	0.97	INT	None			Needs to be brought up to standard; drainage structures; rolling dips and drains cleaned	Route in Late Successional Habitat (4V, 4D, 5M, 5D or 6); FISHER CONSERVATION AREA; HRCA KEO3 (LOP); SPRING SURVEY FOR AMP-HB BEFORE BROUGHT UP TO	Access to Evans Flat CG from Bradshaw; needs Rolling Dips, Signs, brushing	DEFERRED SURVEY & See Appendix	GREENHORN B6
U01120			CV		CV	ADD Requested by Public - Unauthorized to Trail Open to All; constructed route from Evans Flat CG to U01135 (has Trail # 32E53);	2.48	BEG	None			Needs to be brought up to standard; drainage structures; rolling dips and drains cleaned; previously surveyed	Route in Late Successional Habitat (4V, 4D, 5M, 5D or 6); FISHER CONSERVATION AREA; HRCA KEO3 (LOP); SPRING SURVEY FOR AMP-HB BEFORE BROUGHT UP TO	Need to reconstruct existing rolling dips and construct new where needed. Signs, Block U01122 that goes across creek to Rancheria; accesses Evans Flat CG	Standard Protocol Measures. See Appendix C, §10.000, erosion, down cutting	BRECKENRIDGE B6
U01127			CV		CV	ADD Unauthorized to Trail open to all; connects U01118 & U01140 off Rancheria	0.71	INT	None		N - Negligible Effect	No damage. Needs to be brought up to standard; reconstruct rolling dips and drains (drainage structures)	In fisher conservation area, previous SPOW surveys with detection in area; Route in Late Successional Habitat (4V, 4D, 5M, 5D or 6)	keeps CHV off Rancheria	DEFERRED SURVEY	BRECKENRIDGE B6
U01130	CY		DV		DV	ADD Unauthorized to Trail Open to All; ATV & Motorcycle; Crosses Bradshaw Creek; connects to 32E47	0.25	INT	None	ROADLESS AREA	N - Negligible Effect	Needs to be brought up to standard; drainage structures needs culverts; culverts, add fill to road surface (30' standard, 10' road prism) (80' or road needs 4 fill)	KEO3 PAC (LOP), HIGH RODENSITY, fisher conservation area, part of route in RCA; Route in Late Successional Habitat (4V, 4D, 5M, 5D or 6); SPOW SURVEY FOR SPOW UNDER PRIOR TO CULVERT INSTALLATION	Need to harden Creek crossing; construct rolling dips and sign. 30' culvert & pave springs crossing	DEFERRED SURVEY	BRECKENRIDGE E1

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	1	2	3	4	5	MOD 3										
U01131			FV			FV	0.78	MOST DIFF		ROADLESS AREA	N1 - Negligible Effect		In fisher conservation area, part of route in RCA	SIGNING; DRAINAGE ROLLING DIPS	DEFERRED SURVEY	BRECKENRIDGE B6
U01132	CY		CV			CV	0.91	INT	None	ROADLESS AREA	N1 - Negligible Effect	Needs to be brought up to standard; drainage structures needs culvert, culvert, add fill to road surface (30' x 4' fill); harden crossing at spring	KE006 PAC (LOP), HIGH RD DENSITY, fisher conservation area, part of route in RCA; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6); SURVEY FOR SALAMANDER PRIOR TO CULVERT INSTALLATION	Need to harden Creek crossing; construct rolling dips and sign	DEFERRED SURVEY	BRECKENRIDGE D1
U01135	CY		CV			CV	2.37	BEG	AMD trail; needs reconstruct rolling dips to prevent erosion		N1 - Negligible Effect	Needs culvert cleaned; needs rock in rd with fill (75'x3'x4'x5')	KE009 PAC, KE009 PAC (LOP), HIGH RD DENSITY, fisher conservation area, part of route in RCA, Greenhorn Frillary; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Needs signs, rolling dips	DEFERRED SURVEY	BRECKENRIDGE D6
U01136	CY		CV			CV	0.16	BEG			N1 - Negligible Effect		KE009 PAC (LOP), HIGH RD DENSITY, fisher conservation area		DEFERRED SURVEY	BRECKENRIDGE D1
U01137	CZ		CV			CV	0.38	INT	Stumps, rolling dips needed		N1 - Negligible Effect		In fisher conservation area, previous SPOV surveys in area, part of route in RCA	Should add 27S13 at this intersection to keep away from creek	DEFERRED SURVEY	BRECKENRIDGE D1
U01138			CV			CV	0.16	BEG	None				Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Used for hunting and wood cutting	DEFERRED SURVEY	BRECKENRIDGE D1
U01140						DV	0.43		Stumps, rolling dips off Rancheria				In fisher conservation area; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)		Negligible effect	
U01144	FY		FZ			FZ	0.04	NOT THERE			N1 - Negligible Effect		KE015 HRCA, fisher conservation area, Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	Unab's to locate	DEFERRED SURVEY	BRECKENRIDGE C3
U01145	FY		CZ			CZ	0.43	BEG	None	ROADLESS AREA	N1 - Negligible Effect	Road needs general maintenance; needs rolling dips and clean drains; previously surveyed	KE015 HRCA, fisher conservation area, Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	constructed rd, water barred after the china fire	Negligible effect	BRECKENRIDGE D2

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Route ID	ALTERNATIVE					Description	Mileage	Difficulty Rating	Safety	Lands & Minerals	Botany	Watershed	Wildlife	Recreation	Heritage	Location
	1	2	3	4	5											
U01148	FY		CV		CV	ADD Unauthorized to Trail Motorcycle Only; used by 4X4; begins at Rancheria connects to 31E76	3.76	BEG	Rolling dips need reconstruction and drainage structures SIGNAGE	Formerly 31E74 ROW book says "trail detour" ROADLESS AREA	NT - Negligible Effect	Needs several rolling dips and all route to the north has rut (130'x15'x2') needs rehab	KEC15 HRCA, fairer conservation area, part of route in RCA; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	short steep section towards badger gap tr. NEEDS SIGNS	DEFERRED SURVEY	BRECKENRIDGE D2
U01148	FY					ADD Unauthorized to Trail Motorcycle Only; used by 4X4; begins at Rancheria connects to 31E76	0.43	INT	Rolling dips need reconstruction and drainage structures cleaned	Formerly 31E74 ROW book says "trail detour" ROADLESS AREA	NT - Negligible Effect	Needs several rolling dips and all route to the north has rut (130'x15'x2') needs rehab	KEC15 HRCA, fairer conservation area, part of route in RCA; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	short steep section towards badger gap tr. NEEDS SIGNS	DEFERRED SURVEY	BRECKENRIDGE D2
U01155			CV		CV	ADD Requested by Public - Unauthorized to trail open to all; dead and route off Black Gulch 4X4 Trail	1.13	INT	Large Rut	ROADLESS AREA	NT - Negligible Effect	Needs to be brought up to standard; drainage structures; needs culvert and fill; repair at culvert (23'x14'x4' and 2D 27'x4')	RCA-SALAMANDER SURVEY NEEDED BEFORE CULVERT WORK	Vegetated; crosses Bradshaw Creek and another intermittent creek; halts at end of route; used by hunters	DEFERRED SURVEY	BRECKENRIDGE E2
U01157					CZ	ADD Requested by Public - Unauthorized to trail open to all; loop connector continuation of 31E22 (Delonegna) and 31E76; not completely mapped; part missing to east; section to west blocked by trees	0.76	INT	Steep				Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6); SURVEY ROO AREAS FOR AMP-HIB	needs Signs, rolling dips; used by permittees (corral); gated by CalTrans not accessible from SH-176	Standard Protection Measures; See Appendix C, 52,002; erosion, slow cycling	BRECKENRIDGE D2
U01157			CZ				1.20	INT	Steep				Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6); SURVEY ROO AREAS FOR AMP-HIB	needs Signs, rolling dips; used by permittees (corral); gated by CalTrans not accessible from SH-176	See Above	BRECKENRIDGE D2
U01159			CZ			ADD Unauthorized to Trail Open to All; on map connects SH 176 and Kern Canyon Trail 31E75; in reality stops at fence before SH 176; GH CAVES	1.04	MOST DIF	LACK OF ACCESS	Access from SH 176 fenced off; ROADLESS AREA	NT - Negligible Effect		Part of route in RCA; GH CAVE; ACCESS NATURAL CAVE POSSIBLE BAT ISSUES	Class, 30% + too steep; rutted, slumping, eroding, not maintainable	See Appendix C	BRECKENRIDGE D2
U01164			CZ		CZ	ADD Unauthorized to Trail Open to All; shown on map where Freeway Ridge and Kern Canyon Trails come together	0.97	NOT THERE		ROADLESS AREA	NT - Negligible Effect		None	Unable to locate	DEFERRED SURVEY	BRECKENRIDGE E2
U01185			FZ		FZ	ADD Unauthorized to Trail Motorcycle Only; looks to be part of Kern Canyon Trail	0.14	NT		ROADLESS AREA	NT - Negligible Effect		Previous SPROW surveys in area, part of route in RCA; Route in Late Successional Habitat (4M, 4D, 5M, 5D or 6)	PART OF 31E76	DEFERRED SURVEY	BRECKENRIDGE D2
U01187			FZ		FZ	ADD Requested by Public - Unauthorized to Trail Motorcycle Only; Rec King Road connector; used by all classes vehicles	0.24	INT	None		NT - Negligible Effect		Part of route in RCA	20% slope, too steep rutted footing, poor drainage sensitive area; mining, provides loop with 2750CA and 27530	DEFERRED SURVEY	BRECKENRIDGE E2

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Location		BRECKENRIDGE E1	BRECKENRIDGE E2	BRECKENRIDGE E2	BRECKENRIDGE B6	BRECKENRIDGE B6	BRECKENRIDGE B6	GREENHORN B5	GREENHORN B4	
Heritage			DEFERRED SURVEY	DEFERRED SURVEY	DEFERRED SURVEY	DEFERRED SURVEY	DEFERRED SURVEY	See Appendix C		
Recreation			Blocked off; vegetated; poor drainage		close route short cut off of 31E75; this has been rerouted; steep and rutted		Campsite at edge of Meadow	Needs Rolling Dips	needs signs; parallels 34S15 & 24S25	
Wildlife			PART IN RCA		Part of route in RCA	KEC29 HRCA, Goshawk PAC, fisher conservation area, part of route in RCA, Route in Late Successional Habitat (4M, 4D, 3N, 5D or 5)	FISHER CONSERVATION AREA	KEC03 OWL PAC (LOP)	In fisher conservation area, old forest emphasis area, previous SPOW survey in area	
Watershed								Needs rolling dips		
Botany					NT - Negligible Effect					
Lands & Minerals			ROADLESS AREA				ROADLESS AREA	ON SEQUOIA BOUNDARY	ACCESSES GIANT SEQUOIA NATIONAL MONUMENT (SEE PROCLAMATION)	
Safety			THIS IS A 1/2" ROADLESS AREA	None	CUT SWITCHBACK	Needs like a road	None	None		
Difficulty Rating			NOSTEEF	NT	NT	BEG	BEG	BEG	NT	
Mileage			0.51	0.02	0.15	0.21	0.12	0.20	1.32	
Description			ADD Requested by Public - Unauthorized to Road open to all; from Black Gulch 4X4 trail cut off forest; to BLM & private	ADD Requested by Public - Unauthorized to Trail Motorcycle Only; short cut off 31E75	ADD Requested by Public - Unauthorized to Trail Motorcycle Only; short cut off 31E75	ADD Unauthorized to Trail Open to All; upper part of Evans Flat CG where horse corrals are located; behind bathrooms; loop 25S27	ADD Unauthorized to Trail Open to All; Off Sawmill Rd (County); used by hunters; skirts edge of meadow	ADD PORTION OF 31E69 NORTH OF 25S16 AT PORTUGUESE PASS	ADD Unauthorized to Trail open to all; Short route parallel to 24S15 connecting 25S16 and 25S11 and staging area on 25S26; motorcycle and ATV	Portuguese - Managed Use - Motorcycle Requested by Public -CHG SEASON OF USE
ALTERNATIVE			MOD 3	FZ		AV	FV	EV	FV	FZ
			5							
			4			AV			FV	
			3	FZ		AV		EV	FV	FZ
			2						FZ	
Route ID			LD1231		FZ	LD1232	LD1223	LD1224	LD1225	LD1226

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Location		BRECKENRIDGE D4		GREENHORN A5	GREENHORN B4	GREENHORN B5			GREENHORN D6	GREENHORN D6
Heritage										
Recreation										
Wildlife				CONDOR ROOST AREA; MCD ALT 3 PROPOSES GATE TO PROHIBIT PUBLIC ACCESS	KE027 PAC & HRCA, OBS 3. Later conservation area, old forest emphasis area, Greenhorn Fall area, spring					
Watershed										
Botany										
Lands & Minerals										
Safety										
Difficulty Rating										
Mileage			5.88 NT	0.67 NT	2.53 MD3T DIFF	0.70 NT	0.88 MD3T DIFF	3.30 MD3T DIFF	0.13 MD3T DIFF	4.69 MD3T DIFF
Description		M/JI Creek - Managed Use - Motorcycle CHG SEASON OF USE		Mill Creek - Managed Use - Motorcycle CHG SEASON OF USE; CHG TO NON MOTORIZED	Bohna Ridge - Managed Use - Motorcycle - Requested by Public - CHG TO NON MOTORIZED	PROG MDW TRAIL - NOT IN INFRA WD	Bull Run - Managed Use - Pack & Saddle - Motorcycle CHG SEASON OF USE	Bull Run - Managed Use - Pack & Saddle - Motorcycle CHG SEASON OF USE	Bull Run - Managed Use - Pack & Saddle - Motorcycle CHG SEASON OF USE	Borderline 4WD - Managed Use - ATV; CHG SEASON OF USE
ALTERNATIVE	MOD 3	FX	FX			CV	FV	FV	FV	CV
	5	FZ			FZ	CZ	FZ	FZ	FZ	CZ
	4	FX				CV	FV	FV	FV	CV
	3	FX	FX			CV	FV	FV	FV	CV
	2	FZ	FZ	FZ	FZ	CZ	FZ	FZ	FZ	CZ
	1	FZ	FZ	FZ	FZ	CZ	FZ	FZ	FZ	CZ
Route ID		31E78	31E78	31E83	32E34	32E36	32E39	32E39	32E42	32E49

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Location		BRECKENRIDGE B0	BRECKENRIDGE D2	GREENHORN B0	GREENHORN C3	GREENHORN B4	GREENHORN B3	GREENHORN B3	GREENHORN B3
Heritage									
Recreation		Steep down hill sec. needs to be maint. w/ dozer adopted cut					change to hiking/pedestrian route, accessed Roads End Barn that was part of the Administrative Site that burned in the Mc Nally fire; motorized access has been blocked with boulders		
Wildlife		KE226 PAC							
Watershed									
Botany									
Lands & Minerals									
Safety							Change to non-motorized road is very short. Several Co. been maintained for vehicle traffic. no turn around at end, vegetation, access has been blocked with boulders.	Access off ML 4 Road	TREE CORN, PLANTATION, VEGETATION GREATER THAN 100 FEET MAINTENANCE
Difficulty Rating									
Mileage		3.25							
Description		Breckenridge 4WD - Managed Use - ATV - Requested by Public - CHG SEASON OF USE							
ALTERNATIVE	MOD 3	CV	CV	CV	P	RV	P	RV	P
	5	CZ	CZ	CZ	RZ	RZ	AZ	RZ	AZ
	4	CV	CV	CV	P	RV	P	RV	P
	3	CV	CV	CV	P	RV	P	RV	P
	2	CZ	CZ	CZ	RZ	RZ	AZ	RZ	AZ
	1	CZ	CZ	CZ	RZ	RZ	AZ	RZ	P
Route ID		23247	23248	23249	23310A	23319	23320	23322	23323A

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Location		GREENHORN B3	GREENHORN B3	GREENHORN B3	GREENHORN B3	GREENHORN B3	GREENHORN B3	GREENHORN C3		
Heritage		Surveyed	Surveyed	See Appendix C	See Appendix C	Surveyed	Standard/Specialized Protection Measures See Appendix C, \$10,000	See Appendix C	Standard/Specialized Protection Measures See Appendix C, \$10,000	Standard/Specialized Protection Measures See Appendix C, \$2,000
Recreation										
Wildlife				RCO	RCO	RCO	RCO	RCO		
Watershed										
Botany										
Lands & Minerals										
Safety		ROAD SEGMENT HAS ALREADY BEEN CLOSED; UNSAFE EXIT TO R 39		SIGNING	SIGNING	SIGNING	SIGNING	SIGNING		
Difficulty Rating										
Mileage		0.04	0.03	0.05	0.10	0.12	0.22	0.06		
Description		Chamise Flat - ML 2 - Highway Legal - CHG SEGMENT TO ADMIN ONLY	ADD Chamise Flat - ML 2 - Highway Legal	ADD ROADS END RAFT LAUNCH	ADD ROADS END DAY USE	ADD CALKINS FLAT - A	ADD CALKINS FLAT - B	ADD SALMON CREEK		
ALTERNATIVE	MOD 3	P	RZ	RZ	RZ	RZ	RZ	RZ		
	5	RZ								
	4	P								
	3	P	RZ	RZ	RZ	RZ	RZ	RZ		
	2	RZ								
	1	RZ								
Route ID		23534	23534A	23542	23543	23544	23545	23546	23547	23548-A

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Location		GREENHORN B4	GREENHORN B4	GREENHORN B3	GREENHORN B4	GREENHORN B4	GREENHORN A5	GREENHORN A5	GREENHORN B4	GREENHORN B4
Heritage										
Recreation		NORTH AND SOUTH SEGMENTS ARE DISCONNECTED DUE TO FLOOD EVENT								
Wildlife								RCA		
Watershed										
Botany										
Lands & Minerals										
Safety								NONE		
Difficulty Rating										
Mileage		2.00	1.51	0.89	3.08	1.47	7.37	0.11	1.38	0.33
Description		Davis Canyon - ML 2 - CHG SEASON OF USE	Davis Canyon - ML 2 - CHG SEASON OF USE	Speas Meadow - ML 2 - CHG SEASON OF USE	Baker Point - ML 2 - CHG SEASON OF USE	Schultz - ML 2 - CHG SEASON OF USE	Sandy Creek - ML 2 - CHG SEASON OF USE	ADD SANDY CREEK FIRE ROAD (MUNNS Camp) TO FENCELINE - Unauthorized to Road Open to All / SEASON OF USE -	Tobias Peak LO - CHG TO OPEN TO ALL VEHICLES WITH SEASON OF USE (Not available to Public to ML 2 maintained for high clearance vehicles	Perorona CG - ML 2 - Highway Legal - CHG SEASON OF USE
ALTERNATIVE	MOD 3	AV	AV	AV	AV	AV	AV		AV	RV
	5	AZ	AZ	AZ	AZ	AZ	AZ			RZ
	4	AV	AV	AV	AV	AV	AV	AV	AV	RV
	3	AV	AV	AV	AV	AV	AV	AV	AV	RV
	2	AZ	AZ	AZ	AZ	AZ	AZ			RZ
	1	AZ	AZ	AZ	AZ	AZ	AZ	AX	AY	RZ
Route ID		24563	24563	24573A	24582	24583	24587	24587A	24588	24589

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Location		GREENHORN B4	GREENHORN B5	GREENHORN B4	GREENHORN B4	GREENHORN B4	GREENHORN B3	GREENHORN B3	GREENHORN B4	GREENHORN B4
Heritage										
Recreation										
Wildlife										
Watershed										
Botany										
Lands & Minerals										
Safety										
Difficulty Rating										
Mileage										
Description										
ALTERNATIVE	MOD 3	P	RV	AV	AV	AV	AV	AV	AV	AV
	6	AZ	RZ	RZ	AZ	AZ			AZ	AZ
	4	P	RV	AV	AV	AV	AV	AV	AV	AV
	3	P	RV	AV	AV	AV	AV	AV	AV	AV
	2	AZ	RZ	RZ	AZ	AZ			AZ	AZ
	1	P	RZ	AX	AZ	AZ	AX		AZ	AZ
Route ID										
		24810	24811	24812	24813	24814	24815	24816	24817	24818

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Location		GREENHORN B4	GREENHORN B4	GREENHORN B4	GREENHORN B4	GREENHORN B4	GREENHORN C3	GREENHORN C3	GREENHORN C3	GREENHORN C3
Heritage							PROTECTION (VEGETATIVE SCREEN, FILTER CLOTH, PADDLING) / ARCH MONITORING	See Appendix C		See Appendix C
Recreation			QUADS USING: HUNTERS					ONE ENTRANCE		
Wildlife					WITHIN RCA;		RCA: WITHIN FISHER CONSERVATION AREA	RCA: WITHIN FISHER CONSERVATION AREA	RCA: WITHIN FISHER CONSERVATION AREA	RCA: WITHIN FISHER CONSERVATION AREA
Watershed										
Botany			SHIRLEY MEADOW: STAR TULIP AT END							
Lands & Minerals										
Safety			GATED: ACCESSORS, EROSION, BROCKED, VEGETATED, NEEDS MAINTENANCE	Vegetated, 200' to 200'	LACK OF USE	INCONSISTENT WITH MAIN ROAD	SIGNING	SIGNING	SIGNING	SIGNING
Difficulty Rating										
Mileage		8.12	0.64	1.61	0.47	0.35	0.20	0.39	0.34	0.97
Description		Schultz Creek - ML 2 - CHG SEASON OF USE	Schultz Creek - ML 2 - ADMIN USE ONLY	Schultz Creek - Requested by Public - ML 2 - to ADMIN USE ONLY	CHG Stormy Canyon - ML 2 - to ADMIN USE ONLY	Deep Creek - ML 2 - Requested by Public - CHG TO ADMIN USE ONLY	ADD ANT CANYON	ADD ANT CANYON	ADD OLD GOLDFEDGE UPPER	ADD OLD GOLDFEDGE LOWER
ALTERNATIVE	MOD 3	AV	P	P	P	P	RZ	RZ	RZ	RZ
	5	AZ	AZ	AZ	AZ	AZ				
	4	AV	P	P	P	P				
	3	AV	P	P	P	P	RZ	RZ	RZ	RZ
	2	AZ	AZ	AZ	AZ	AZ				
	1	AZ	P	AZ	P	P				
Route ID		24535	24535A	24535C	24545	24545A	24547	24547A	24549-A	24549-B

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Location		GREENHORN C4	GREENHORN B4	GREENHORN B4	GREENHORN B4	GREENHORN C4	GREENHORN C4	GREENHORN C4	GREENHORN C4	GREENHORN C4
Heritage		See Appendix C	See Appendix C			Negligible effect	Negligible effect	Negligible effect	Negligible effect	Negligible effect
Recreation						UPPER KERN RIVER RECREATION AREA	UPPER KERN RIVER RECREATION AREA			
Wildlife		RCA: WITHIN FISHER CONSERVATION AREA				RCA: WITHIN FISHER CONSERVATION AREA	RCA: WITHIN FISHER CONSERVATION AREA	RCA: WITHIN FISHER CONSERVATION AREA	FISHER CONSERVATION AREA	FISHER CONSERVATION AREA
Watershed										
Botany										
Lands & Minerals		MINING CLAIM				MINING CLAIM				
Safety		SIGNING				SIGNING		SIGNING	SIGNING	SIGNING
Difficulty Rating										
Mileage		0.25	0.53	0.02	0.38	0.19	0.14	0.16	0.09	0.12
Description		ADD SPRINGHILL NORTH	Greenhorn Mtn - ML 2 - CHG SEASON OF USE	Greenhorn Mtn - ML 2 - CHG SEASON OF USE	Greenhorn Mtn - CHG TO ALLOW ALL VEHICLES WITH SEASON OF USE (ML 1 Closed to ML 2 - OPEN)	ADD SPRINGHILL SOUTH	ADD SPRINGHILL SOUTH	ADD HOSPITAL FLAT OVERFLOW	ADD CHICO FLAT A	ADD CHICO FLAT B
ALTERNATIVE	MOD 3	RZ	AV	AV	AV	RZ	RZ	RZ	RZ	RZ
	5		AZ	AZ						
	4		AV	AV	AV					
	3	RZ	AV	AV	AV	RZ	RZ	RZ	RZ	RZ
	2		AZ	AZ						
	1		AZ	AZ	AX					
Route ID		24548	24550	24550	24550A	24551	24551A	24552	24553	24554

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Location		GREENHORN C4	GREENHORN C4	GREENHORN C4	GREENHORN C4	GREENHORN C4	GREENHORN C4	GREENHORN B4	GREENHORN B4	GREENHORN B4
Heritage			See Appendix C		See Appendix C		See Appendix C			
Recreation				UPPER KERN RIVER RECREATION AREA		UPPER KERN RIVER RECREATION AREA		UPPER KERN RIVER RECREATION AREA		
Wildlife		FISHER CONSERVATION AREA		FISHER CONSERVATION AREA, RCC		FISHER CONSERVATION AREA, RCC	PARTLY IN RCC			
Watershed										
Botany										
Lands & Minerals										
Safety										
Difficulty Rating										
Mileage		0.03		0.07		0.04		0.04		
Description		ADD CHICO FLAT B		ADD THUNDERBIRD		ADD THUNDERBIRD		ADD HALFWAY	1.46	
ALTERNATIVE	MOD 3	RZ		RZ		RZ		RZ	AV	AV
	5									
	4								AV	
	3	RZ		RZ		RZ		RZ	AV	AV
	2									
Route ID		24654A		24655A		24656A		24657A	AX	AX

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Location		GREENHORN B4	GREENHORN B4	GREENHORN B4	GREENHORN B3		GREENHORN B5	GREENHORN A5	GREENHORN A5
Heritage									
Recreation					REC RENTAL : CAMPGROUND				
Wildlife					FISHER CONSERVATION AREA				
Watershed									
Botany					MEADOW IS EASILY ACCESSIBLE				
Lands & Minerals						Easement??			
Safety					MIXED USE: sign for safety; road of present; \$200	Trail crossing @ Mt. 2000 camping site;		None- road has recently been burned	Modern times, trailer use in CO; signs for safety; mixed use; \$200
Difficulty Rating									
Mileage			0.05	2.48	0.58	0.88	1.23	1.91	3.13
Description		LOWER DRY MDS	Dead Horse - ML 4 - HIGHWAY LEGAL ONLY - CHG SEASON OF USE	Upper Dry Mdw - CHG SEASON OF USE - ML 2	Frog Mdw - CHG CLASS OF VEHICLE TO ALL; ALLOW MIXED USE; CHG SEASON OF USE - ML 3 to ML 2 - MAINTAINED FOR HIGH CLEARANCE VEHICLES	Vincent Meadow - ML 2 - CHG SEASON OF USE	ROAD TO CONNECT CO M88 TO RINCON TRAIL	Waggy Flat - ML 2 - CHG SEASON OF USE	Alder Creek - ML 2, CHG SEASON OF USE; Mixed use from Alder Creek CG to Rhytas (26S16) - ML 2
ALTERNATIVE	MOD 3	AV	RZ	AV	AV	AV	AZ	AV	AV
	5		RZ	AZ	RZ	AZ		AZ	RZ
	4		RV	AV	AV	AV		AV	AV
	3		RV	AV	AV	AV		AV	AV
	2		RZ	AZ	RZ	AZ		AZ	RZ
	1		RZ	AZ	AX	AZ		AZ	RZ
Route ID		243800	243802	243803	243805	243805	243809	255002	255004

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Location		GREENHORN A5	GREENHORN A5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN A5	
Heritage										
Recreation			DISPERSED CAMPING				NO OHV OPPORTUNITY IN AREA	Connect two ML2 portion for through route		Campground
Wildlife						RCA: FISHER CONSERVATION AREA				
Watershed		N1 Effects of adding route would be negligible								
Botany		NAY								
Lands & Minerals										
Safety					ROAD NO LONGER EXISTS AS MAPPED	This road is only accessible from SH 150, highway legal onroad use limited for MMU				
Difficulty Rating										
Mileage			0.21		0.01		0.03	0.07	2.85	0.07
Description		ADD Alder Creek - Requested by Public - NOT IN INFRA - ADD AS Trail OPEN TO ALL VEHICLES WITH SEASON OF USE	ADD Alder Creek - Requested by Public - NOT IN INFRA - ADD AS Trail OPEN TO ALL VEHICLES WITH SEASON OF USE	Tiger Flat CG - CHG SEASON OF USE ML 2, UPPER SEGMENT ONLY	Tiger Flat CG - PROHIBIT VEHICLES ML 2, KEEP BEGINNING	Cedar Creek CG - CHG CLASS OF VEHICLE (ALT 1 ONLY) CHG SEASON OF USE	Greenhorn East - CHG TO ALLOW ALL VEHICLE USE (ML 1 - Closed to ML 2) WITH A SEASON OF USE	Greenhorn East - CHG SEASON OF USE ML 2	Alder Creek CG - CHG SEASON OF USE ML 2	Cedar Creek - ML 2 - Highway Legal CHG SEASON OF USE - ADMIN USE BEYOND CREEK
ALTERNATIVE	MOD 3			AV		RV	AV	AV	AV	AV
	5			AZ	AZ	RZ		AZ	AZ	RZ
	4			AV		RV	AV	AV	AV	RZ
	3			AV		RV	AV	AV	AV	RZ
	2			AZ	AZ	RZ		AZ	AZ	RZ
	1	CY	CY	AZ		AW	AX	AZ	AZ	RZ
Route ID		25524G	25504H	25526	25526	25527	25511	25511	25512	25514

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Location		GREENHORN B5	GREENHORN B6	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5
Heritage									
Recreation									
Wildlife									
Watershed									
Botany					GREENHORN FACILITY				
Lands & Minerals									
Safety		CROSSING CEDAR CREEK SUBJECT TO ACCESS TO PRIVATE PROPERTY ONLY			EROSION OVER: DEAD ENDS		Road needs improvement	ERODING, RUTTED, POOR DRAINAGE	
Difficulty Rating									
Mileage		0.02	13.97	1.22	0.34	0.08	3.55	3.97	2.81
Description		Cedar Creek - CHG TO ADMIN USE ONLY BEYOND CREEK, ML 2 - Highway Legal	NC Rancheria - ML 3	Rancheria - ML 3 - CHG SEASON OF USE	Rancheria - CHG TO ADMIN USE ONLY - ML 2 - MAINTAINED FOR HIGH CLEARANCE VEHICLE	Rancheria - CHG SEASON OF USE ML 4	Calif Creek - CHG SEASON OF USE - ML 2	Calif Creek - CHG SEASON OF USE CHG TO ADMIN ONLY (ALT 1)	Windy Gap - CHG SEASON OF USE - ML 3
ALTERNATIVE	MOD 3	P	RV	RV	P	RV	AV	AV	RV
	5	RZ	RZ	RZ	AZ	RZ	AZ	AZ	RZ
	4	P	RV	RV	P	RV	AV	AV	RV
	3	P	RV	RV	P	RV	AV	AV	RV
	2	RZ	RZ	RZ	AZ	RZ	AZ	AZ	RZ
	1	P	RZ	RZ	P	RZ	AZ	P	RZ
Route ID		25514	25515	25515C	25515D	25515E	25516	25516	25517

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Location	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5
Heritage									
Recreation									
Wildlife									
Watershed									
Botany									
Lands & Minerals									
Safety									
Difficulty Rating									
Mileage									
Description									
ALTERNATIVE	MOD 3								
	5								
	4								
	3								
	2								
	1								
Route ID									
25319									
25319									
25319									
25321									
25323									
25326									
25327									
25328									
25329A									

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Location		GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN D5	GREENHORN B5	GREENHORN B5	GREENHORN B5	GREENHORN B5
Heritage										
Recreation			CAMPING AREA							
Wildlife		FISHER CONSERVATION AREA								
Watershed										
Botany										
Lands & Minerals						ACCESS IS THROUGH PRIVATE PROPERTY				
Safety		NONE								
Difficulty Rating										
Mileage		0.40	0.84	0.19	0.03	1.37	0.39	0.38	0.38	0.18
Description		ADD Silver Strand - ROAD OPEN TO ALL WITH SEASON OF USE ML 2 (UG0126)	Silver Strand - CHG SEASON OF USE ML 2	Silver Strand - CHG SEASON OF USE ML 2	Sunday - Requested by Public - CHG PORTION ML 1 to Trail - Motorcycle, ADD SEASON OF USE	Fry Ranch - CHG TO ADMIN USE ONLY (ML 2)	Camp Kaweah - CHG SEASON OF USE - ML 4 (Primary Maintainer=Private)	Alder Creek Springs - CHG SEASON OF USE - ML 4 (Primary Maintainer=Private)	Shirley Peak - CHG SEASON OF USE - ML 4	Shirley Peak - CHG SEASON OF USE - ML 3
ALTERNATIVE	MOD 3	AV	AV	AV	FV	P	RV	P	RV	RV
	6		AZ	AZ		AZ	RZ	RZ	RZ	RZ
	4	AV	AV	AV		P	RV	RV	RV	RV
	3	AV	AV	AV	FV	P	RV	RV	RV	RV
	2		AZ	AZ		AZ	RZ	RZ	RZ	RZ
	1	AX	AZ	AZ	FY	P	RZ	RZ	RZ	RZ
Route ID		25539	25539	25539	25540	25545	25546	25547	25546	25546A

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Location		GREENHORN A6	GREENHORN D1	BRECKENRIDGE D1	GREENHORN A6		BRECKENRIDGE D1			
Heritage										
Recreation										
Wildlife									PART IN FISHER CONSERVATION AREA, PCA	
Watershed										
Botany										
Lands & Minerals									ACCESS TO MINING CLAUSES	
Safety			VEGETATED	Road needs maintenance; drainage; erosion control; brush clearing		ERODED, RUTTED, SEVERAL FEET OF EROSION OF PRISM FALLING				EA 1992/2002 to decommission 4.5 mile between 23S30A and 23S30B road. No safety issues identified in Atlas through Private
Difficulty Rating										
Mileage		1.28	0.38	3.41	4.61	3.15	0.52	0.75	1.58	0.33
Description		Greenhorn Min W - Requested by Public - CHG ML 1 - Closed Road to ROAD OPEN TO ALL VEHICLES ML 2	Greenhorn Min W - Requested by Public - CHG ML 2 to ADMIN USE ONLY	Browns Mill - CHG SEASON OF USE - ML 2	Bassett Pass - CHG SEASON OF USE - ML 2	Bassett Pass - CHG TO ADMIN USE ONLY	Black Gulch - CHG SEASON OF USE ML 2	Black Gulch - CHG SEASON OF USE ML 2	Black Gulch - CHG SEASON OF USE ML 2	Black Gulch - ML 2 TO CLOSED DECOMMISSIONED
ALTERNATIVE	MOD 3	AV	P	AV	AV	P	AV	AV	AZ	
	5		AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ
	4		P	AV	AV	P	AV	AV	AZ	
	3	AV	P	AV	AV	P	AV	AV	AZ	
	2		AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ
	1		P	AZ	AZ	AZ	AZ	AZ	AZ	
Route ID		26301	26301A	26304	26305	26306	26307	26308	26309	26310

## 680

Location					BRECKENRIDGE D2	GREENHORN B5		GREENHORN B5	GREENHORN B5	BRECKENRIDGE D1	
Heritage											
Recreation			Ranchera to Keyesville				DISPERSED CAMPING		DISPERSED CAMPING	SIGNS ROLLING DIPS	
Wildlife						CONDOR ROOST AREA; ROUTE UPSLOPE ROOST TREE				SPOTTED OWL PAC KE009	
Watershed											
Botany											
Lands & Minerals			Need some PCW.							MINE SHAFT	
Safety					Access to mining claim  Bogger accessible for mining claims section of 28306 is decommissioned and mined out at this site. No southern access				FRONT RANCHERA	NEE'S MAINTENANCE	
Difficulty Rating											
Mileage			2.60	4.20	0.05	0.02	1.00	0.89	0.59	0.10	0.33
Description			Black Gulch - CHG ML 2 to Trail, CHG SEASON OF USE	Black Gulch - CHG ML 2 to Trail, CHG SEASON OF USE	CHG Black Gulch - ML 2 to ML 2 ADMIN USE	Black Gulch - CHG ML 2 to ADMIN USE ONLY	Frank - CHG ML 2 TO ADMIN USE ONLY	Frank - CHG ML 2 TO ADMIN USE ONLY (ALT 4 & 5); CHANGE SEASON OF USE (ALT 3)	Frank - CHG ML 2 TO ADMIN USE ONLY (ALT 4 & 5); CHANGE SEASON OF USE (ALT 3)	Woodward - CHG ML 1 - Closed to Trail - Motorcycle; ADD SEASON OF USE	Mayflower Mine - Requested by Public - CHG ML 1 - Closed to Trail - All WITH SEASON OF USE
ALTERNATIVE	MOD 3	CZ	CZ	P	P	P	P	P	P	FV	CV
	5	AZ	AZ	AZ	AZ	P	P	P	P		
	4	CZ	CZ	P	P	P	P	P	P	FV	
	3	CZ	CZ	P	P	P	P	AV	AV	FV	CV
	2	AZ	AZ	AZ	AZ	AZ	AZ	AZ	AZ		
1	CW	CW	P	P	P	AZ	AZ	AZ	AZ	FY	
Route ID		28303B	28306	28306A	28307	28307B	28307	28307	28307A	28307	28307A

## 681

Location		BRECKENRIDGE B6	BRECKENRIDGE D1	BRECKENRIDGE D1	GREENHORN A6	GREENHORN B6	GREENHORN B6	GREENHORN B6		
Heritage										
Recreation										
Wildlife										
Watershed										
Botany										
Lands & Minerals										
Safety										
Difficulty Rating										
Mileage		1.77	0.84	0.02	2.55	0.51	0.74	0.27	0.32	0.52
Description		Little Posa Creek - CHG SEASON OF USE ML 2	NC Davis Road - ML 2	CHG Davis Road - ML 2 - Closed to ML 1 - Closed	CHG Old Likely Mill - ML 2 to ML 1 - Closed	CHG Evans Flat West - V/L 1 - Closed	CHG Evans Flat West - ML 1 - Closed to Trail - All	CHG Evans Flat West - ML 2 to ML 1 - Closed	CHG Rhymes ML 1 - Closed to ML 2	CHG Rhymes ML 2
ALTERNATIVE	MOD 3	AV	AV	P	P	CV	CV	P		AV
	5	AZ	AZ	AZ	P			AZ		AZ
	4	AV	AV	P	P			P		AV
	3	AV	AV	P	P	CV	CV	P		AV
	2	AZ	AZ	AZ	AZ			AZ		AZ
1	AZ	AZ	P	P		CY	P		AX	AZ
Route ID		26512	26513	26513B	26516	26518	26518	26518A	26519	

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Location		GREENHORN B6	GREENHORN B6	BRECKENRIDGE D1	BRECKENRIDGE D1	LAKE	LAKE	LAKE	LAKE	GREENHORN A6
Heritage										
Recreation			OHV STAGING							
Wildlife		RCA, FISHER CONSERVATION AREA; FISHER HABITAT			PART IN PAC KEC007 RCA PART					
Watershed										
Botany										
Lands & Minerals										
Safety		MOTORIZED TRAIL SIGNAGE sign for safety \$400			SIGNS AND ROLLING DIPS MINING AREA					
Difficulty Rating										
Mileage		0.43	0.53	0.88	1.02	1.02	1.80	0.53	3.14	6.02
Description		CHG Evans Flat CG - ML 3 to ML 2	NC Poso Creek East - CHG SEASON OF USE ML 2	Shirley Creek North - CHG SEASON OF USE ML 2	Mayflower - CHG ML 1 - Closed to Trail - All ADD SEASON OF USE	Addition to Patterson Lane	Addition to Patterson Lane	Addition to Patterson Lane	Addition to Herring Flat	Patt - ML 2- CHG SEASON OF USE
ALTERNATIVE	MOD 3	AV	AV	AV	CV	RZ	RZ	RZ	CZ	AV
	5	RZ	AZ	AZ						AZ
	4	AV	AV	AV	CV					AV
	3	AV	AV	AV	CV					AV
	2	RZ	AZ	AZ						AZ
	1	AX	AZ	AZ	CY					AZ
Route ID		265327	265329	265330	265333	265334	265340	265340-1	265350A	265337

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Location		LAKE	LAKE	LAKE	LAKE	BRECKENRIDGE D1	BRECKENRIDGE D1	BRECKENRIDGE E2	BRECKENRIDGE E2	BRECKENRIDGE D1
Heritage										
Recreation										
Wildlife										
Watershed										
Botany										
Lands & Minerals							ACCESSSES PRIVATE PROPERTY			
Safety							EA 01/20/2002 to discuss "mission NOT UPDATED NATLAS			
Difficulty Rating										
Mileage		0.50	1.14	0.18	0.04	0.15	0.59	0.14	0.04	2.25
Description		Addition to Boulder Gulch	Addition of Rich Gulch	Addition of Rich Gulch	Addition of Rich Gulch	Rough & Ready Min - CHG TO ADMIN USE ONLY, CHG SEASON OF USE	Rough & Ready Min - CHG SEASON OF USE ML 2 to ML 1 - Closed	ADD Hobo OG Overflow -ML 3	Hoodoo Hill - CHG TO ROAD OPEN TO ALL OR HIGHWAY LEGAL	Eagle - CHG SEASON OF USE - ML 2
ALTERNATIVE	MOD 3	RZ	RZ	RZ	RZ	AV	AV	RZ	RZ	AV
	5					AZ	AZ			AZ
	4					P			RZ	AV
	3					AV	AV	RZ	RZ	AV
	2					AZ	AZ			AZ
	1					P			AZ	AZ
Route ID		265145	265900	265904	265908	275901	275904	275904-A	275910	275913

## 685

Location		BRECKENRIDGE E2	BRECKENRIDGE E2	BRECKENRIDGE E2	BRECKENRIDGE E2	BRECKENRIDGE D3	BRECKENRIDGE D3	BRECKENRIDGE D3	BRECKENRIDGE D4	BRECKENRIDGE D4
Heritage						CULTURAL RESOURCES				
Recreation					RUTTED, BROODED, STEEP, POOR DRAINAGE, CROSSES CREEK	unmanaged recreation				FIRE EXEMPT
Wildlife					PART IN RCA	RCA				CONDOR ROOST AREA; PAC MCD ALT 3 PROPOSES GATE TO PROHIBIT PUBLIC ACCESS
Watershed										
Botany										
Lands & Minerals		CURRENTLY UNDER SPECIAL USE PERMIT			MINING CLAIMS, CURRENTLY ACTIVE	MINING CLAIM				GRAZING ALLOTMENT
Safety		GATED				some erosion	STEEP, RUTTED, ERODED NO DRAINAGE	ONLY ACCESS FROM SH. ROAD. RUTTED, ERODED USE. recommended for MMU	WASHCUT; NOT SAFE TO DRIVE	ADMIN USE UNDER SPECIAL USE PERMIT TO RADIO TOWERS
Difficulty Rating										
Mileage		0.28		0.26	0.88	0.84	0.63	0.32	0.48	0.13
Description		Group Camp - CHG TO ADMIN USE - ML 2		Rec Mine - CHG ML 2 - to Trail - All: CHG SEASON OF USE	Rec Mine - CHG ML 2 to ADMIN USE	Overpass - CHG ML 2 TO ADMIN USE	China Garden - CHG ML 2 - to ADMIN USE	China Garden - CHG FROM HIGHWAY LEGAL TO ALL VEHICLES (ML 3 to ML 2)	China Garden - CHG TO ML 2 - to ADMIN USE	Breckenridge LO - CHG ML 2
ALTERNATIVE	MOD 3	P	CZ	P	AZ	P	RZ	P	P	AZ
	6	AZ	AZ	AZ	AZ	AZ	RZ	AZ	AZ	P
	4	P	CZ	P	P	P	RZ	P	P	P
	3	P	CZ	P	P	P	RZ	P	P	AZ
	2	AZ	AZ	AZ	AZ	AZ	RZ	AZ	AZ	AZ
1	P	CW	P	AZ	P	AZ	P	P	P	AZ
Route ID		27826	27830A	27830A	27833	27837	27837	27837A	28807C	

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Location		BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE C3	BRECKENRIDGE C4	BRECKENRIDGE E3	BRECKENRIDGE E3	BRECKENRIDGE D4	BRECKENRIDGE D4
Heritage										
Recreation										
Wildlife		CONDOR ROOST AREA; PAC; MOD ALT 3 PROPOSES GATE TO PROHIBIT PUBLIC ACCESS	CONDOR ROOST AREA; PAC	CONDOR ROOST AREA; PAC		LOOP ROAD;		SCENIC VISTA	TRAIL-HEAD; ACCESSES REMINGTON RIDGE TRAIL	
Watershed										
Botany									MAINTAIN FENCE ALONG MEADOW	
Lands & Minerals						No ROW on Private				GRAZING ALLOTMENT
Safety					ROAD IS CRACKED, RUTTED, ALMOST IMPASSIBLE; NEEDS REPAIR				MAIN ACCESS ROAD IS ML 2 MOTORIZED MIXED USE; Sign for safety, P400	
Difficulty Rating										
Mileage		0.88	1.43	0.72	0.42	1.35	0.52	0.43	0.22	0.80
Description		Golf Meadow - CHG ML 2	Golf Meadow - CHG ML 2	Golf Meadow - CHG ML 1 to Trail - Alt; ADD SEASON OF USE	Cow Flat - CHG TO ROAD OPEN TO ALL WITH SEASON OF USE	Dougherty - CHG ML 2 TO ADMIN USE	O'Brien Springs - CHG TO ROAD OPEN TO ALL	O'Brien Springs - CHG ML 2 TO ADMIN USE ONLY	Breckenridge CG - CHG TO ROAD OPEN TO ALL MIXED USE (ML 3 to ML 2)	Munzer Meadow - CHG TO ADMIN ONLY
ALTERNATIVE	MOD 3	AZ	AZ	CZ	AZ	AZ	AZ	AZ	AZ	AZ
	5	P	P			AZ		P	RZ	P
	4	AZ	P		AZ	P		P	AZ	AZ
	3	AZ	AZ	CZ	AZ	AZ	AZ	AZ	AZ	AZ
	2	AZ	AZ			AZ		AZ	RZ	AZ
	1	AZ	AZ	CW	AX	AZ	AZ	AZ	AX	AZ
Route ID		28505	28503	28504A	28505A	28514	28519	28519	28521	28522

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Location		BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D4	BRECKENRIDGE D3	BRECKENRIDGE C4
Heritage				SURVEY DEFERRED		
Recreation		TRAILHEAD ACCESS	BRECKENRIDGE ACCESS TO SOUTH SIDE			
Wildlife		CONDOR ROOST, PAC KE036; RCA; MOD ALT 3 PROPOSES GATE TO PROHIBIT PUBLIC ACCESS				
Watershed						
Botany						
Lands & Minerals						
Safety				EROSION; NEEDS ROLLING DIPS	NONE	UNDER SPECIAL USE PERMIT ACCESS TO SCE FLUME
Difficulty Rating						
Mileage		0.40	0.19	0.07	0.16	0.71
Description		Squirrel Mdw - CHG to Trail - All WITH SEASON OF USE	Grouse Spring - CHG PORTION TO ADMIN USE ONLY - ML 2	ADD-Grouse Spring - ROAD OPEN TO ALL (ML 2); DEER SPRINGS FIRE EXEMPT	ADD-Democrat Beaches - ML 2 - Highway Legal; accesses parking area and toilet building	Dougherty Creek - CHG TO ADMIN USE (ML 2)
ALTERNATIVE	MOD 3	CZ		AZ	RZ	P
	5		P			AZ
	4		AZ	AZ	RZ	P
	3	CZ	AZ	AZ	RZ	P
	2		AZ			AZ
	1	CX	AZ	AX	RZ	P
Route ID		26834	26852	26962C	26957A	26881

***Appendix B***

***Supporting Documents for Hydrology and Soil  
Resources***

## **USFS REGION 5 Best Management Practices for OHV use and road construction and maintenance (from Regional Water Quality Management Plan, 2000)**

**The following Best management Practices Pertain to this Project:**

**7. Water Quality Monitoring of Off-Highway Vehicle (OHV) Use According To  
a Developed Plan (PRACTICE: 4-7)**

- a. Objective: To provide a systematic process to determine when and to what extent OHV use will cause, or is causing adverse effects on water quality.
- b. Explanation: Each Forest's OHV plan will:
  - 1) Identify areas, or routes where OHV use could cause degradation of water quality.
  - 2) Establish baseline water quality data for normal conditions as a basis from which to measure change.
  - 3) Identify water quality standards and the amount of change acceptable.
  - 4) Establish monitoring methods and frequency.
  - 5) Identify controls and mitigation appropriate in management of OHV's.
  - 6) Restrict OHV use to designated routes.
- c. Implementation: Monitoring results are evaluated against the OHV plan objectives for water quality and the LRMP objectives for the area. These results are documented, along with the actions necessary to correct identified problems.

If considerable adverse effects are occurring, or are likely to occur, immediate corrective action will be taken. Corrective actions may include, but are not limited to, reduction in the amount of ORV use, signing, or barriers to redistribute use, partial closure of areas, rotation of use on areas, closure to causative vehicle type(s), or total closure, and structural solutions, such as culverts and bridges.

Closure is accomplished through authority of the Forest supervisor.

### **12.2 Synopsis for Road and Building Site Construction**

NFS road planning, construction, reconstruction, maintenance and/or removal is a complex process. The process involves roads analysis, Access and Travel Management Planning as well as NEPA procedures. Though complex, it assures roads are located, designed and maintained to meet Forest management objectives. General objectives are set by legislation, policy, directives, and Forest and District plans.

Project-specific resource objectives and alternatives will be formulated by an IDT selected and convened by the line officer responsible for the road or building activity. Team members represent as needed; timber, engineering, geology, archaeology, land right-of-way or easements, hydrology, soil science, botany, landscape architecture, recreation, fisheries, wildlife, range, fire, fuels and minerals.

Most of the NFS roads in California were built under the timber harvest program as a requirement of the TSC. Other roads were constructed under Public Works Contracts for range, recreation, fire, or silvicultural purposes, or under special use purpose they serve.

Transportation planning is normally conducted on a Forest-wide basis with the objective of locating roads both to service the individual timber sale areas and to meet a Forest's other long-range transportation needs. Road reconnaissance personnel flag proposed road corridors on-the-ground using road management objectives, the Forest Transportation Plan, topographic maps, aerial photographs, and any preliminary soils, logging, engineering, or geology data.

These corridors are reviewed by an IDT. Modifications in design and/or alignment, or new alternative corridors are proposed based on multiple resource management objectives, and recommendations are made for road design criteria. Existing roads that are to be improved or removed go through the same interdisciplinary review. Inadequate roads that are retained as part of the transportation system are upgraded to current LRMP standards and guidelines to reduce adverse environmental effects and improve user safety.

Interdisciplinary team roads analysis information and recommendations, along with an economic analysis of alternatives, are used to generate a transportation study report. The report is used to help assess the environmental effects and costs of roads for each alternative in the resource project environmental documentation.

Once an alternative has been chosen through the NEPA process, work begins on the road survey. The transportation study report is used to establish design criteria from which a transportation engineer selects road design standards. The road design standards selected depend on the type and amount of traffic, topography, geology, soils, requirements of the environmental document and the Access Travel Management Plan. Most new roads today, however, are only short segments constructed for local access needs.

Engineers design the road according to the selected design standards, which may include, but are not limited to, road widths, road drainage, maximum road grades, radii, and road surfacing. Members of the IDT are usually involved in the road design phase, to assist in meeting the selected resource objectives. Road planning and implementation includes road design, construction staking and construction inspection. Road design includes selection of construction specifications, which help protect environmental concerns addressed in the environmental document and preparation of the construction contract. Road design and construction use Forest Service Standard Specifications for Roads and

Bridges, Special Project Specifications, Timber Sale B and C provisions, General Provisions and applicable American association of State Highway and Transportation Officials (AASHTO) and American Society for Testing and Materials (ASTM) specifications.

While road construction is in progress, the Engineering Representative (ER), Contracting Officers Representatives (COR), SA, FSR and Construction Inspector (CI), are frequently on the project site. These inspectors, along with a purchaser's or contractor's field representative, assure that the project is carried out according to the specifications in the contract. Various IDT members will be called upon to review proposed design modifications during construction.

As part of the project plan, road management objectives are developed which detail the level of maintenance for each road. There are five levels of maintenance for permanent roads varying from Level 1 (custodial care of the road and assuring functional road drainage) to Level 5 (the maintenance of two-laned, paved roads). Maintenance generally consists of, but is not limited to, cleaning, ditches and culverts, road surface grading, pothole patching and surface replacement.

Closed system roads (Level 1) are barricaded to preclude use for a year or longer. Water bars are installed where necessary. All open permanent roads will be inspected periodically and maintained as needed. Temporary roads are built for short-term use, principally under a TSC or for emergency wildfire access. When the temporary road is no longer needed, temporary drainage structures are removed, and the roads are decommissioned as required by the provisions of the applicable contract.

Environmental documents based on the work of IDT are also prepared for proposed building sites. Facilities normally encountered on National Forests are administrative sites, such as fire stations, work centers, ranger stations, campgrounds or VIS centers. Other proposals come from the private sector to build such facilities as: ski areas, marinas, concession building, waste disposal areas or access to private land inholdings.

Facility locations will be evaluated in much the same way as timber sale areas. An IDT is formed to develop resource objectives, formulate alternatives, and analyze the various sites for environmental effects. The IDT prepares environmental analysis, recommends alternatives, design criteria, and mitigation measures to meet Forest resource objectives at each site.

#### 12.21 Index for Road and Building Site Construction Practices

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4. Stabilization of Road Slope Surfaces and Spoil Disposal Areas	2-4	58

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#### 12.22 Road and Building Site Construction Best Management Practices

The following are the BMPs for the control of non-point source pollution associated with road and building site construction activities. Each BMP was formulated based on the administrative directives that guide and direct the Forest Services' construction and maintenance of roads, buildings, and administrative facilities on NFS land.

The line officer on each administrative subunit is responsible for fully implementing the directives that require water quality protection and improvement during road and facilities construction and maintenance. The directives referenced in Section 13, provide details on methods to incorporate water quality controls into each phase of the road and facility construction and maintenance program. The BMPs synthesize the direction into a "process" to be followed.

Trained and qualified earth scientists, and other professional employees, are available to provide the engineering work force with technical assistance to identify beneficial uses and the most recent state-of-the-art water quality control methods and techniques; and to evaluate results. Publications and training sessions provide road construction and

maintenance engineers with knowledge of the latest proven water quality protection methods.

**1. General Guidelines for the Location and Design of Roads (PRACTICE: 2-1)**

- a. Objective: To locate and design roads with minimal resource damage.
- b. Explanation: The following are some general considerations, which must be incorporated into the planning process of road location and design. These measures are preventive, apply to all transportation activities, and indirectly protect water quality.
  - 1) A basic requirement for transportation facility development and operation is the formulation and evaluation of alternatives that will best meet the resource management objectives with the least adverse effect on environmental values.
  - 2) The location, design, and construction of roads include the use of IDTs. These teams include professional personnel with skills in road, resources and water quality management. The team evaluates the effects of road system development or modification proposals on the environment, and formulates alternative.
  - 3) All resource-coordinating instructions for the protection and prevention of damage to NFS lands, resources, and ecological systems, including wetlands and floodplains will apply to the planning, development, and operation of transportation facilities. The following instructions apply to permanent roads:
    - a) Locate roads to complete the area transportation system, to fit the terrain, and to minimize damage to improvements and resources. Avoid sensitive areas such as wetlands, inner gorges and unstable ground to the extent practical.
    - b) Base road design standards on design criteria such as traffic requirements of a timber sale, or the overall transportation plan, road management objectives or resource objectives, and minimize the effects on Forest resources including water quality.
    - c) Design stream crossing structures to provide the most cost efficient drainage facility consistent with resource protection, facility needs, and legal obligations. The design involves a hydrologic analysis to determine runoff volumes, flood conditions, velocities, scour, and open channel shapes. An economic comparison of various flood frequencies versus structure sizes and types is also done to meet resource and legal requirements and cost/benefit comparisons. All crossings will be designed to provide for unobstructed flows and

fish passage, and to minimize diversion potential and alteration of stream channels.

- c. Implementation: The IDT is selected by the line officer to assist in locating the road to best fit resource objectives, and to develop detailed mitigation measures. For force account projects, Forest engineers will be responsible for developing and meeting design specifications.

For some timber sales awarded to small businesses, the purchaser may request that the Forest Service construct the roads. Under present guidelines, such work is normally done by contracting with a road construction contractor.

The COR, ER or FSR ensures compliance with project plan requirements and the operating plan.

## **2. Erosion Control Plan (PRACTICE: 2-2)**

- a. Objective: To limit and mitigate erosion and sedimentation through effective planning prior to initiation of construction activities and through effective contract administration during construction.
- b. Explanation: Land disturbing activities can result in short term erosion. By effectively planning for erosion control, sedimentation can be controlled or prevented. Within a specified period after award of a contract (presently 60 days prior to the first operating season in Timber Sale Contracts, per C6.3) the purchaser will submit a general plan which, among other things, sets forth erosion control measures. Operations cannot begin until the Forest Service has given written approval of the plan. The plan recognizes the mitigation required in the contract. A similar plan is required of miners and special use permittees.
- c. Implementation: Design engineers develop detailed mitigation using an IDT. The detailed mitigations are reflected in the contract specifications and provisions. The intent of mitigation is to prevent construction-generated erosion, as well as that generated from the completed road, from entering watercourses. Contracted projects are implemented by the contractor or operator. Compliance with contract specifications and operating plans is ensured by the COR, ER, or FSR through inspection.

This practice is commonly applied to all road construction through contract clauses and specifications and will apply to road construction for timber sales, mining, recreation, special uses and other roadwork on NFS lands.

## **3. Timing of Construction Activities (PRACTICE: 2-3)**

- a. Objective: To minimize erosion by conducting operations during minimal runoff periods.
- b. Explanation: The amount of erosion and sedimentation from road construction are affected by the magnitude of water runoff. An essential element of effective erosion control is to schedule operations during the dry season or when rain and runoff are unlikely. Purchasers will be required to schedule and conduct operations during the dry season or when rain and runoff are unlikely. Purchasers will be required to schedule and conduct operations to minimize erosion and sedimentation. Equipment will not be allowed to operate when ground conditions are such that excessive rutting and soil compaction could result. Such conditions will be identified by the COR or ER with the assistance of an earth scientist or other specialists as needed.

Erosion control work will be kept as current as practicable on active road construction projects. Construction of drainage facilities and performance of other contract work to control erosion and sedimentation will be required in conjunction with earthwork projects. The operator should limit the amount of area being graded at a site at any one time, and should minimize the time that an area is laid bare. Erosion control work must be kept current when road construction occurs outside of the normal operating season.

- c. Implementation: Detailed mitigations developed by design engineers and an IDT will be included in the environmental analysis and in subsequent project plans and contracts.

Project crew leaders and supervisors will be responsible for implementing force account projects to construction specifications and as specified in the project plan. Contracted projects are implemented by the contractor, or operator. Compliance with plans, specifications, and the operating plan will be achieved by the COR or ER through inspection.

**4. Stabilization of Road Slope Surfaces and Spoil Disposal Areas (PRACTICE: 2-4)**

- a. Objective: To minimize erosion from exposed cut slopes, fill slopes, and spoil disposal areas.
- b. Explanation: This is a preventive practice using bioengineering and other techniques to prevent or minimize erosion. Depending on site factors such as slope angle, soil type, climate, and proximity to waterways, many fill slopes, some cut slopes, and some spoil disposal areas will require vegetative and/or mechanical measures to provide surface soil stability. The level of stabilization effort needed is determined on a case-by-case basis by trained and qualified employees.

Revegetation includes the seeding of plant species grass, legumes, or browse species--or the planting of brush, or trees. Revegetation may also include fertilizer, soil amendments, and mulching or even watering to ensure success. A combination of plant types with both woody root systems and fibrous root systems usually produce better results than a single plant type such as grass. Native species are preferred and used wherever feasible. Where local native seed is not available, not economically feasible or native plants would be ineffective in controlling erosion sterilized grass or cereal grain seed is applied.

Mechanical measures may include, but are not limited to: wattles, erosion nets, terraces, side drains, blankets, mats, riprapping, mulch, tackifiers, pavement, soil seals, and windrowing construction slash at the toe of fill slopes.

- c. Implementation: Vegetative measures are generally a supplementary device, used to improve the effectiveness of mechanical measures, but can be effective and complete by themselves. They may not take effect for several seasons, depending on the timing of project completion in relation to the growing season.

Mechanical and vegetative surface stabilization measures will be periodically inspected to determine effectiveness. In some cases, additional work will be needed to ensure that the vegetative and/or mechanical surface stabilization measures continue to function as intended.

Initial project location, mitigation measures and management requirements are developed during the environmental analysis process. These are translated into project plans, contract provisions and specifications. Project road inspectors, and their supervisors monitor work accomplishment and effectiveness, to ensure that design standards, project plan management requirements, and mitigation measures are met.

## **5. Road Slope Stabilization Construction Practices (PRACTICE: 2-5)**

- a. Objective: To reduce sedimentation by minimizing erosion from road slopes and slope failure along roads.
- b. Explanation: This is an administrative and construction practice. It is prohibitively expensive to immediately and completely prevent erosion from road cut and fill slopes. However, plan all road construction considering adequate stabilization needs. The first planning requirement is an adequate soils and geologic investigation, to provide data necessary for proper cut and fill design such as:

- 1) The correct cut and fill slope steepness according to the stable angle of repose for the type of material.
- 2) Methods to handle surface and subsurface runoff.
- 3) Necessary compaction standards and surfacing needs.

A prerequisite for stabilization is to provide basic mechanical stability of the soils, using data from soils and geologic investigations to develop requirements for proper slope angles, compaction, and adequate drainage.

- c. **Implementation:** Include erosion prevention considerations in planning for all road construction contracts. Application is commonly in conjunction with practice 2-4.

Complete most, if not all, of the stabilization measures prior to the first winter rains. At especially critical locations, with a high erosion and/or sedimentation potential, extensive and reliable remedies will be necessary. Determine a project location and detailed mitigation measures during the environmental analysis and included them in the project plan.

Project crew leaders and supervisors will be responsible for ensuring that force account projects meet design standards and project criteria. Contracted projects are implemented by the contractor or operator. Compliance with project plan requirements and the operating plan is ensured by the COR, or ER through inspection.

**6. Dispersion of Subsurface Drainage From Cut and Fill slopes (PRACTICE: 2-6)**

- a. **Objective:** To minimize the possibilities of cut or fill slope failure and the subsequent production of sediment.
- b. **Explanation:** This is a preventive practice. Roadways may change the subsurface drainage characteristics of a slope. Since the angle and height of cut and fill slopes can increase the risk of instability, it is often necessary to provide subsurface drainage to avoid moisture saturation and subsequent slope failure. Where ground water dispersion is necessary because of slopes, soil, aspect, precipitation amounts, inherent instability, or other related characteristics, dispersion methods would include:
  - 1) Underdrains or subdrains (e.g. pipes, geotextiles)
  - 2) Horizontal drains or chimney drains

Dispersal of collected water will be accomplished in an area capable of withstanding increased flows. On erosive soils, energy dissipaters or other

slope stabilization treatments or conveyance devices need to be placed below pipes carrying large volumes of water. Road surface may be designed to dissipate the intercepted water in a uniform manner along the road.

- c. Implementation: Project location and detailed mitigation will be determined by design engineers and the IDT, documented and incorporated into subsequent project plans and contracts.

Project crew leaders and supervisors will be responsible for implementing force account projects to construction specifications as specified in the environmental analysis. Contracted projects are implemented by the contractor or timber sale operator. Compliance with project plan requirements and operating plans is ensured by the COR, FSR, or ER.

## **7. Control of Road Drainage (PRACTICE: 2-7)**

- a. Objective: Is to minimize the erosive effects of water concentrated by road drainage features; to disperse runoff from disturbances within the road clearing limits; to lessen the sediment yield from roaded areas; to minimize erosion of the road prism by runoff from road surfaces and from uphill areas.
- b. Explanation: This is a preventive practice. A number of treatments can be used, alone, or in combination, to control unacceptable effects of road drainage. Methods used to reduce erosion include but are not limited to such controls as construction of properly spaced cross drains, water bars or rolling dips; installing energy dissipaters, apron, downspouts, gabions, flumes, overside drains and debris racks; armoring of ditches, drain inlets and outlets and removing or adding berms to control runoff. Accomplish dispersal of runoff on the road surface by such means as rolling the grade, outslowing or crowning. Installing water spreading ditches or contour trenching can disperse road water after the water leaves the road surface.

Dispersal of runoff reduces downstream peak flows and associated scouring of the channels and sediment transport.

Reduce sediment loads from road surfaces by adding aggregate or paving surfaces or by installing such controls as: sediment filters, settling ponds, and contour trenches. Soil stabilization can reduce sedimentation by lessening erosion on borrow and waste areas, on cut and fill slopes, and on road shoulders.

- c. Implementation: Project location, design criteria and detailed mitigation are determined and documented during the environmental analysis process. These are then incorporated into the project plan.

Project crew leaders and supervisors will be responsible for ensuring that force account projects meet construction specifications, and project criteria. Contracted projects are implemented by the contractor, or operator. Compliance with plans, specifications, and operating plans is ensured by the COR, ER, or FSR.

This practice is required in contracts when the need is identified in the project planning process.

**8. Constraints Related to Pioneer Road Construction (PRACTICE: 2-8)**

- a. Objective: To minimize sediment production and mass wasting from pioneer road construction.
- b. Explanation: Pioneer roads are built to allow equipment access for construction of planned roadways. Pioneering is usually done within the roadway construction corridor of the planned road. To meet the objective of minimizing sediment the following constraints will be followed:
  - 1) Confine construction of pioneer roads to the planned roadway construction limits unless otherwise specified or approved by the ER or COR.
  - 2) Locate and construct pioneering roads to prevent undercutting of the designated final cut slope, avoid deposition of materials outside the designated roadway limits, and accommodate drainage with temporary culverts or log crossings.
  - 3) Complete erosion control work prior to the rainy season and in accordance with contract, or project plan requirements.
  - 4) Dewater sites on live streams crossed by pioneer roads with diversion devices (see Practice 2-15).
- c. Implementation: Determine and document project location and describe mitigations set forth during the environmental analysis process. Incorporate them into subsequent project plans and/or contracts.

Project crew leaders and supervisors will be responsible for implementing force account projects according to construction specifications and as specified in the project plan.

Contracted projects are implemented by the contractor, or timber sale operator. Compliance with plans, specifications, and operating plans is ensured by the COR, FSR, or ER.

**9. Timely Erosion Control Measures on Incomplete Roads and Stream Crossing Projects (PRACTICE: 2-9)**

- a. Objective: To minimize erosion and sedimentation from disturbed ground on incomplete projects.
- b. Explanation: The best drainage design can be ineffective if erosion control has not been completed by the end of the normal operating season. Affected areas can include roads, road fills, tractor trails, skid trails, landings, stream crossings, bridge excavations, and firelines.

Preventive measures include:

- 1) Removal of temporary culverts, culvert plugs, diversion dams, or elevated stream crossings.
  - 2) Installation of temporary culverts, side drains, flumes, cross drains, diversion ditches, energy dissipaters, dips, sediment basins, berms, debris racks, or other facilities needed to control erosion.
  - 3) Removal of debris, obstructions and spoil material from channels and floodplains.
  - 4) Planting vegetation, mulching, and/or covering exposed surfaces with jute mats or other protective material.
- c. Implementation: Apply protective measures to all areas of disturbed, erosion-prone, unprotected ground that is not to be further disturbed in the present year. When conditions permit operations outside of the normal operating season, update the operating plan as necessary and keep erosion control measures sufficiently current with ground disturbance to allow rapid closure when weather conditions deteriorate. Do not leave project areas for the winter with remedial measures incomplete.

Develop project mitigation measures and layout requirements during the environmental analysis process. Incorporate them into subsequent project plans and/or contracts.

Project crew leaders and supervisors are responsible for ensuring that force account projects meet construction specifications and project criteria.

Contracted projects are implemented by the contractor or operator. Compliance with project plan criteria, contract specifications and operating plans is ensured by the COR, ER, or FSR.

**10. Construction of Stable Embankments (Fills) (PRACTICE: 2-10)**

- a. Objective: To construct embankments with materials and methods, which minimize the possibility of failure and subsequent water quality degradation.
- b. Explanation. The failure of road embankments and the subsequent deposition of material into waterways may result from the incorporation of slash, or other organic matter into fills, from a lack of compaction during the construction of the embankment, or use of inappropriate placement methods.

To minimize fill failures, design and construct the roadway as a stable and durable earthwork structure with adequate strength to support the treadway, shoulders, subgrade and the roads traffic loads. Proper slope ratio design will promote stable embankments. Adjacent to SMZs construct and place embankments of inorganic material by methods 2 to 6 below. Construct or place other embankments of inorganic material by one, or more of the following methods:

- 1) Sidecasting and end dumping
- 2) Layer placement
- 3) Layer placement (roller compaction)
- 4) Controlled compaction
- 5) Special project controlled compaction
- 6) In some situations it will be necessary to minimize fill volumes and/or strengthen fills using retaining walls, confinement systems, plantings or a combination of techniques.

On projects, where required densities are specified, some type of moisture compaction control will be necessary. Where outer faces of embankments are not stabilized, due to equipment access difficulty, unfinished slopes subject to erosion and slipping will be stabilized following Practice 2-4.

- c. Implementation: Project requirements and mitigation measures are developed and documented during the environmental analysis and road design process, by the IDT. The appropriate method of embankment placement is chosen during this process.

Project crew leaders and supervisors will be responsible for implementing force account projects, to construction specifications and project criteria. Contracted projects are implemented by the contractor, or operator. Compliance with project plan specifications, and the operating plan is ensured by the COR, CI and ER through inspection.

## **11. Control of Sidecast Material During Construction and Maintenance (PRACTICE: 2-11)**

- a. Objective: To minimize sediment production originating from sidecast material during road construction or maintenance.
- b. Explanation: Unconsolidated materials including rocks and boulders that are cast over the side of the road shoulder can roll directly into streams, damage downslope vegetation and create bare areas that are difficult to stabilize with vegetation. Where spoil does not directly reach a stream, it is still highly susceptible to erosion, dry ravel and mass instability, and subsequently can directly deliver sediment to a nearby stream. Site-specific limits and controls for side casting or end hauling are developed and documented during environmental analysis. Loose, unconsolidated sidecast material must not be permitted to enter SMZs, (see Practice 2-17).

Sidecasting is an unacceptable construction alternative in areas where it can adversely impact water quality. Prior to the start of construction, or maintenance activities, waste areas must be located where excess material can be deposited and stabilized. During road maintenance operations, potential sidecast and other waste material will be utilized on the road surface or removed to designated disposal sites.

The roadway will be constructed within reasonable limits of the lines, grades, and dimensions given in the engineering drawings and designated on the ground. Provisions for waste material disposal are included in every road construction and maintenance contract.

- c. Implementation: Project location, selected disposal areas, and mitigation will be developed and documented during the environmental analysis.

Project crew leaders and supervisors will be responsible for ensuring that force account projects meet construction specifications and project criteria. Road maintenance plans are developed for each forest and include slide and slump repairs and disposal site locations for excess material.

Contracted projects are implemented by the contractor or timber sale operator. Compliance with project criteria, contract specifications, and operating plans will be enforced by the COR, ER, or FSR. Standard maintenance specifications have been prepared which include disposal area operation, disposal methods, and surface treatment.

Timber sale contracts include clause C5.4 to address temporary road maintenance specifications, which includes slide and slump repair, surface blading, and side casting during road maintenance.

**12. Servicing and Refueling of Equipment (PRACTICE: 2-12)**

- a. Objective: To prevent pollutants such as fuels, lubricants, bitumens and other harmful materials from being discharged into or near rivers, streams and impoundments, or into natural or man-made channels.
- b. Explanation: During servicing and refueling of logging and road construction equipment, any spilled pollutants can be transported by runoff to surface waters. If the volume of fuel exceeds 660 gallons in a single container, or if total storage at a site exceeds 1,320 gallons, project Spill Prevention, Containment and Counter Measures (SPCC) plans are required. Contaminated upland soils can be a long-term threat to surface and ground water quality. This threat must be managed by disposing of waste material properly, selecting service and refueling areas well away from wet areas and surface water; by using berms around such sites and by utilizing impermeable liners or other techniques to contain spills according to the Forest SPCC plan.
- c. Implementation: The COR, ER, CI, or TSA are authorized to designate the location, size and allowable uses of service and refueling areas. Operators are required to remove service residues, waste oil and other materials from National Forest land. They must also be prepared to take responsive actions in case of a hazardous substance spill, according to the Forest SPCC plan.

**13. Control of Construction and Maintenance Activities Adjacent to SMZs (PRACTICE: 2-13)**

- a. Objective: To protect water quality by controlling construction and maintenance actions within and adjacent to any streamside management zone so that the following SMZ functions are not impaired:
  - 1) Acting as an effective filter for sediment generated by erosion from bare surfaces, road fills, dust drift, and oil traces;
  - 2) Maintaining shade, riparian habitat (aquatic and terrestrial), and channel stabilizing effects;
  - 3) Keeping the floodplain surface in a resistant, undisturbed condition to slow water velocities and limit erosion by flood flows.
- b. Explanation: Construction and maintenance fills, sidecast, and end-hauled materials are kept out of SMZs except at designated sites to minimize effects on the aquatic environment. Factors such as stream class, channel stability, sideslope steepness, ground cover, and sideslope stability are taken into account in developing zone widths. In some situations, SMZ widths are established by records of decision and by EIS standards and guidelines (e.g.

PACFISH EA, Northwest Forest Plan ROD). It is also necessary to stabilize fill slopes to prevent sediment accumulations in the streamside zone.

SMZs are determined and documented during the environmental analysis process by the IDT, which includes hydrologists, fishery biologists, and other specialists as required.

- c. Implementation: Project location alternatives are formulated, and mitigation measures developed by the IDT are included into the contract by design engineers. Project crew leaders and supervisors are responsible for ensuring that force account projects meet maintenance and construction specifications and project criteria.

Contracted projects are implemented by the contractor, or operator. Compliance with mitigation measures, contract specifications, and operating plans is ensured by the COR, FSR, or ER.

#### **14. Controlling In-Channel Excavation (PRACTICE: 2-14)**

- a. Objective: To minimize stream channel disturbances and related sediment production.
- b. Explanation: During construction, heavy equipment may need to cross, or work in and near streams or lakes. This is permitted only as necessary in the construction, or removal of culverts and bridges and other facilities (e.g. water sources, boat ramp/launching sites, etc.) and only under specific protection requirements. The Engineering Representative (ER) is authorized to designate the location of crossings or work sites and coordinate with the contractor to manage heavy equipment.

Excavation during the installation of in-stream structures must follow all of the following minimum water quality protection requirements.

- 1) Unless otherwise approved, no excavation will be made outside of caissons, cribs, cofferdams, or sheet piling.
- 2) The natural streambed or lake bottom adjacent to the structure will not be disturbed without prior approval of the ER or COR.
- 3) If any excavation, or dredging is made at the site of the structure before caissons, cribs, or cofferdams are sunk in place, all such excavations will be restored to the original surface and the streambed or lake bottom must be protected with suitable stable material.
- 4) Material deposited within the stream or lake area from foundation, or other excavation will not be discharged directly into live streams or

lakes, but will be put into settling areas as shown on the engineering drawings or as approved by the ER, or COR. (See Practice 2-15)

- 5) If the channel or lake bottom is disturbed during construction, it must be restored to its original configuration while minimizing any additional disturbance.
  - 6) Disturbances of stream or lake banks are kept to a minimum. Disturbed banks are stabilized.
- c. Implementation. Mitigation measures developed by the IDT are set forth in the environmental documentation and incorporated into the contract by design engineers. Project crew leaders and supervisors will be responsible for ensuring that force account projects meet construction specifications and project criteria.

Contracted projects are implemented by the contractor or operator. Compliance with mitigation measures, contract specifications, and operating plans is enforced by the CI, COR, FSR or ER.

## **15. Diversion of Flows Around Construction Sites (PRACTICE: 2-15)**

- a. Objective: To ensure that all stream diversions are carefully planned, to minimize downstream sedimentation, and to restore stream channels to their natural grade, condition, and alignment as soon as possible.
- b. Explanation: Streamflow must be diverted around construction sites such as bridges, culverts and dams. The streamflow will be diverted for all live streams according to the instructions of the ER. The diverted flows are returned to their natural streamcourse as soon as possible after construction or at least prior to the rainy season. All disturbed areas are stabilized prior to the rainy season or as needed.
- c. Implementation: This practice is required by contract clauses. The NEPA and design process will identify where diversions are required, and the design will include mitigation necessary to protect in-stream values and downstream beneficial uses of the water. Planning must include environmental analysis to identify and prevent unacceptable effects to the beneficial uses of the water. The planning process may require project review and/or issuance of permits or certifications by other Federal, State, or local agencies and, where appropriate, private parties. Case by case determinations must be made during project planning as to out-service review and consultation needs. Coordination with California Department of Fish and Game (CDFG) is initiated in most all cases.

Project location, bypass design, and detailed mitigation will be developed in the design and planning process to meet project criteria. Project crew leaders and supervisors will be responsible for implementing force account projects to construction specifications and to meet project criteria.

Contracted projects are implemented by the contractor, or operator. Compliance with project criteria, contract specifications and operating plans is enforced by the CI, COR, ER, or SA.

**16. Stream Crossings on Temporary Roads (PRACTICE: 2-16)**

- a. Objective: To ensure that temporary roads do not unduly damage stream channels and to ensure that fish passage is unimpeded by stream crossing structures.
- b. Explanation: Stream crossing structures (e.g. culverts, bridges) are required on all temporary roads where it is necessary to cross designated channels. Means of crossing will include but not be limited to, culverts, bridges, coarse rock fills, hardened fords, (using such features as rocked approaches), and low water crossings. Identifying locations to cross streams will be accomplished using an IDT. Such crossings are designed to provide for unobstructed flows and the passage of fish, and to minimize damages to stream channels and water quality.

The number of crossings is kept to the minimum needed for access. Channel crossings will be as perpendicular to stream courses as possible. Streambank excavation will be kept to the minimum needed for use of the crossings, and entry and exit ramps may need to be rocked. Fords and turnpike crossings hardened with washed rock, concrete planks, slabs or geogrid are sometimes an acceptable alternative, depending on water quality, fishery and hydrological considerations.

Temporary crossing facilities will be removed and the site stabilized prior to the rainy season each year or when the facility is no longer needed, which ever is earliest.

- c. Implementation: This practice is required when documented in the project plan. In timber sales, stream crossing are located, and mitigation is implemented by the SA, using instructions in the TSA Handbook, supplemental Forest guidelines, and considering IDT recommendations. Mitigation at sensitive stream crossings must be assessed, and controls prescribed during the environmental analysis by the IDT.

Project crew leaders and supervisors will be responsible for ensuring that force account projects meet construction specifications and project criteria.

Contracted projects are implemented by the contractor, or operator. Compliance with the requirements in the project plan, contract and/or operating plan is ensured by the CI, COR, FSR, SA, or ER.

**17. Bridge and Culvert Installation (PRACTICE: 2-17)**

- a. Objective: To minimize sedimentation and turbidity resulting from excavation for in-channel structures.
- b. Explanation: Excavation is a common requirement for the installation of bridges, culverts, weirs, check dam, riprapping and other structures. Spoil material generated during construction should neither obstruct the stream course (including natural floodplains) nor impair the efficiency of the associated structures. Preventive measures include:
  - 1) Keep excavated materials out of channels.
  - 2) Remove any materials stacked, or stockpiled on floodplains prior to the rainy season.
  - 3) Divert flowing water around work sites to minimize erosion and sedimentation.
  - 4) Suitably locate bypass roads and develop plans for their subsequent obliteration and stabilization.
  - 5) In some cases, fill material may have to be imported for better soil compaction. Original fill may have to be exported to a disposal site.

Streams identified as important for fisheries or other aquatic resources may require that the channel not be disturbed except during flow periods specified in the project plan. Normally, this work would occur during low flow periods. Work would not be allowed during spawning periods, or other periods critical to aquatic resources. Downstream sediment basins or other sediment reduction facilities or techniques will be necessary to mitigate impacts.

- c. Implementation: Project location and detailed mitigation measures will be developed during the design process to meet project criteria, using an interdisciplinary process.

Project crew leaders and supervisors will be responsible for ensuring that force account projects meet construction specifications and project criteria.

**18. Regulation of Streamside Gravel Borrow Areas (PRACTICE: 2-18)**

- a. Objective: To limit channel disturbances and sediment production associated with gravel source development.
- b. Explanation: Materials deposited along channels by storm runoff often provide a source of gravel. With adequate planning gravel can be removed with minimal impact on water resources and channel stability. Gravel removal can alter streamflow characteristics and consequently effect channel stability and create a new sediment source. Borrowing will be limited to material deposited above the bankfull line. Borrow area shaping or other special drainage re-configuration actions are taken to maintain channel function.

Excavation will not take place below the water table unless sediment basins are built to contain, or catch the resulting sediment. Sediment basins should not be subject to washouts. If excess sediment accumulates in basins, the basin will be cleaned and the sediment deposited and stabilized at approved sites outside the area where it could re-enter the stream.

Wash water or waste from concrete batching, or aggregate operations will not be allowed to enter streams prior to treatment by filtration, flocculation, settling, and/or other means. (See also Practice 3-3)

- c. Implementation: Project location, stability and the limits for disturbance and sediment production will be developed through the environmental analysis and the IDT and in consultation with State Fish and Game or other pertinent agency. Detailed mitigation measures will be developed by the design engineer to meet project criteria.

Project crew leaders and supervisors will be responsible for implementing force account projects to construction specifications and project criteria.

Contracted projects are implemented by the contractor or operator. Compliance with project criteria, contract specifications, and operating plans is ensured by the CI, FSR, COR, or ER.

Special us permits issued for gravel bar excavation will include the above requirements, an operating plan and reclamation plan if warranted. District Rangers or their representatives will be responsible for ensuring compliance.

## **19. Disposal of Right-of-Way and Roadside Debris (PRACTICE: 2-19)**

- a. Objective:
  - 1) To ensure that organic debris generated during road construction is kept out of streams so that channels and downstream facilities are not obstructed.

- 2) To ensure debris dams are not formed which obstruct fish passage, or which could result in downstream damage from high water flow surges after dam failure.
- b. Explanation: As a preventive measure, construction debris and other newly generated roadside slash developed along roads in the streamside management zone is disposed of by the following means as applicable: (See also Practice 2-11)
  - 1) On Site:
    - a) Piling and burning
    - b) Burying
    - c) Chipping
    - d) Scattering
    - e) Disposal in cutting units
    - f) Windrowing at the base of fill slopes
    - g) Incorporation {only in temporary roads}
  - 2) Removal to agreed upon locations (especially stumps from the road prism).
  - 3) A combination of the above.
  - 4) Large limbs and cull logs are removed to designated sites outside the SMZ or relocated within the zone to meet aquatic resource management objectives.
- c. Implementation: Criteria for the disposal of right-of-way and roadside debris will be established during onsite evaluation by an IDT. Project location and detailed mitigation measures are also developed and set forth in the environmental analysis and incorporated into project plans and/or contracts.

Project crew leaders and supervisors will be responsible for ensuring that force account projects meet construction specifications.

Contracted projects are implemented by the contractor or operator. Compliance with plans, specifications, and operating plans is ensured by the CI, COR, or ER.

## **20. Specifying Riprap Composition (PRACTICE: 2-20)**

- a. Objective: To minimize sediment production associated with the installation and utilization of riprap material.
- b. Explanation: Riprap is commonly used to armor streambanks and drainage ways from the erosive forces of flowing water. Riprap must be sized and installed in such a way that it effectively resists erosive water velocities. On occasion, this may require the use of filter blankets, or other methods to prevent undermining. Stone used for riprap will be free of weakly structured rock, soil, organic material and other material not resistant to streamflow that would only serve as sediment sources. Outlets of drainage facilities on

erodible soils commonly require riprapping for energy dissipation. The Corps of Engineers and Federal Highway Administration procedures are commonly used for designing riprap structures.

- c. Implementation: Project location and detailed mitigation will be developed through the planning and design process to meet the mitigation measures and requirements of the project plan.

Project crew leaders and supervisors will be responsible for implementing force account projects to construction specifications and project criteria.

Contracted projects are implemented by the contractor or operator. Compliance with project criteria and operating plans is ensured by the COR, or ER.

## Riparian Conservation Objectives Analysis

### Existing Surveys:

There are fourteen SCI locations in the analysis area. Table F1 provides location and survey dates for these surveys.

**Table F1. Locations of the Stream Condition Inventory Plots in the Motorized Travel Management Analysis Area**

Area	Name	Location	Initial Survey	Resurvey		
Greenhorn Mtns	Cedar Creek	Alder Ck Campground	2001	2006	2007	
	Cedar Creek	Cedar Ck Campground	2001	2006	2007	
	Ice House Creek	Alta Sierra/Shirley Mdws	2003			
	Little Poso Creek	Below Basket Pass	2003	2005	2006	2007
	Greenhorn Creek	By Lone Star Mine	2005	2006		
	Bear Creek	Below Boy Scout Camp	2001	2006	2007	
	White River	White River Camp	2001	2006		
Piute Mountains	Cow Creek	By Silver Strand Mine	2006	2007		
	French Gulch Creek	By French Meadow	2006			
	Kelso Creek	By Landers Camp	2004			
	Clear Creek	At Brown Meadow	2004			
	Clear Creek	At Burton Mill	2004			

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Breckenridge	Stark Creek	Above Hwy 178	2006			
	Dougherty Creek	Above Hwy 178	2006			

For a full description of SCI and these surveys, please refer to the Affected Environment of the Hydrology and Soils section. Numerous stream channel stability analysis have been performed on the project area after Pfankuch (1978). A description of surveyed channels is provided in the Affected Environment of the Watershed Report.

**Applicable Management Requirements and Constraints:**

- X** Aquatic Management Strategy (AMS) goals and objectives
- X** Riparian Conservation Areas
- X** Riparian Conservation Objectives (RCO) Analysis standards and guidelines

6. ☐ Critical Aquatic Refuges

Note: The long-term strategy for anadromous fish-producing watersheds applies only to the Lassen National Forest.

**Discussion:**

Pertinent to the Motorized Travel Management area, three of the four management elements of the 2001 Sierra Nevada Forest Plan Amendment apply: aquatic management strategy, riparian conservation areas (RCAs), and (RCOs) with their associated standards and guidelines. There are no critical aquatic refuges within the project area. The fourth element, the long-term strategy for anadromous fish-producing watersheds, applies only to the Lassen National Forest.

Applicable RCOs

X 1. *Ensure that identified beneficial uses for the water body are adequately protected. Identify the specific beneficial uses for the project area, water quality goals from the Regional Basin Plan, and the manner in which the standards and guidelines will protect the beneficial uses.*

X 2. *Maintain or restore: (1) the geomorphic and biological characteristics of special aquatic feature, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; (2) streams, including in stream flows; (3) hydrologic connectivity*

*both within and between watersheds to provide for the habitat needs of aquatic-dependent species.*

*X 3. Ensure a renewable supply of large down logs that: (1) can reach the stream channel and (2) provide suitable habitat within and adjacent to the RCA.*

*X 4. Ensure that management activities, including fuels reduction actions, within RCAs and CARs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species.*

*X 5. Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas.*

*X 6. Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species.*

### **RCO Standard and Guideline Discussion**

The RCOs listed in the 2001 Sierra Nevada Forest Plan Amendment Record of Decision were reviewed for applicability to the project. Portions of all the RCOs apply to the project and are further reviewed below. The RCOs were reviewed for consistency with the associated standards and guidelines. With adherence to the mitigations, none of the project activities were found to be inconsistent with the standards and guidelines.

### **Riparian Conservation Objective #1**

Ensure that identified beneficial uses for the water body are adequately protected. Identify the specific beneficial uses for the project area, water quality goals from the Regional Basin Plan, and the manner in which the standards and guidelines will protect the beneficial uses.

The beneficial uses of water in the project area include agriculture, municipal, freshwater, recreation (contact and non-contact), groundwater recharge, wildlife, cold water fishery, rare species habitat, fish spawning, industrial, and hydroelectric power. Proper implementation and effectiveness of identified BMPs would serve to protect identified beneficial uses.

**Table F2. Beneficial Uses in the Motorized Travel Management Analysis Area**

Watershed	HUC 5#	Beneficial Uses												
		Mun	Agr	Pow	Rec1	Rec2	Wrm	Cold	Wild	Rare	Spwn	Grnd	Ind	Fresh
Middle Kern River	1803000104	X	X	X*	X	X		X	X	X (2)	X		X	X

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Lower South Fork Kern River/Kelso	1803000204		X		X	X	X	X	X		X		X	X
Kern River /Clear Creek	1803000301	X	X	X*	X	X		X	X	X (3)	X		X	
Walker Basin/Weaver Creek	1803000302		X											
Cottonwood Creek	1809020601					X			X					
Poso Creek Basin	1803000401	X	X		X	X		X	X	X (4)	X	X	X	X
Upper White River	1803000501	X	X		X	X		X	X	X (5)	X	X		
Upper Deer Creek	1803000502	X	X		X	X		X	X	X (6)	X	X		

(Beneficial uses are municipal use (Mun), agriculture (Agr), hydroelectric power (Pow), contact recreation (Rec1), non-contact recreation (Rec 2), warm water fishery (Wrm), cold water fishery (Cold), wildlife (wild), rare species (Rare), fish spawning (Spwn), groundwater recharge (Grnd), industrial (Ind), and freshwater (Fresh)). \*: These basins are known to have hydroelectric plants even though they are not labeled on the Tulare Lake Basin Plan by the Central Valley Water Quality Control Board as having this beneficial use.

(1): Kern Canyon Slender Salamander, Kern Plateau Slender Salamander, Foothill Yellow-Legged Frog, Western Pond Turtle, Willow Flycatcher, and Kern River Rainbow Trout

(2): Western Pond Turtle, Kern Canyon Slender Salamander, Yellow Blotched Salamander

(3): Western Pond Turtle and Relictual Slender Salamander

(4): Western Pond Turtle and Relictual Slender Salamander

(5): Relictual Slender Salamander

### *Standards and Guidelines Associated with RCO #1*

1. Implement project appropriate Best Management Practices and monitor their effectiveness following protocols outlined in "Investigating Water Quality in the Pacific Southwest Region: Best Management Practices Evaluation Program" (USDA 1992).

### **2.7 Control of Road Drainage**

The objective of this practice is: to minimize the erosive effects of water concentrated by road drainage features; to disperse runoff from disturbances within the road clearing limits; to lessen the sediment yield from disturbances within the roaded areas; and to minimize erosion of the road prism by runoff from road surfaces and up hill areas.

Standard road maintenance practices would be implemented to meet the above objectives which would include re-establishment or removal of roadside berms, operational rolling dips, functional over side drains, water bars, and ditch cleaning. Special attention would be paid to native material low water crossings

to assure road drainage is not adding sediment or additional runoff into stream courses.

### **2.11 Control of Sidecast Material During Construction and Maintenance**

The objective of this practice is to minimize sediment production originating from sidecast material during roadway or in this case trail construction or maintenance. New construction, reconstruction and maintenance on those trails utilized by the project would not create sidecast materials onto the side of the road. All materials would either be consolidated onto the roadbed or moved to a stable location.

### **2.13 Control of Construction and Maintenance Activities Adjacent to SMZs**

The objective of this practice relative to this project is to protect water quality by controlling maintenance actions within and adjacent to any streamside management zone so that the following SMZ functions are not impaired:

- Acting as an effective filter for sediment generated by erosion from bare surfaces, dust drift, and oil traces;
- Maintain riparian habitat and channel stabilizing effects;
- Keep floodplain surface in a resistant, undisturbed condition to slow water velocities and limit erosion by flood flows.

See Table E3 in Appendix E for site-specific routes.

### **2.22 Maintenance of Roads**

The objective of this practice is to maintain roads in a manner which provides for water quality protection by minimizing rutting, failures, incorporation of slash into road fills, side-casting, and blockage of drainage facilities all of which can cause erosion and sedimentation and deteriorating water shed conditions. Standard road maintenance plan would be followed; this would apply to all unauthorized routes listed in Table E3 of Appendix E.

### **2.24 Traffic Control During Wet Periods**

The objective of this BMP is to reduce road surface disturbance and rutting on roads and minimize sediment washing from disturbed road surfaces. To meet this BMP, a season of use is being established for Alternatives 1, 3, and 4. All alternatives would allow vehicles use on most trails and roads from May 15 to November 15. Unauthorized routes could have a season of use from May 25 to November 15.

#### **4.7 Water Quality Monitoring of Off-Highway Vehicle (OHV) Use According to a Developed Plan**

The objective of this BMP is to provide a systematic process to determine when and to what extent OHV use will cause, or is causing adverse effects on water quality. The development of this EIS and the resulting MVUM constitutes compliance with this BMP.

##### **7.1 Watershed Restoration**

The objective of this BMP is to repair degraded watershed conditions and improve water quality and soil stability. This BMP would be implemented through inventory of those routes responsible for impacts to aquatic habitat and/or water quality. A watershed improvement needs inventory (WINI) would be developed for routes in need of restoration.

##### **7.8 Cumulative Off-Site Watershed Effects**

The objective of this practice is to protect beneficial uses of water from the combined effects of multiple management activities when individually these activities may not create unacceptable effects but collectively could result in degraded water quality conditions.

The areas of concern relative to cumulative watershed effects would include increases in runoff, causing erosion, and reduction in groundcover, accelerating erosion and sedimentation to stream courses.

All unauthorized routes currently exist and have already been evaluated for CWE; there would be no net increase in travel routes under all alternatives (except Alternative 20. All alternatives, except Alternative 2, and would serve to reduce or maintain the amount of routes. Watersheds that are currently over the threshold of concern are expected to recover with the prohibition of cross country travel under all alternatives except Alternative 2. See CWE section of the watershed report for the full CWE analysis by alternative.

2. *For waters designated as "Water Quality Limited" (Clean Water Act Section 303(d)), implement appropriate State mandates for the water body, such as Total Maximum Daily Load (TMDL) protocols.*

The Sequoia National Forest currently has no water bodies identified by the State as "Water Quality Limited." The State is considering the proposal of Lake Isabella. The State would make its determination in 2010. No TMDL for this water body is currently proposed. There are not State mandates for this water body.

*3. Conduct project-specific cumulative watershed effects analysis following Regional procedures or other appropriate scientific methodology to meet NEPA requirements.*

Known past and present activities occurring within the project subwatershed include: grazing, wildfire and wildfire suppression, prescribed burning, timber harvest, road construction and reconstruction, road maintenance, large storm flow events, trail construction and maintenance, recreational use, mining, residential development, and private land uses.

Future management activities in the project area include the continuation of livestock grazing, trail maintenance, and road maintenance. Potential future management activities may include timber management and fuel reduction projects. Site specific future projects off of SOPA include the Alta Sierra Fuels Reduction Project, Revised Sawmill Forest Restoration and Fuels Reduction Project, and the Valley View Fuels Reduction Project. If additional activities are proposed within the project area in the future, those activities will be fully analyzed as part of the planning process.

A site-specific cumulative watershed effects analysis was completed for this project. Refer to the cumulative effects sections for alternatives, under the “Environmental Consequences” section of the watershed resource report for a more detailed description.

*4. Implement soil quality standards for soil loss, detrimental soil compaction, and organic matter retention to minimize the risk of sediment delivery to aquatic systems from management activities. Ensure that management-related activities, including roads, skid trails, landings, trails, or other activities, do not result in detrimental soil compaction on more than 5 percent of the RCA or 10 percent of the area in CARs. Measure compaction using the procedures outlined in Appendix F of the FEIS.*

The soil quality standards are to be used for areas dedicated to growing vegetation. They are not applied to lands with other dedicated uses, such as developed campgrounds, administrative facilities or in this case, the actual land surface authorized for travel by the public using various kinds of vehicles. Prohibition of cross-country travel would prevent new areas from being detrimentally affected.

*5. Identify existing and potential sources of sediment delivery to aquatic systems. Implement preventive and restoration measures, such as modifying management activities, increasing ground cover, reducing the extent of compacted surfaces, or revegetating disturbed sites to reduce or eliminate sediment delivery from these sources to aquatic systems.*

Unauthorized routes listed in Table F4 are identified as existing and potential sources for sediment delivery. The preceding BMP section describes the preventive measures to reduce or eliminate sediment delivery from these routes to aquatic systems. There are no routes proposed to cross meadows in the project area.

**Table F4. Unauthorized Routes, With Potential for Sediment Delivery by Alternative**

Alternative 1	Alternative 3	Alternative 4	Modified Alternative 3
U00017, U00129, U00130, U01000, U01001, U01020, U01032, U01033, U01035, U01036, U01051, U01055, U01095, U01096, U01097, U01111, U01113, U01130, U01135, U01145, U01149	U00016, U00017, U00130, U01000, U01001, U01029, U01032, U01033, U01035, U01036, U01048, U01051, U01055, U01093, U01095, U01096, U01097, U01111, U01113, U01118, U01120, U01127, U01130, U01135, U01145, U01149, U01155	U00017, U01000, U01001, U01111	U00016, U00017, U00130, U01000, U01001, U01029, U01032, U01033, U01035, U01036, U01048, U01051, U01055, U01093, U01111, U01113, U01118, U01120, U01127, U01130, U01135, U01145, U01149, U01155

6. *Evaluate new proposed management activities within CARs and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the AMS goals for the landscape. Ensure that appropriate mitigation measures are implemented to (1) minimize the risk of activity-related sediment entering aquatic systems, and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species.*

There are no CARs within or affected by the project area. This report provides documentation of the evaluation of effects to the watershed and the project's consistency with riparian conservation objectives.

7. *Identify existing uses and activities in CARs and RCAs during landscape analysis. Evaluate existing management activities to determine consistency with RCOs during project-level analysis. Develop and implement actions needed for consistency with RCOs.*

The project includes a landscape analysis. However, the alternatives are consistent with the RCOs as discussed in this document.

8. *Ensure that management activities do not adversely affect water temperatures necessary for local aquatic and riparian-dependent species assemblages.*

This project does not include the creation of any new routes. Users created routes have the potential to adversely affect water temperatures necessary for local aquatic and riparian-dependent resources. One of the objectives of this project is to bring unauthorized travel routes in line with BMP practices implemented on system routes or eliminate their use.

9. *Limit pesticide applications to cases where project level analysis indicates that pesticide applications are consistent with riparian conservation objectives. Prohibit application of pesticides to livestock in RCAs and CARs.*

No pesticide use is proposed under this project, so this requirement is not applicable.

10. *Avoid pesticide applications within 500 feet of known occupied sites for the California red-legged frog, Cascade frog, Yosemite toad, foothill yellow-legged frog, mountain yellow-legged frog, and northern leopard frog unless environmental analysis documents that pesticides are needed to restore or enhance habitat for these amphibian species.*

No pesticide use is proposed under this project, so this requirement is not applicable.

*11. Prohibit storage of fuels and other toxic materials within RCAs and CARs except at designated administrative sites. Prohibit refueling within RCAs and CARs unless there are no other alternatives. Ensure that spill plans are reviewed and up-to-date.*

No fuels or other toxic materials are proposed for storage under the motorized travel management project. Therefore this standard and guideline is not applicable.

RIPARIAN CONSERVATION OBJECTIVE #2: *Maintain or restore: (1) the geomorphic and biological characteristics of special aquatic features, including lakes, meadows, bogs, fens, wetlands, vernal pools, springs; (2) streams, including in stream flows; and (3) hydrologic connectivity both within and between watersheds to provide for the habitat needs of aquatic-dependent species.*

*Standards and Guidelines Associated with RCO #2:*

- 1. Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions where necessary to restore connectivity.*

Table F4 lists unauthorized routes that intercept, divert, or disrupt natural surface water flow paths. This project does not include the creation of any new routes. Users created routes have the potential to adversely affect water temperatures necessary for local aquatic and riparian-dependent resources. One of the objectives of this project is to bring unauthorized travel routes in line with BMP practices implemented on system routes or eliminate their use.

- 2. Ensure that culverts or other stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species. Locate water drafting sites to avoid adverse effects to in stream flows and depletion of pool habitat. Where possible, maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows, wetlands, and other special aquatic features.*

Table F5 lists the unauthorized routes that have been identified as having stream crossings in need of repair or maintenance in order to bring them up to forest standard and guidelines.

**Table F-5. Unauthorized Routes in Need of Repair by Alternative**

Routes	Included in:			
	Alt 1	Alt 3	Alt 4	Mod. 3
U00016		X		X
U00129	X			
U01051	X	X		X
U01130	X	X		X
U01132	X	X		X
U01155		X		X

Prior to activities that could affect streams, determine if relevant geomorphic characteristics, including bank angle, channel bank stability, bank full width-to-depth ratio, embeddedness, channel-floodplain connectivity, residual pool depth, and channel substrate are within the range of natural variability for the reference stream type as described in the Pacific Southwest Region Stream Condition Inventory protocol. If properties are outside the range of natural variability, implement restoration actions that will result in an upward trend.

There are ten SCI sites within the motorized Travel Management analysis area. All of these sites were found to be within the range of natural variability; no restoration is needed. For a full description of these sites refer to the Affected Environment section and Appendix A of this report.

3. *Prevent disturbance to meadow-associated streambanks and natural lake and pond shorelines caused by resource activities (for example, livestock, off-highway vehicles, and dispersed recreation) from exceeding 20 percent of stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard does not apply to developed recreation sites and designated off-highway vehicle routes.*

This project applies to designating off-highway vehicle routes, so this standard and guideline does not apply.

4. *In stream reaches occupied by, or identified as “essential habitat” in the conservation assessment for, the Lahonton and Paiute cutthroat trout and the Little Kern golden trout, limit streambank disturbance from livestock to 10 percent of the occupied or “essential habitat” stream reach.*

*(Conservation assessments are described in the record of decision.)  
Cooperate with State and Federal agencies to develop streambank disturbance standards for threatened, endangered, and sensitive species. Use the regional streambank assessment protocol. Implement corrective action where disturbance limits have been exceeded.*

The motorized travel management analysis area, which includes the Greenhorn Mountains, Breckenridge, and Lake Isabella, is not identified as “essential habitat” in the conservation assessment for the Lahonton and Paiute cutthroat trout or the Little Kern golden trout, so this standard and guide is not applicable.

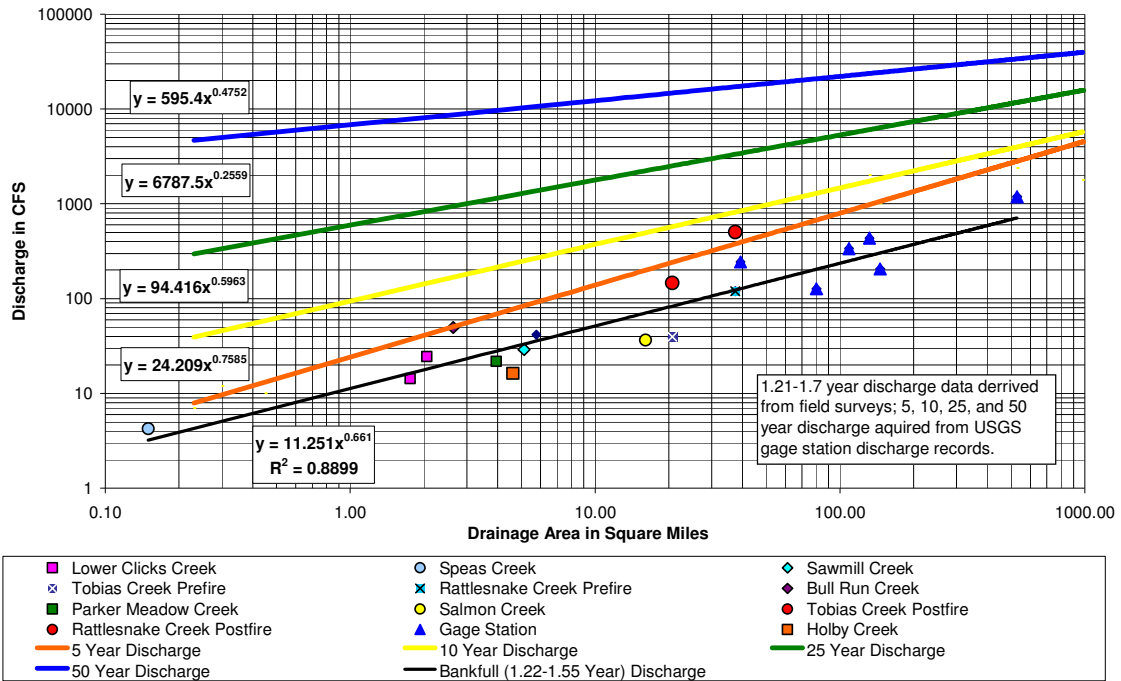
5. *Determine if the age class, structural diversity, composition, and cover of riparian vegetation are within the range of natural variability for the vegetative community. If outside the range of natural variability, implement restoration actions that will result in an upward trend. Actions could include restoration of aspen or other riparian vegetation where conifer encroachment is identified as a problem.*

Riparian vegetation is within the range of natural variability except where unauthorized routes have been established. With the closure of some or all unauthorized routes with the prohibition of cross-country travel, these areas will recover over time, as will riparian vegetation.

6. *Cooperate with Federal, Tribal, State and local governments to secure in stream flows needed to maintain, recover, and restore riparian resources, channel conditions, and aquatic habitat. Maintain in stream flows to protect aquatic systems to which species are uniquely adapted. Minimize the effects of stream diversions or other flow modifications from hydroelectric projects on threatened, endangered, and sensitive species and essential habitat as identified in conservation assessments.  
(Conservation assessments are described in the record of decision.)*

This project is not expected to alter flow rates. If needed, the following regional curves have been developed from years of field work to establish bankfull discharge by watershed area for the Kern River physiographic area. This includes all streams within the analysis area.

Figure 3. Local Kern River Hydrologic Physographic Discharge Relationships for Bankfull, 5-Year, 10-Year, 25-Year and 50-Year Recurrence Interval



7. *During relicensing of Federal Energy Regulatory Commission (FERC) hydroelectric projects, evaluate modifications by the project to the natural hydrograph. Determine and recommend in stream flow requirements and habitat conditions that maintain, enhance, or restore all life stages of native aquatic species, and that maintain or restore riparian resources, channel integrity, and fish passage. Provide written and timely license conditions to FERC. Coordinate relicensing projects with the appropriate State and Federal agencies.*

This project is not part of a relicensing effort under FERC, so this requirement is not applicable.

8. *For exempt hydroelectric facilities on national forest lands, ensure that special use permit language provides adequate in stream flow requirements to maintain, restore, or recover favorable ecological conditions for local riparian- and aquatic-dependent species.*

This project is not part of an exempt hydroelectric facility, so this requirement is not applicable.

Riparian Conservation Objective #3: Ensure a renewable supply of large down logs that:

*(1) can reach the stream channel and (2) provide suitable habitat within and adjacent to the RCA.*

*Standards and Guidelines Associated with RCO #3:*

- 1. Determine if the level of coarse large woody debris (CWD) is within the range of natural conditions in terms of frequency and distribution and is sufficient to sustain stream channel physical complexity and stability. If CWD levels are deficient, ensure proposed management activities, when appropriate, contribute to the recruitment of CWD. Burning prescriptions should be designed to retain CWD; however short-term reductions below either the soil quality standards or standards in species management plans may result from prescribed burning within strategically placed treatment areas or the urban wildland intermix zone.*

This project includes trail and road systems which do not have coarse woody debris on them when properly maintained. Roads and trails will be properly water barred or will have rolling dips installed in order to manage water flow on route facilities. See Table E1 in Appendix E for unauthorized routes.

- 2. In plantations within RCAs or CARs, determine if the plantation will be able to provide a sufficient supply of standing trees suitable for large wood recruitment. If there is not sufficient wood for recruitment, develop a restoration program that will provide standing trees of the appropriate size in the RCA or CAR. In developing the restoration program, ensure that proposed activities are consistent with the riparian conservation objectives.*

The motorized travel management process does not include any management dealing with plantations so this requirement is not applicable.

Riparian Conservation Objective #4: *Ensure that management activities, including fuels reduction actions, within RCAs and CARs enhance or maintain physical and biological characteristics associated with aquatic- and riparian-dependent species.*

*Standards and Guidelines Associated with RCO #4:*

- 1. Within CARs, in occupied habitat or “essential habitat” as identified in conservation assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground disturbing equipment is used.*

This project does not propose use of prescribed fire. Therefore, this standard and guide is not applicable.

2. *Use screening devices for water drafting pumps. (Fire suppression activities are exempt). Use pumps with low entry velocity to minimize removal of aquatic species, including juvenile fish, amphibian egg masses and tadpoles, from aquatic habitats.*

This requirement is not applicable because no water drafting is proposed.

3. *Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. In burn plans for project areas that include, or are adjacent to RCAs, identify mitigation measures to minimize the spread of fire into riparian vegetation. In determining which mitigation measures to adopt, weigh the potential harm of mitigation measures, for example fire lines, against the risks and benefits of prescribed fire entering riparian vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management actions could be damaging to habitat or long-term function of the riparian community.*

No prescribed fire treatments are being proposed in this project, so this standard and guide is not applicable.

4. *Where catastrophic events, such as drought, fire, flooding, wind, or insect damage, result in degraded stand conditions, allow salvage harvesting and fuelwood cutting in RCAs and CARs consistent with the assessment of the RCOs for the area. Ensure that present and future woody debris needs are met.*

This project does not propose salvage harvesting or firewood cutting, so this standard and guideline is not applicable.

5. *Post-wildfire management activities in RCAs and CARs should emphasize enhancing native vegetation cover, stabilizing channels by non-structural means, minimizing adverse effects from the existing road network, and carrying out activities identified in landscape analyses. Post-wildfire operations shall minimize the exposure of bare soil.*

This requirement is not applicable at this time because this project is not a post-wildfire management activity.

6. *Allow mechanical ground disturbing fuels treatments, hazard tree removal, salvage harvest, or commercial fuelwood cutting within RCAs or CARs when the activity is consistent with RCOs. Projects providing for public*

*health and safety, such as the felling of hazard trees or fuel reduction activities within the defense zone of the urban wildland intermix zones, are permitted. Utilize low ground pressure equipment, helicopters, over the snow logging, or other non-ground disturbing actions to operate off of existing roads when needed to achieve RCOs. Prior to removing trees within RCAs or CARs, determine if existing down wood is sufficient to sustain the stream channel physical complexity and stability required to maintain or enhance the aquatic- and riparian-dependent community. Ensure that existing roads, landings, and skid trails meet Best Management Practices. Minimize the construction of new skid trails or roads for access into RCAs for fuel treatments, salvage harvest, commercial fuelwood cutting, or hazard tree removal.*

No mechanical treatments are proposed. Therefore this standard and guide is not applicable.

7. *Prior to implementing ground disturbing activities within suitable habitat for the California red-legged frog, Cascade frog, Yosemite toad, foothill yellow-legged frog, mountain yellow-legged frog, and northern leopard frog:*

- *Assess and document aquatic conditions using the Pacific Southwest Region Stream Condition Inventory protocol, and*
- *Develop mitigation measures (such as timing of activities, limited operating seasons, avoidance) to avoid impacting these species.*

There are ten SCI sites within the motorized Travel Management analysis area. All of these sites were found to be within the range of natural variability, no restoration is needed. For a full description of these sites refer to the Affected Environment section and Appendix A.

8. *During fire suppression activities, consider impacts to aquatic- and riparian-dependent resources. Where possible, locate incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities outside of RCAs or CARs. During presuppression planning, determine guidelines for suppression activities, including avoidance of potential adverse effects to aquatic- and riparian-dependent species as a goal.*

This requirement is not applicable because no fire suppression activities are proposed.

9. *Assess roads, trails, OHV trails and staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic- and riparian-dependent species. At the project level, determine if use is consistent with other standards and guidelines or desired conditions. If inconsistent, modify the use through redesign, rehabilitation, relocation, closure, or re-directing the use to a more suitable location.*

The analysis performed for this NEPA document meets the requirements of this RCO. Field data has been collected and ranked using protocol recommended by the State of California. OHV evaluation forms (using the green, yellow, red evaluation system) and BMP effectiveness forms E8 (Road Surface, Drainage, and Slope Protection), E9 (Stream Crossings), and E11 (Control of Sidecast Material) have been used to document field conditions. These forms documented site specific locations where water quality and/or riparian areas may be affected by OHV trails and staging areas as well as by roads. The results of this field data is listed by watershed in the Affected Environment or BMP section.

10. *Require solid waste facilities (such as waste rock and tailings dumps) to be located outside riparian conservation areas. Where no reasonable alternative to locating these mine waste facilities in riparian conservation areas exists, locate and design them with the goal of ensuring mine waste facility stability and preventing potentially toxic releases. Ensure the following measures are applied: (1) analyze mine waste material using the best conventional sampling methods and analytical techniques to determine its chemical and physical stability characteristics; (2) locate and design mine waste facilities using best conventional techniques to ensure mass stability and prevent acid or toxic material releases; (3) ensure that reclamation and reclamation bonds are sufficient to ensure long-term chemical and physical stability of mine waste facilities; and (4) monitor mine waste facilities after operations have ceased to ensure that chemical and physical conditions are consistent with aquatic management strategy goals.*

This requirement is not applicable because there is no mining proposed in this project.

11. *Allow saleable mineral activities, such as sand and gravel mining and extraction, in riparian conservation areas only if measures that protect the integrity of aquatic, riparian meadow ecosystems are implemented*

This requirement is not applicable because there are no mineral sales proposed in this project.

**RIPARIAN CONSERVATION OBJECTIVE #5:** *Preserve, restore, or enhance special aquatic features, such as meadows, lakes, ponds, bogs, fens, and wetlands, to provide the ecological conditions and processes needed to recover or enhance the viability of species that rely on these areas.*

*Standards and Guidelines Associated with RCO #5:*

1. *Assess the hydrologic function of meadow habitats and other special aquatic features during range management analysis. Ensure that characteristics of special features are, at a minimum, at Proper Functioning Condition, as defined in the appropriate Technical Reports: (1) "Process for Assessing PFC" TR 1737-9 (1993), "PFC for Lotic Areas" USDI TR 1737-15 (1998) or (2) "PFC for Lentic Riparian-Wetland Areas" USDI TR 1737-11 (1994).*

This project does not propose grazing, therefore this standard and guide is not applicable.

2. *Prohibit or mitigate ground-disturbing activities that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining bog and fen ecosystems and plant species that depend on these ecosystems. During project analysis, survey, map, and develop measures to protect bogs and fens from such activities as trampling by livestock, pack stock, humans, and wheeled vehicles. Criteria for defining bogs and fens include, but are not limited to, presence of: (1) sphagnum moss (*Spagnum* spp.), (2) mosses belonging to the genus *Meessia*, and (3) sundew (*Drosera* spp.). Complete initial plant inventories of bogs and fens within active grazing allotments prior to re-issuing permits.*

This project does not propose any new trails being created. All routes currently exist and are being considered for addition into the NFTS. Establishment of the above BMPs and routine maintenance would be sufficient in preventing these current routes from having any adverse effects.

3. *Locate new facilities for gathering livestock and pack stock outside of meadows and riparian conservation areas. During landscape analysis, evaluate and consider relocating existing livestock facilities outside of meadows and riparian areas (RCA42). Prior to re-issuing grazing permits, assess the compatibility of livestock management facilities located in*

*riparian conservation areas with riparian conservation objectives. Under season-long grazing:*

- *For meadows in early seral status: limit livestock utilization of grass and grass-like plants to 30 percent (or minimum 6-inch stubble height).*
- *For meadows in late seral status: limit livestock utilization of grass and grass-like plants to a maximum of 40 percent (or minimum 4-inch stubble height).*

This project does not include livestock. Therefore this requirement is not applicable.

4. *Determine ecological status on all key areas monitored for grazing utilization prior to establishing utilization levels. Use Regional ecological scorecards and range plant list in regional range handbooks to determine ecological status. Analyze meadow ecological status every 3 to 5 years. If meadow ecological status is determined to be moving in a downward trend, modify or suspend grazing. Include ecological status data in a spatially explicit Geographical Information System database.*

This project does not include livestock. Therefore this requirement is not applicable.

5. *Under intensive grazing systems (such as rest-rotation and deferred rotation) where meadows are receiving a period of rest, utilization levels can be higher than the levels described above if the meadow is maintained in late seral status and meadow-associated species are not being impacted. Degraded meadows (such as those in early seral status with greater than 10 percent of the meadow area in bare soil and active erosion) require total rest from grazing until they have recovered and have moved to mid- or late seral status.*

This project does not include livestock. Therefore this requirement is not applicable.

6. *The grazing standards specified in standard and guideline FW-G04B (above) may be modified to assess the effects of grazing intensity and frequency on willow flycatcher site occupancy or demography. Such modifications must be part of a formal management study developed in cooperation with the Pacific Southwest Research Station.*

This project does not include livestock. Therefore this requirement is not applicable.

7. *Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs (including willow and aspen) and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation. Herd sheep away from woody riparian vegetation at all times.*

This project does not include livestock. Therefore this requirement is not applicable.

**RIPARIAN CONSERVATION OBJECTIVE #6:** *Identify and implement restoration actions to maintain, restore or enhance water quality and maintain, restore, or enhance habitat for riparian and aquatic species.*

1. *Recommend and establish priorities for restoration practices in: (1) areas with compaction in excess of soil quality standards, (2) areas with lowered water tables, or (3) areas that are either actively down cutting or that have historic gullies. Identify other management practices, for example, road building, recreational use, grazing, and timber harvests, which may be contributing to the observed degradation.*

Establishment of the listed BMPs and routine maintenance of unauthorized routes being added to the NFTS, as well as the prohibition of cross-country travel would be sufficient to allow for revegetation and improved soil quality in areas affected by the unauthorized routes.

2. *Reclaim abandoned mine sites that are degrading aquatic riparian and meadow ecosystems. First priority is to reclaim sites with hazardous or toxic substances located within CARs and RCAs.*

This project does not include mine reclamation so this requirement is not applicable.

## **EHR Ratings**

The following table displays the EHR ratings for each unauthorized route.

**Unauthorized Routes in Miles by R5 Soil Erosion Hazard Rating (EHR). Soil EHR ratings are: very high, high, moderate, and low.**

Route Number	Miles by EHR Rating				Grand Total
	Very High	High	Moderate	Low	
22S05		3.3	1.6	1.2	6.1
22S12			2.2		2.2
22S12B			0.5		0.5
22S51		0.4	0.7	0	1.1
23S08			2.3		2.3

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23S08B			0.2		0.2
23S10			0.1		0.1
23S10A			0.7		0.7
23S13			2.8		2.8
23S16	0.9	10	2.7	0.3	13.9
23S19		0.2			0.2
23S20			0	0	0.0
23S21			0.7		0.7
23S32		3.2			3.2
23S32A		0.8			0.8
23S34			0.3		0.3
23S34A			0		0
23S36			1.6		1.6
23S41			4.5		4.5
23S41A			0.3		0.3
23S41B			0.3		0.3
23S41D			0.2		0.2
23S42				0.1	0.1
23S43				0.1	0.1
23S44		0.1			0.1
23S45		0.2			0.2
23S46		0.1			0.1
23S53		3.7			3.7
23S53A		0.6			0.6
23S73A		0.4	0.5		0.9
24S02	0.2	2.3	0.5		3.0
24S03		1.5			1.5
24S07	4	3.3			7.3
24S07A	0.1				0.1
24S07B	0.3	0.1			0.4
24S08		0.1	1.1		1.2
24S09		0.3			0.3
24S10		0.3	0.4		0.7
24S12			0.2		0.2
24S12D			0.1		0.1
24S15		5.6	1.2		6.8
24S15A		0.5			0.5
24S15B		0.5			0.5
24S16			0.4		0.4
24S18			0.3		0.3
24S19		0	0.2		0.2
24S20			0.6		0.6
24S21			0.3		0.3
24S24		1.5	1.8		3.3
24S24A		0.4	0.1		0.5
24S24B		0.3	0.1		0.4
24S25		2	0.3		2.3
24S25A		0.3			0.3

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24S25B		1.0			1.0
24S28		0.1	0.4		0.5
24S31		1.3	0.3		1.6
24S34		1.4			1.4
24S34A		0.4			0.4
24S35		5.8	2.3		8.1
24S35A		0.8			0.8
24S35C		1.6			1.6
24S37		0.3	0.8		1.1
24S37A		0.6			0.6
24S39			0.4		0.4
24S45		0.1	0.4		0.5
24S45A			0.2		0.2
24S46		1.0	0.2		1.2
24S46A		0.4			0.4
24S47		0.2			0.2
24S47A		0.1			0.1
24S48A		0			0
24S48B		0.1			0.1
24S49			0.3		0.3
24S50		1.5	4.1		5.6
24S50A			0.4		0.4
24S50C		1.2	1.5		2.7
24S51			0.2		0.2
24S51A			0.1		0.1
24S52		0.1			0.1
24S53			0.1		0.1
24S54		0	0.1		0.1
24S54A			0		0
24S55			0.1		0.1
24S55A			0		0
24S57			0		0
24S57A			0		0
24S57B			0		0
24S77		1.0	0.4		1.4
24S77A		0.3	0.3		0.6
24S77B		0.4			0.4
24S80	0.3	0.6			0.9
24S80A	0.3				0.3
24S80B		0.1			0.1
24S80C		0.4			0.4
24S82			0.1		0.1
24S83		1.0	1.5		2.5
24S83A			0.8		0.8
24S83B		0.3			0.3
24S84			0.2		0.2
24S86			0.6		0.6
24S88		0.9			0.9

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24S89		1.2			1.2
25S02	0.4	0.3	1.2		1.9
25S04	0.4	1.6	7.5		9.5
25S04A			1.1		1.1
25S04D			0.7		0.7
25S04E		0.3	0.1		0.4
25S04G		0.2			0.2
25S04H		0	0.3		0.3
25S06		0.2			0.2
25S07			0		0
25S11		0.4	3.2		3.6
25S11A		0.2	0.3		0.5
25S12			0.1		0.1
25S14			1		1.0
25S15	0.2	10	4.4		14.6
25S15B			0.2		0.2
25S15C		1.2			1.2
25S15D			0.3		0.3
25S15E		0.1			0.1
25S16		3.3	1.2		4.5
25S17		2.9			2.9
25S18			0		0
25S18A		0.1	0.2		0.3
25S19		1.1	0.1		1.2
25S20		0.5			0.5
25S21	1.2	2.3	0.7		4.2
25S25		0.5			0.5
25S26		1.2			1.2
25S27		1.0	0.2		1.2
25S27A		0.4			0.4
25S28		1.0	0.3		1.3
25S28A			0.4		0.4
25S28B		0.4	0		0.4
25S28C		0.1			0.1
25S29		0.2			0.2
25S30			0.5		0.5
25S31		0.9			0.9
25S32			0.2		0.2
25S33			0.6		0.6
25S36		0.8	0.5		1.3
25S37		0.6			0.6
25S37A		0.4			0.4
25S38		1.0			1.0
25S38A		0.5			0.5
25S39		0.5	1.0		1.5
25S40		0.8			0.8
25S40A		0.1			0.1
25S41				0.4	0.4

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25S42				0	0
25S43				0.2	0.2
25S44				0.1	0.1
25S44A				0.1	0.1
25S45		1.4			1.4
25S46		0.1			0.1
25S47		0.1			0.1
25S49		0.4			0.4
25S49A		0.2			0.2
26S01		1.3			1.3
26S01A		0.7			0.7
26S01B		0.1			0.1
26S02				0.3	0.3
26S02A				0.1	0.1
26S02B				0.1	0.1
26S03	0.9	1.6	1.4		3.9
26S04		2.6	0.8		3.4
26S04A		0.1	0.3		0.4
26S04C		0.7	0		0.7
26S04D		1			1
26S05	0.1	4.5	3.4		8
26S06	4.1	4.3			8.4
26S06A		0			0
26S06B		0			0
26S07		1.5	0.4		1.9
26S07A		0.5			0.5
26S08	0	0.4	0.7		1.1
26S09		0.1	0.7		0.8
26S09A			0		0
26S10				0.9	0.9
26S10B				0.1	0.1
26S11		0	0.3		0.3
26S12		1.8			1.8
26S13		0.8			0.8
26S13A		0.3			0.3
26S13B		0			0
26S14		0.4			0.4
26S15				0.2	0.2
26S15A				0.1	0.1
26S15B				0.1	0.1
26S16			2.6		2.6
26S17				0.2	0.2
26S17A				0.5	0.5
26S17B				0.2	0.2
26S18		1.2			1.2
26S18A		0.3			0.3
26S19			2.6		2.6
26S19A			0.2		0.2

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26S20		3.2			3.2
26S20A		0.8			0.8
26S20B		0.7			0.7
26S21				0.2	0.2
26S21A				0.2	0.2
26S22				0.5	0.5
26S22A				0	0
26S22B				0.2	0.2
26S23			1.5		1.5
26S23A			1.0		1.0
26S24		1.1	0.6		1.7
26S24A		0	0.5		0.5
26S25		1.9	0.5		2.4
26S25A			0.3		0.3
26S25B		0.2			0.2
26S25C		0.1			0.1
26S26				0.6	0.6
26S27		0.4			0.4
26S27A		0.1			0.1
26S28		0.8			0.8
26S28A		0.2			0.2
26S29		0.8			0.8
26S29A		0.2			0.2
26S29B		0.4			0.4
26S30	0.1	0.8			0.9
26S31				0.1	0.1
26S31A				0.3	0.3
26S31B				0.4	0.4
26S31C				0.1	0.1
26S32				0.4	0.4
26S32A				0.3	0.3
26S33	0.5	0.1	0.4		1.0
26S34				1.7	1.7
26S34A				0.1	0.1
26S34B				1.7	1.7
26S34C				1.8	1.8
26S34C-1				0.5	0.5
26S35				0	0
26S36				0.9	0.9
26S36A				4	4
26S36A-1				0.3	0.3
26S36B				0.7	0.7
26S36C				0.3	0.3
26S36C-1				0.2	0.2
26S37	1.2	4.8			6.0
26S37A		0.3			0.3
26S37G		0.2			0.2
26S37H		0.2			0.2

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26S37J		0.3			0.3
26S39				0.1	0.1
26S40				3.4	3.4
26S40B				0.2	0.2
26S40C				0.1	0.1
26S41				2	2
26S41-1				0.3	0.3
26S41A				0.5	0.5
26S41A-1				0.2	0.2
26S41B				0.1	0.1
26S41C				0.1	0.1
26S41D				0.4	0.4
26S41E				0.4	0.4
26S41F				0.3	0.3
26S41F-1				0.1	0.1
26S41F-2				0	0
26S41G				0.1	0.1
26S42				0.2	0.2
26S42A				0.1	0.1
26S43				1.2	1.2
26S43A				0.1	0.1
26S43B				0.3	0.3
26S43C				0.1	0.1
26S43D				0	0
26S43E				0.1	0.1
26S43F				0	0
26S43N-1				0.1	0.1
26S43N-2				0.2	0.2
26S43N-3				0.2	0.2
26S43N-4				0.1	0.1
26S43NA				0.6	0.6
26S43NB				0.1	0.1
26S43NC				0.2	0.2
26S43ND				0.5	0.5
26S43ND-1				0.1	0.1
26S43ND-2				0.2	0.2
26S44N				0.5	0.5
26S44NA				0.1	0.1
26S44NB				0.1	0.1
26S44S				0.5	0.5
26S44SA				0.2	0.2
26S44SB				0.2	0.2
26S44SC				0.1	0.1
26S44SD				0	0
26S44SE				0.1	0.1
26S44SF				0	0
26S45				1.1	1.1
26S45A				0.3	0.3

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26S45B				0.4	0.4
26S45C				0.2	0.2
26S45D				0	0
26S45E				0.2	0.2
26S45F				0.2	0.2
26S45G				0.7	0.7
26S45H				0.4	0.4
26S45I				0.1	0.1
26S45J				0.3	0.3
26S45K				0.3	0.3
26S46				0.6	0.6
26S46A				0.1	0.1
26S46B				0.2	0.2
26S46C				0.2	0.2
26S46D				0.1	0.1
26S46E				0.1	0.1
26S47				0.6	0.6
26S47A				0.3	0.3
26S47B				0.2	0.2
26S47C				0.1	0.1
26S48				0.6	0.6
26S48A				0.1	0.1
26S48B				0.1	0.1
26S48C				0.2	0.2
26S48D				0.1	0.1
26S48E				0.1	0.1
26S50				1.1	1.1
26S50A				0.2	0.2
26S50B				0	0
26S51				0.8	0.8
27S01	0.2				0.2
27S01A	0.3	0.3			0.6
27S02	0.4	10.2	6.4		17
27S02A			0.1		0.1
27S02B	0	0	0.8		0.8
27S02C			0.5		0.5
27S02D		0.3			0.3
27S02E		0.4			0.4
27S02F		0.3	0.2		0.5
27S02G		0.2	0.3		0.5
27S03	0.1				0.1
27S04		0.2			0.2
27S05		0.4			0.4
27S05-A		0.1			0.1
27S06		0.6			0.6
27S07		0.1			0.1
27S08		0.8			0.8
27S09		0.3			0.3

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27S10		0			0
27S12		0.4			0.4
27S13	0.1	2.1			2.2
27S17		0.2			0.2
27S20			0.9		0.9
27S29		0.3			0.3
27S30		1.7			1.7
27S30A		1.1			1.1
27S33		0.9			0.9
27S37		0.9			0.9
27S37A		0.4			0.4
28S04		0.3	1.7		2.0
28S04A			0.6		0.6
28S05		0.2	0.2		0.4
28S06	0.7	5	1.3		7.0
28S07	0.1	3.7			3.8
28S07A		0.3			0.3
28S07C		0.1			0.1
28S07D		0.2			0.2
28S07E		0.2			0.2
28S07F		0.2			0.2
28S08	0.1		3.6		3.7
28S08A		0	1.0		1.0
28S09	0.1	8.4	3.1	0.6	12.2
28S09A		0.3			0.3
28S10		1.6			1.6
28S11		0.2			0.2
28S12		0.1			0.1
28S14		0.3	1.0		1.3
28S15			0.3		0.3
28S16	0.8				0.8
28S17		0.4	2.3	0.1	2.8
28S17A		0.5			0.5
28S17B		1.1	0.2		1.3
28S18		2.1	0.7		2.8
28S18A		0.3			0.3
28S18B		0.4	0.4		0.8
28S19	0.1	0.5	0.8		1.4
28S21		0.2			0.2
28S22			0.9		0.9
28S23		1.1	0.5		1.6
28S24		1.2	4.5	0.9	6.6
28S24B			0.2	0.1	0.3
28S24C			0.9	0.1	1.0
28S24D			0.3		0.3
28S25			0.3		0.3
28S26			0.3		0.3
28S27		0.1	3.7		3.8

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28S27A			1.1		1.1
28S28			0.2		0.2
28S29		0.5			0.5
28S30		0.5	0		0.5
28S33		0.6			0.6
28S34		0.4			0.4
28S37	1.0	0.1			1.1
28S37A	0	0.1			0.1
28S40		0.1	2.1		2.2
28S40A			0.2		0.2
28S43		1.1	1.0		2.1
28S44		0.6	2.7		3.3
28S44A			0.5		0.5
28S47		2.5			2.5
28S47A		0.4			0.4
28S47B		1.1			1.1
28S48B		0.1			0.1
28S62	4.2	1.2	0.4		5.8
28S62B	0.1	0			0.1
28S62C	0.1				0.1
28S67		0.6			0.6
28S67A		0.2			0.2
28S68		1.0			1.0
28S74		0			0
28S81		0.7			0.7
29S01		0	1.3		1.3
29S02	2.3	1.7	2.4		6.4
29S03		0.4	2		2.4
29S03B		0.1	0.3		0.4
29S04	1.1	0.8	0.8		2.7
29S05			1.3		1.3
29S07			0.6		0.6
29S19			0.8		0.8
30 E 31		6.7			6.7
30 E 51		0.1	0.9		1.0
31 E 20		0.9			0.9
31 E 23	5.4				5.4
31 E 60		1.6	0.4		2.0
31 E 67		0.8			0.8
31 E 69		2.3			2.3
31 E 75		0.4			0.4
31 E 76	4.2	9.3			13.5
31 E 77	6.6	0.5	4.9		12.0
31 E 78	0.7	1.1			1.8
31 E 79	0.5	6.9			7.4
31 E 80			3.2		3.2
31 E 81		0.5			0.5
31 E 83		0.8			0.8

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31 E 84	0.6	1.9			2.5
32 E 33CM	0.1	3.6		0.3	4.0
32 E 35		0.3	0.4		0.7
32 E 34CM	2.5	2.3			4.8
32 E 36		5.7	7		12.7
32 E 38		1.2			1.2
32 E 40	1.1	2.2	1.1		4.4
32 E 43	1.7	1.6	1.3		4.6
32 E 47	0.9	0	3.4		4.3
32 E 48	1.3	2			3.3
32 E 49	0.8				0.8
32 E 50	0.6	7.1			7.7
32 E 51		1.3			1.3
32 E 52	1.9	3.2			5.1
32 E 53	1.6	1.0	1.6		4.2
32 E 57	1.5	0.1	2.3		3.9
33 E 24	3.6	2.3	6.1	6.9	18.9
33 E 25			0.3		0.3
33 E 27	0.1		4.5		4.6
33 E 31		0		4.8	4.8
33 E 33	1.2	5.8	0.8		7.8
33 E 35		1.0	0.4	1.0	2.4
33 E 37	0.1	1.5	2.5		4.1
33 E 46		3.6	2.5	1.3	7.4
33 E 50	1.7	2.7		1.0	5.4
33 E 66	0.3	3.4	4.4		8.1
33 E 69		2.7	1.7		4.4
34 E 16	0.4	2.1	0.7		3.2
34 E 19			0		0
34 E 25	0.5	1.8	0.9		3.2
34 E 32		0.5	2.7		3.2
34 E 35		4.3	1		5.3
34 E 41	0.8	2.7	2		5.5
34 E 42	1.3	4.9	0.5		6.7
34 E 43			11.4	0.1	11.5
34 E 44		2.1	2.7		4.8
34 E 45			5.4		5.4
34 E 46		0.3	0.1	1.1	1.5
34 E 47		0.4	0.6		1.0
34 E 49		1.7	2.5	0.1	4.3
Auxiliary				0.5	0.5
Aux service				0.1	0.1
Barlow Drive				0.2	0.2
Boulder				0.4	0.4
Boulder unauthorized				0	0
Boulder water tank				0.4	0.4
Camp 9 Parking				0.6	0.6

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CO114		1.0	1.3		2.3
CO146		1.1			1.1
CO214		12			12
CO218		3.5	0.7		4.2
CO501	0.2	4.9	3.9		9.0
CO521				2.4	2.4
CO589	0.9	0.9	3		4.8
CO-KCM114				0.2	0.2
CO-KMC421		1.4			1.4
CO-TCM99		2.1	1.0	1.8	4.9
County Yard				0.1	0.1
Dump Road				0	0
Evans Road				0.1	0.1
French Gulch Water				0.4	0.4
Fuelbreak				0.3	0.3
Kissack				0.1	0.1
Lift Station				0	0
Mtn 99		5.8	9.5	1.8	17.1
Parking				0.1	0.1
Restroom				0.3	0.3
S.Fk.Tank				0	0
Shooting Range				1.1	1.1
So.Fk.Marina				0.1	0.1
South Fk				0.1	0.1
ST155	2.5	9	13.1	2.9	27.5
ST178	0.7	22.2		0.7	23.6
U00001		0.4			0.4
U00016	0.6		0.8		1.4
U00017	0.3	0.9	0.6		1.8
U00018		1.1	0.1		1.2
U00028		0.2			0.2
U00072		0.2	0.1		0.3
U00117	0.1	1.3			1.4
U00118		0			0
U00120		0.4			0.4
U00121		0.5			0.5
U00122			0.1		0.1
U00124		0.4			0.4
U00126	0.4				0.4
U00127		0.6			0.6
U00129		0.3			0.3
U00130		0.6			0.6
U00133		0.7			0.7
U00135		0			0
U00136		0.3	0		0.3
U00137		0			0
U00217		0.8			0.8

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U00218		0.2			0.2
U00219		0.1			0.1
U00222		0.2			0.2
U00223		1.5	0.1		1.6
U00225		0.1			0.1
U00226	0.2				0.2
U00227		0.6			0.6
U00228		0.7			0.7
U00229		0.1			0.1
U00230		0.2			0.2
U00317		0.1			0.1
U00318		0.1	0.2		0.3
U00321		1.0			1.0
U00323		0.4	0.2		0.6
U00324		0.8	0		0.8
U00325			0		0
U00327		0.1			0.1
U00328		2.2			2.2
U00417	0.1	0.3			0.4
U00418			0.2		0.2
U00421	0.6		0.4		1
U00424		0.3			0.3
U00426			0		0
U00427		0.1			0.1
U00428	1.0				1.0
U00429	0.7		0.4		1.1
U00517	0	0.3			0.3
U00518			0		0
U00521	0.2		0.7		0.9
U00522			0		0
U00523		0.4			0.4
U00524		0.2			0.2
U00525			0.5		0.5
U00526			0.1		0.1
U00617		0			0
U00618		0.5	0.2		0.7
U00620		0.1	1.1		1.2
U00622			0.5		0.5
U00623		0.3			0.3
U00624		0.1			0.1
U00626		0	0.3		0.3
U00718		0.6	0		0.6
U00721			0.9		0.9
U00722			1.0		1.0
U00723		0.4			0.4
U00724		0.4	0.3		0.7
U00818		0.1			0.1
U00823		1.1			1.1

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U00918		0.2	0		0.2
U00934		0.3			0.3
U01000	1.2	0.1			1.3
U01001	0.1				0.1
U01002	0.1				0.1
U01003		0.4			0.4
U01004		0.2			0.2
U01005		0			0
U01006		0			0
U01007		0.5			0.5
U01008		0.4			0.4
U01009		0.2			0.2
U01010		0.2			0.2
U01011		0.2			0.2
U01012		0.3			0.3
U01013		0.1			0.1
U01014		0.2			0.2
U01015		0.4			0.4
U01017		0.1			0.1
U01018		0.2			0.2
U01019		0.3			0.3
U01022		0.1			0.1
U01023		0			0
U01024		0.1			0.1
U01025		0.1			0.1
U01026		0.3			0.3
U01027		0.3			0.3
U01028			0.1		0.1
U01029			0.4		0.4
U01031		0.1			0.1
U01032			0.1		0.1
U01033			0.5		0.5
U01034			0.4		0.4
U01035	0		0.9		0.9
U01036			0.2		0.2
U01037			0.3		0.3
U01038		0.2	0.1		0.3
U01039		0.3	0		0.3
U01040		0.2	0		0.2
U01041	0.5	0.2			0.7
U01045	0	0.4	0.3		0.7
U01046		0	0.4		0.4
U01047		0.2			0.2
U01048	0.2	0.6			0.8
U01049		0.9	0.2		1.1
U01050		1.1			1.1
U01051	1.2	3.2	0.3	0.4	5.1
U01052		0.2			0.2

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U01053		0.3			0.3
U01054	0.2				0.2
U01055	0.7	1.6			2.3
U01056		0.1			0.1
U01057	0.2				0.2
U01059		0.4			0.4
U01060	0.3	0.4			0.7
U01061		0.3			0.3
U01062		0.5			0.5
U01063		0.5			0.5
U01064		0.1			0.1
U01065		0			0
U01066		0.4			0.4
U01067		0.4			0.4
U01068		0.4			0.4
U01070		0.1			0.1
U01071		0.1			0.1
U01072		0.2			0.2
U01073		0.1			0.1
U01074		0.3			0.3
U01075		0.3			0.3
U01076		0.3			0.3
U01077		0.1			0.1
U01078		0.2			0.2
U01079		0.1			0.1
U01080		0.2			0.2
U01081		0.1			0.1
U01082		0.1			0.1
U01083		0.5			0.5
U01084		0.1			0.1
U01085		0.1			0.1
U01086		0.2			0.2
U01087		0.2			0.2
U01088		1.1			1.1
U01089		0.3			0.3
U01091		0.1			0.1
U01093	0.8				0.8
U01094	0.1		0.3		0.4
U01095		0.6			0.6
U01096		0.3			0.3
U01097	0	0.5			0.5
U01101		0.2			0.2
U01107		1.1			1.1
U01110		0.2			0.2
U01113		0.6			0.6
U01115		0.3			0.3
U01116	0.3				0.3
U01117		0.3			0.3

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U01118		0.7			0.7
U01119	1.7				1.7
U01120		2.5			2.5
U01121			0.1		0.1
U01123		0.4			0.4
U01124		1.1			1.1
U01125		0.9	0.3		1.2
U01127		0.7			0.7
U01128		0.3			0.3
U01130		0.3			0.3
U01131		0.1	0.7		0.8
U01132		0.9			0.9
U01135		2.1			2.1
U01136	0	0.2	0.1		0.3
U01137		0.4			0.4
U01138		0.2			0.2
U01140		0.4			0.4
U01141			0.1		0.1
U01143			0.5		0.5
U01144			0		0
U01145	0.4				0.4
U01146			0.2		0.2
U01147			0.1		0.1
U01149	3.4		0.4		3.8
U01151	0.5				0.5
U01152	0.2				0.2
U01153	0.1				0.1
U01154	2.0	0			2.0
U01155	1.1				1.1
U01156	0.8				0.8
U01157	0.6	0.6			1.2
U01158	1.0				1.0
U01159		0.1			0.1
U01160		0.4			0.4
U01161		1.3			1.3
U01162		0.2			0.2
U01163		0.2			0.2
U01164	0.1	0			0.1
U01165	0	0.1			0.1
U01166		0.1			0.1
U01168	0.2	0			0.2
U01169	0.1	0.5			0.6
U01170		0.1			0.1
U01172		0.2			0.2
U01173		0.3			0.3
U01174		0.2			0.2
U01175		0.1			0.1
U01176	0.1				0.1

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U01177		0.1			0.1
U01179		0.1			0.1
U01180		0.1			0.1
U01181		0.2			0.2
U01182		0.2			0.2
U01183	0.1				0.1
U01184		0.1			0.1
U01185	0.1				0.1
U01186	0.2				0.2
U01188		0.1			0.1
U01191		0.2			0.2
U01192		0.1			0.1
U01193		0.5			0.5
U01194		0.1			0.1
U01195		0			0
U01196		0			0
U01197		0			0
U01199		0			0
U01200		0.1			0.1
U01203		0.1			0.1
U01204	0.1				0.1
U01205	0.1				0.1
U01206	0.2				0.2
U01207		0.1			0.1
U01208		0			0
U01209	0				0
U01210	0.1				0.1
U01211		0			0
U01212		0.1			0.1
U01213		0.6			0.6
U01214		0.1			0.1
U01215		0.3			0.3
U01216		0.1			0.1
U01217		0.2			0.2
U01219		0.1			0.1
U01220		0			0
U01221		0.3			0.3
U01222		0.2			0.2
U01223		0.2			0.2
U01226			0.1		0.1
U01227		0.2			0.2
U01230		0.7	0.1		0.8
U01232	0				0
U01236		0			0
U01237		0.3			0.3
U01238		0.1			0.1
U01239		0.1			0.1
U01240			0.5		0.5

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U01241		0.3	0.1		0.4
U31E59		1.7			1.7
U99999		0	0.2		0.2
Unauthorized	5.1	6	21.8	79.5	112.4
Unknown	1.0	11.2	0.6		12.8
Vista Point Parking				0.1	0.1
Wofford Hts Park				0.1	0.1
<b>Grand Total</b>	102.9	474.3	297.9	158.5	1,033.20

## ***Appendix C***

### ***Mitigation and Monitoring***

## C.1 Mitigation

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Alternative 2 and 5 are not included because they do not add new routes and therefore mitigation measures are not needed.

### Hydrology

#### Erosion Control

Sediments made available from vehicle movement along tread of routes can be transported to nearby channels and eventually be deposited along low gradient areas of waterbodies during rain or snow melt events. The following mitigation structures are proposed to reduce the potential of this occurring:

- **Waterbars:** Soil, rock, or log berms that divert water from the trail tread. Waterbars are more effective controlling road drainage for motorized travel than rolling dips. Table M-1 displays the approximate waterbar spacing in feet by Region 5 soil erosion hazard rating. Soil erosion rating for the Sequoia National Forest ranges from moderate to very high. It is expected that spacing would be from 50 to 75 feet in most areas. Closer waterbar spacing may be employed where conditions are severe and the need exists.

**Table M-1. Approximate Water Bar Spacing by Erosion Hazard Rating**

Water Bar Spacing (in Feet)			
Slope (%)	R5 Soil Erosion Hazard Rating (EHR)		
	Low	Medium	High/Very High
3-5	400	300	200
6-10	300	300	150
11-15	200	150	100
16-20	150	100	75
21-35	100	75	50
36+	50	50	50

- **Rolling Dips:** An erosion control technique which reverses the grade of a trail for a distance of 15-20 feet before returning to the prevailing grade. The change in grade forces water to run off the trail surface rather than gaining additional velocity and volume. Table M-2 displays the approximate rolling dip spacing in feet by Region 5 soil erosion hazard rating. Soil erosion ratings for the Sequoia National Forest ranges from moderate to very high. It is expected

that spacing would be from 15 to 60 feet in most areas. Closer dip spacing may be employed where conditions are severe and the need exists.

**Table M-2. Approximate Rolling Dip Spacing by Erosion Hazard Rating**

Rolling Dip Spacing (in Feet)				
	R5 Soil Erosion Hazard Rating (EHR)			
Slope (%)	Low	Medium	High	Very High
1-6	400	350	300	250
7-9	300	250	200	150
10-14	200	175	150	125
15-20	150	120	90	60
21-40	90	70	50	30
41-60	50	40	25	15

Routes listed in Table M-3 require the establishment of rolling dips and/or water bars along their entire length.

**Table M-3. Routes Identified for Mitigation by Alternative**

Route ID	Mitigation	EHR Rating	Alt 1	Alt 3	Alt 4	Mod Alt 3
U00016	Install Rolling Dips	High		X		X
U00017	Install Rolling Dips	Very High, High	X	X	X	X
U00129	Install Water Bars	High	X			
U00130	Install Water Bars	High	X	X		X
U01000	Install Rolling Dips	Very High, High	X	X	X	X
U01001	Install Rolling Dips	Very High	X	X	X	X
U01020	Install Rolling Dips	High	X			
U01029	Install Water Bars	Moderate		X		X
U01032	Install Rolling Dips	Moderate	X	X		X
U01033	Install Rolling Dips	Moderate	X	X		X
U01035	Install Rolling Dips	Moderate	X	X		X
U01036	Install Rolling Dips	Moderate	X	X		X
U01048	Install Water Bars	Very High, High		X		X
U01051	Install Rolling Dips	High	X	X		X
U01055	Install Rolling Dips	Very High, High	X	X		X
U01093	Install Water Bars	Very High		X		X

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Route ID	Mitigation	EHR Rating	Alt 1	Alt 3	Alt 4	Mod Alt 3
U01095	Install Rolling Dips	High	X	X		
U01096	Install Rolling Dips	High	X	X		
U01097	Install Rolling Dips	High	X	X		
U01111	Install Rolling Dips	High	X	X	X	X
U01113	Install Rolling Dips	High	X	X		X
U01118	Install Water Bars	High		X		X
U01120	Install Water Bars	High		X		X
U01127	Install Water Bars	High		X		X
U01130	Install Water Bars	High	X	X		X
U01135	Install Rolling Dips and Water Bars	High	X	X		X
U01145	Install Rolling Dips	Very High	X	X		X
U01149	Install Rolling Dips	High	X	X		X
U01155	Install Rolling Dips	Very High		X		X

Waterbar and/or rolling dip mitigation will cost approximately \$1850 per mile to complete. Mitigation activities would use hand tools or mechanized equipment depending on route location and accessibility:

**Mechanized equipment:** ATV, auger, chainsaw, compactor, pole saw, rock rake, tractor, trailer, etc.

**Hand tools:** hand saw, McLeod, pick, posthole digger, pruning shear, rake, shovel, etc.

### Stream Crossing Mitigation Measures

Six unauthorized routes proposed for addition to the NFTS require stream crossing improvement. They are listed in Table M-4. Best Management Practice, Control of Construction and Maintenance Activities Adjacent to Streamside management zones (BMP 2.13) would be followed during installation.

**Table M-4. Unauthorized Routes That Have Stream Crossings in Need of Water Quality Protection**

Routes	Included In:			
	Alt 1	Alt 3	Mod. 3	Alt 4
U00016		X	X	
U00129	X			
U01051	X	X	X	
U01130	X	X	X	
U01132	X	X	X	
U01155		X	X	

Stream crossings would be hardened using grass grid pavers, concrete revetment systems, culverts, and/or bridges. Prices are estimates; final cost would be calculated before mitigation is completed. Individual stream crossings and associated mitigation measures are as follows:

Route U00016: Three stream crossings need hardening.

Crossing 1: A revetment system would be used to harden the crossing. Articulating concrete blocks would be used for a tread width of 5 feet with 2.5 feet embedded on each side to provide an anchor. Cells would be filled with crushed rock to help stabilize blocks. This revetment system is recommended for effective hardening for crossing 1.

Crossing 1: (Cost=\$25,000)

Crossing 2: Requires 40 grass grids (Cost = \$1,700)

Crossing 3: Requires 20 grass grids (Cost = \$1,500)

Total Costs: \$28,200

Route U00129: One stream crossing needing 15 grass grids

Total Costs: \$2,700

Route U01051: Harden road at stream crossing using concrete revetment system.

Total Costs: \$25,000

Route U01130: Two stream crossings

Crossing 1: Bridge needed at trail crossing with Bradshaw Creek. This would require a prefabricated bridge and bridge abutments to be installed. (Cost = \$15,000)

Crossing 2: Requires 50 grass grids (Cost = \$1,800)

Total Costs: \$16,800

Route U01132: One stream crossing requiring 80 grass grids  
Total Costs: \$2,800

Route U01155: 96" culvert (with two pipe inlets) and fill required at stream crossing. Cost associated with remote location.  
Total Costs: \$168,000

Total Costs by Alternative:

Alternative 1: \$47,300  
Alternative 3: \$240,800  
Alternative 4: \$0  
Modified Alternative 3: \$240,800

### **Mitigation Measures Specific to Lake Isabella (Modified Alternative 3)**

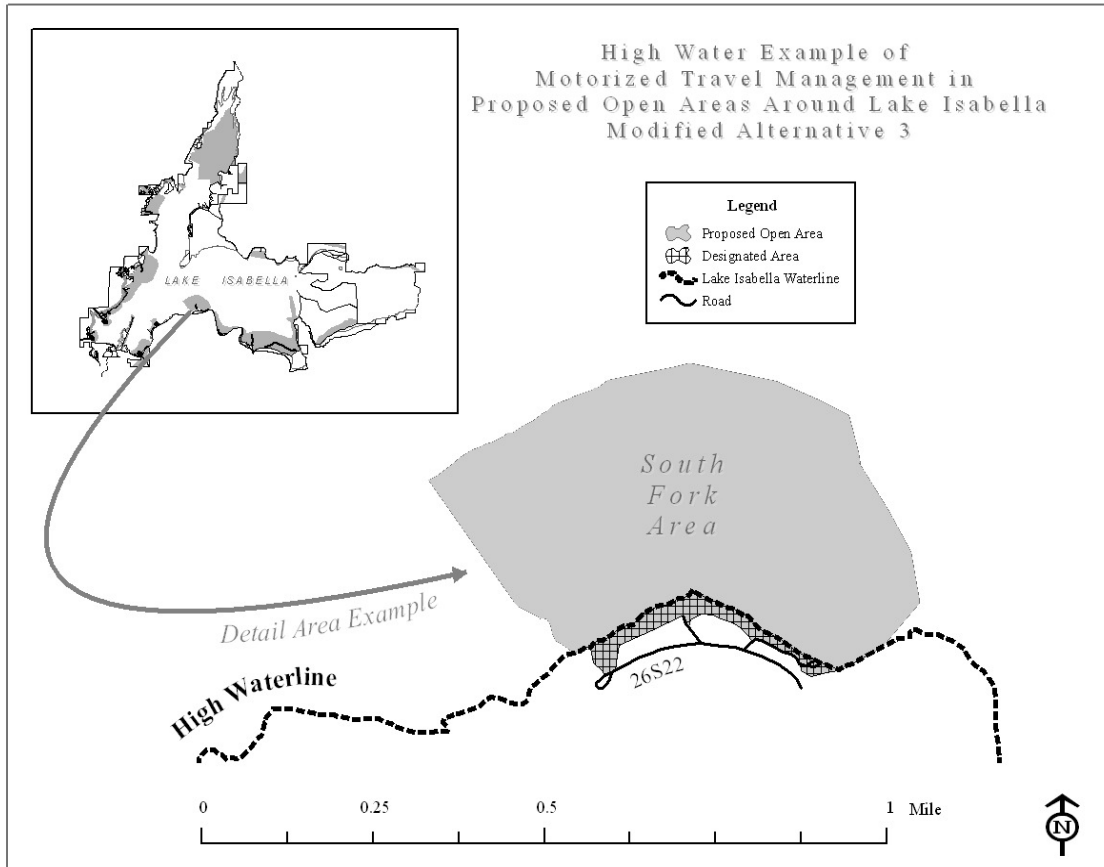
Motor vehicle use would be allowed at Lake Isabella by highway legal vehicles and would occur in designated areas within the open areas. Highway legal motor vehicles would be allowed to travel directly to the water's edge, following a path<sup>1</sup> within the open area. Once near the water's edge, vehicles would be allowed to travel perpendicular within 300 feet of the water's edge. The location of the 300-foot designated area that vehicles would be allowed to travel within would be adjusted as the lake level changes. Mitigation applies to all designated areas adjacent to the lake with the exception of Engineer Point. This mitigation is intended to reduce CWE under Modified Alternative 3. Mitigation measures would maintain CWE under threshold of concern for all lake watersheds by restricting motor vehicle traffic to designated areas in compliance with BMP 7.8 Cumulative Off-Site Watershed Effects. There may be times of the year when the water level of Lake Isabella is lower than an open area. As a result, motor vehicle travel would not be allowed past the open area boundary to the water's edge.

Figures 1 and 2 displays examples of motorized travel within an area. Figure 1 is an example of designated area open for use when the lake is at the high water mark (travel could be conducted designated area). In Figure 2, the designated area represents the 300 foot zone when the waterline is at the lowest edge of the

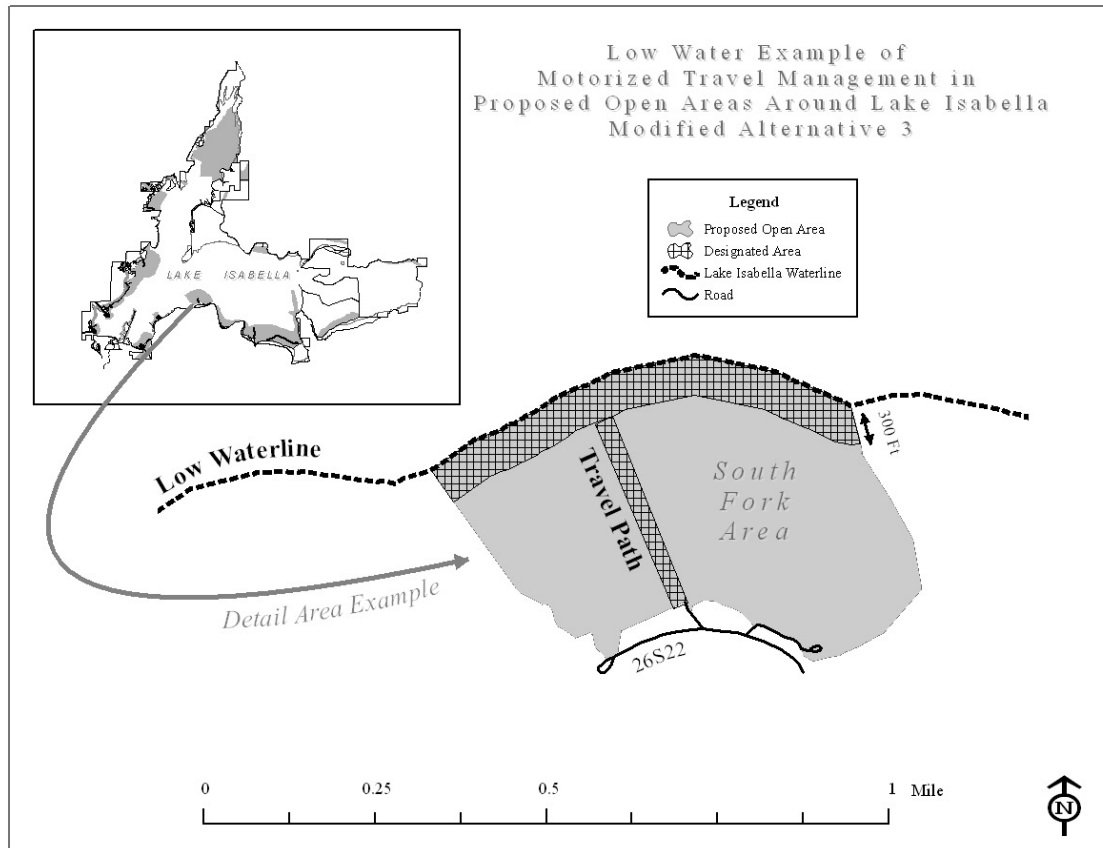
<sup>1</sup> The path will be delineated on the ground by signage or other physical materials (such as construction cones) and implemented as part of the management of the designated area.

South Fork open area at a different point in time; all travel would be conducted on the pathway or within the designated area while the rest of the South Fork open area would be unavailable for motorized travel.

**Figure 1 Example of motorized use within an open area when lake is at the high watermark**



**Figure 2 Motorized Use within Open Area When Waterline is Low**



## Cultural Resources

The Motorized Recreation PA lays out Standard and Specialized Protection Measures designed to mitigate the impact of motor vehicle usage on cultural resources. Standard Protection Measures “are low to no impact and are designed to protect any characteristics or values that may make properties eligible for inclusion in the NRHP.” Specialized Protection Measures must be approved by the Forest Heritage Resources Program Manager and must be reported in the Annual Report. Effective implementation of these measures satisfies the terms of 36 CFR 800. For those sites where implementation monitoring demonstrates that “protection measures are not feasible or practical or are unlikely to be effective,” the Sequoia will evaluate the site “in a manner consistent with the *Secretary of Interior’s Standards and Guidelines for Evaluation*.”

The mitigation measures depicted in Table M-5 *need* to be implemented prior to designating these routes and areas for motor vehicle use.

**Table M-5. Cultural Resources Mitigation**

Route or Area ID	Site Number	Type of Effect	Alternative	Nature of Effect	Protection/Mitigation
U01120	54-9	Direct/ Indirect	3, Mod 3	Soil disturbance, erosion, down cutting, vandalism/looting	<ul style="list-style-type: none"> <li>• Capping and/or hardening of route's surface</li> <li>• Padding surface of site in APE</li> <li>• Vegetative screening of resources</li> <li>• Archaeological monitoring</li> <li>• Estimated cost: \$10,000</li> </ul>
U01157	54-531H	Direct/ Indirect	3, Mod 3	Soil disturbance, erosion, down cutting, vandalism/looting	<ul style="list-style-type: none"> <li>• Fencing of resource</li> <li>• Archaeological monitoring</li> <li>• Estimated cost: \$2,000</li> </ul>
23S45	56-853	Direct/ Indirect	3, Mod 3	Soil disturbance, vandalism/looting	<ul style="list-style-type: none"> <li>• Capping and/or hardening of road/area's surface</li> <li>• Padding surface of site within loop</li> <li>• Vegetative screening of resources</li> <li>• Archaeological monitoring</li> <li>• Estimated cost: \$10,000</li> </ul>
24S47	56-855	Direct/ Indirect	3, Mod 3	Soil disturbance, vandalism/looting	<ul style="list-style-type: none"> <li>• Capping and/or hardening of road/area's surface</li> <li>• Padding surface of site within loop</li> <li>• Vegetative screening of resources</li> <li>• Archaeological monitoring</li> <li>• Estimated cost: \$10,000</li> </ul>
24S48B	56-851	Indirect	3, Mod 3	Soil disturbance, vandalism/looting	<ul style="list-style-type: none"> <li>• Vegetative screening of resource</li> <li>• Archaeological monitoring</li> <li>• Estimated cost: \$2,000</li> </ul>
Boulder Gulch	54-638/H	Indirect	Mod 3	Looting	<ul style="list-style-type: none"> <li>• Padding site</li> <li>• Archaeological monitoring</li> <li>• Estimated cost: \$10,000</li> </ul>

## Wildlife

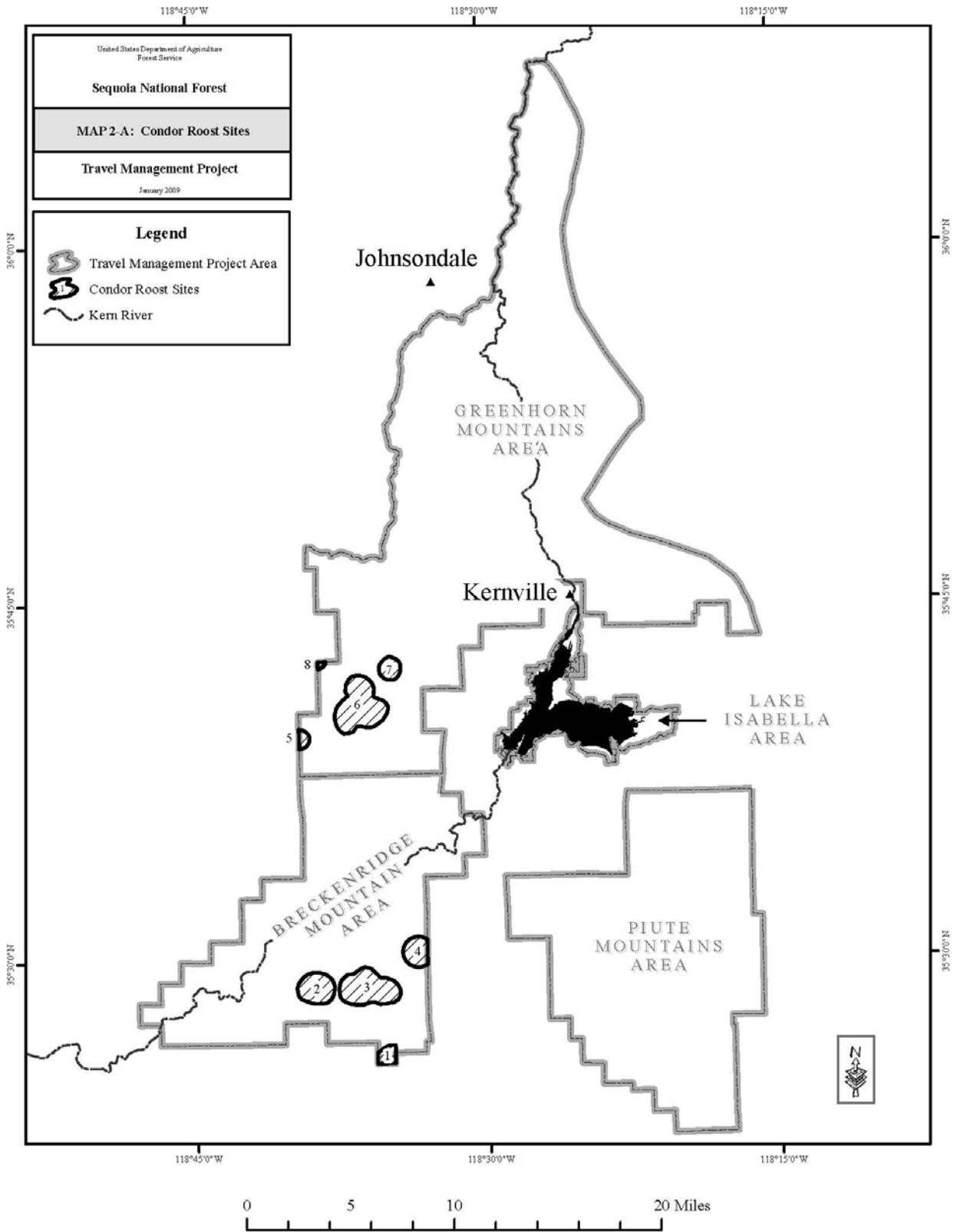
### Condor Roost Areas

The USFWS expressed concerns for potential impacts to condors near three condor roost areas in the Breckenridge Mountains (Condor Roost Areas 2, 3, and 4) from Routes U01055, U01029, U01032, U01033, U01035, U01036, 28S34, 28S08, 28S08A, 28S19, 31E78, which are proposed in Alternative 3). However, given that these condor roost area were historically visited on a less frequent

basis and for shorter durations than those in the Greenhorns, the USFWS discussed using a series of gates as a protective mechanism to allow for future closure if needed. To address USFWS concerns, Modified Alternative 3 proposes to install gates at various control points on the Routes 31E78 and 28S19 as needed—these routes (as well as Route 28S08 which has an existing gate), which were initially identified as open in Alternative 3 and are located within these historic condor roost areas, would remain open in Modified Alternative 3, but would be subject to closure should condor use dramatically increase in frequency and duration. The need for closure would be determined by the USFWS telemetry data of condor use and gate closure would be managed by the Forest Service.

Estimated cost for the above gates, from fabrication through installation, is \$16,500, based on a per unit cost of \$5,500.

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### **Limiting Operating Periods**

The following Limited operation Periods will be in effect for activities identified in Appendix C for trail improvement work.

Routes within California spotted owl PACs requiring a Limited Operating Period (LOP) of March 1-August 15 (unless site specific monitoring determines the activity will not result in disturbance to nesting).

- Alternative 1: U00124, U00223, U00324, U00424, U01130, U01132, U01135, and U01136.
- Alternative 3: U00124, U00324, U00424, U01120, U01130, U01132, U01135, U01136 and U99999.
- Alternative 4: U00324 and U01136.
- Modified Alternative 3: U00124, U00223, U00324, U00424, U01120, U01130, U01132, U01135, U01136 and U99999.

Routes within Northern goshawk PACs requiring a Limited Operating Period (LOP) of February 15-September 15 (unless site specific monitoring determines the activity will not result in disturbance to nesting).

- Alternative 1: U01110, U01113, and U01223.
- Alternative 3: U01110, U01113, U01120 and U01223.
- Alternative 4: U01223
- Modified Alternative 3: U01110, U01113, U01120 and U01223.

Routes near known population of Kern Canyon slender salamander with Limited Operating Period (LOP) of October 1-May 1.

- Alternative 1: U01051
- Alternative 3: U01051
- Modified Alternative 3: U01051

## **Transportation**

The mitigation measures identified in Table M-6 were developed by the Forest Engineer as part of the mixed-use analysis of non-highway motor vehicles on roads on designed for passenger vehicles. For the routes listed in Table M-6, mitigation must be completed prior to designating them for Motorized Mixed Use and including this use type on the Sequoia MVUM. The use type of for listed roads are currently “roads open to all vehicles” and would be converted to “roads open to all vehicles”; except Route 24S15, which will remain a road open to highway legal vehicles only with the exception of mixed-use allowed on a

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segment (.1 miles).

**Table M-6. Routes Identified for Mitigation by Alternative**

Route ID	Alt 1	Alt 3	Mod Alt 3	Alt 4	Mileage	Action	Mitigation	Cost
24S15		X	X		0.1	Allow MMU <sup>3</sup> for 0.11 mile on OPML 3 Road	STOP sign on trail at road and trail intersection; WARNING sign at each end of segment	\$400.00
24S24	X	X	X	X	3.3	Change OPML from 3 to 2 and allow MMU	MMU sign	\$200.00
24S86	X	X	X	X	0.6	Change OPML from 3 to 2 and allow MMU	MMU sign	\$200.00
25S04		X	X		3.1	Change OPML from 3 to 2 and allow MMU	MMU sign	\$200.00
25S07	X				0.0	Change OPML from 3 to 2 and allow MMU	NONE -	-
25S21	X	X	X		4.2	Change OPML from 3 to 2 and allow MMU	NONE	-
26S19	X	X	X		0.3	Change OPML from 3 to 2 and allow MMU	MMU sign	\$200.00
26S27	X	X	X	X	0.4	Change OPML from 3 to 2 and allow MMU	MMU sign; 10 MPH Speed limit sign; NO JOYRIDING Plaque	\$400.00
27S37	X				0.3	Change OPML from 3 to 2 and allow MMU	NONE	-
28S21	X	X	X	X	0.2	Change OPML from 3 to 2 and allow MMU	MMU sign; 10 MPH Speed Limit sign; NO JOYRIDING Plaque	\$400.00

<sup>3</sup> MMU stands for motorized mix use.

## C.2 Monitoring Strategy

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All of the action alternatives have a two tiered monitoring strategy. The first tier is a 100% sample of those routes proposed for addition to the National Forest Transportation System with identified resource concerns or mitigation which require monitoring. The second tier is a stratified random sample of all remaining roads and motorized trails in the National Forest Transportation System. The number of roads and trails monitored in Tier 2 will be based upon available funding.

### Noxious Weeds

Unauthorized routes (and adjacent areas disturbed by them) near known Tree of Heaven population will be monitored to assure that Tree of Heaven is contained on site and that seeds are not available to be transported to other areas. If it is determined that populations are expanding or seeds are present within the route area, plants may be mechanically removed from the route area (this action would be proposed and a decision made under a different NEPA environmental document).

### Cultural Resources

#### Roads and Trails

The Motorized Recreation PA outlines monitoring requirements for cultural resources affected by motorized vehicles. Because baseline data is absent for many cultural resources, the impact of motor vehicle usage is as yet unclear for many sites. Effective mitigation (if needed) for these sites cannot be engineered until the nature and degree of impact is better understood. The Motorized Recreation PA stipulates that within one year of designating routes, the Sequoia NF will develop a monitoring plan that focuses on at-risk historic properties and those properties that may potentially be at risk from motor vehicle use. The monitoring plan will address both those resources for which monitoring is required to generate the baseline data necessary for engineering mitigation measures and monitoring as a tool to identify new direct and indirect effects. Specifically, the Motorized Recreation PA requires that:

- Monitoring be based on levels of use, type of resources present, potential risks, and anticipated effects.
- Monitoring should be concentrated on “those resources where risks are clearly identified . . . All *at-risk* historic properties shall be monitored over a two-year period following designation. In the third year, Forests may reassess the need

to continue monitoring *at-risk* properties, and adjust monitoring objectives and frequency accordingly.”

- Forests “annually monitor at least 10% of **not** *at-risk* historic properties within medium to heavy use routes. At least 5% of the **not** *at-risk* historic properties within light to low use routes and specifically defined areas will be monitored annually. After three years, Forests may revise monitoring plans if results indicate that certain types of properties or routes no longer required prescribed monitoring.”
- “Where monitoring indicates effects are ongoing, develop appropriate resource protection or treatment measures (e.g. barriers, fencing, trail reroutes, padding, signing, site mitigation, etc). Monitor the effectiveness of any resource or treatment measures implemented for two years. After two years, reassess the need for continued monitoring.”

### Open Areas

Understanding the impact motor vehicles have had on the cultural resources located in the open areas associated with Lake Isabella is complicated by the action of the lake. The *Non-Intensive Survey Strategy for the Addition of Motor Vehicle Routes and Areas at Lake Isabella to the Sequoia National Forest Transportation System* (see below) lays out a program of archaeological monitoring to better understand the impact of motor vehicles and to aid the engineering of any necessary mitigation; this program stipulates that:

- During the four-year period of intensive surveys, 25% of the previously identified sites located within the APE shall be relocated and monitored to assess potential impacts of motor vehicle use.
- Monitoring requirements after the four-year intensive inventory period will be identified in consultation with the SHPO.
- The Standard Resource Protection Measures (SRPMs) of the Travel Management PA (Appendix B ) shall be used as necessary to protect at risk historic properties that may be affected by motor vehicle usage.
- Those SRPMs prescribed during this four-year period shall be annually monitored for effectiveness.

Table M-6 depicts, by alternative, those unauthorized routes and resources with prescribed archaeological monitoring. Those sites affected by specific routes should be annually monitored over a three year period. In Modified Alternative 3, twenty-five percent of those sites located in open areas around Lake Isabella will be monitored each year over a four-year period. Should monitoring identify

ongoing direct or indirect effects which threaten to degrade the integrity criteria for NRHP eligibility, Standard or Specialized Protection measures will need to be implemented to prevent further impacts.

## Tier 1 Monitoring

Tier 1 is a one 100% sample of all routes with significant resource concerns identified during field reviews. Monitoring plans will be implemented following publication of the ROD. Those routes and areas designated for motor vehicle use which are listed in Table M-7 will be monitored annually for the specific resource concern associated with that route.

**Table M-7. Travel Routes with Recommended Monitoring**

Route Number	Alt. 1	Alt. 2	Alt. 3	Mod. Alt. 3	Alt. 4	Alt. 5	Resource Category	Recommendation
23S42			✓				Botany	Noxious Weeds Monitoring
23S43			✓				Botany	Noxious Weeds Monitoring
24S55			✓				Botany	Noxious Weeds Monitoring
24S55A			✓				Botany	Noxious Weeds Monitoring
24S07A	✓		✓	✓	✓		Cultural	Monitor Site 56-243
23S34A			✓	✓			Cultural	Monitor Site 56-260
23S43			✓	✓			Cultural	Monitor Site 56-778/H
23S45			✓	✓			Cultural	Monitor Site 56-853
23S46			✓	✓			Cultural	Monitor Site 56-867
23S47			✓	✓			Cultural	Monitor Site 56-855
24S48B			✓	✓			Cultural	Monitor Site 56-851
24S49			✓	✓			Cultural	Monitor Site 56-854
24S51			✓	✓			Cultural	Monitor Site 56-856H
24S54A			✓	✓			Cultural	Monitor Site 56-813
24S55			✓	✓			Cultural	Monitor Site 56-858H
24S55A			✓	✓			Cultural	Monitor Site 56-858H
24S57			✓	✓			Cultural	Monitor Site 56-728
24S57B			✓	✓			Cultural	Monitor Site 56-781
U00016		✓	✓	✓			Cultural	Monitor Sites 54-212 & 54-443H
U00017	✓	✓	✓	✓	✓		Cultural	Monitor Sites 54-213 & 54-369
U00221		✓					Cultural	Monitor Site 54-39
U00223	✓	✓					Cultural	Monitor Site 54-151H
U00323		✓					Cultural	Monitor Site 54-151H
U00521		✓					Cultural	Monitor Site 54-359H
U00526		✓					Cultural	Monitor Site 54-340
U01000	✓	✓	✓	✓	✓		Cultural	Monitor Site 54-27

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Route Number	Alt. 1	Alt. 2	Alt. 3	Mod. Alt. 3	Alt. 4	Alt. 5	Resource Category	Recommendation
U01012		✓					Cultural	Monitor Sites 54-70 & 54-311
U01055	✓	✓	✓	✓			Cultural	Monitor Site 54-16
U01058		✓					Cultural	Monitor Sites 54-241, 54-243 & 54-244/H
U01059		✓					Cultural	Monitor Sites 54-436H & 54-437
U01061		✓					Cultural	Monitor Sites 54-436H & 54-437
U01065		✓					Cultural	Monitor Site 54-536H
U01066		✓					Cultural	Monitor Sites 54-534 & 54-535H
U01067		✓					Cultural	Monitor Sites 54-529H, 54-532H & 54-533/H
U01069		✓					Cultural	Monitor Sites 54-45 & 54-166
U01093		✓	✓	✓			Cultural	Monitor Site 54-297
U01095	✓	✓	✓				Cultural	Monitor Site 54-67
U01107		✓					Cultural	Monitor Site 54-11
U01118		✓	✓				Cultural	Monitor Site 54-356
U01119		✓					Cultural	Monitor Site 54-538H
U01120		✓	✓	✓			Cultural	Monitor Site 54-9
U01140		✓					Cultural	Monitor Site 54-357
U01142		✓					Cultural	Monitor Site 54-387
U01151		✓					Cultural	Monitor Sites 54-270 & 54-271H
U01152		✓					Cultural	Monitor Site 54-302/H
U01156		✓					Cultural	Monitor Sites 54-314 & 54-525H
U01157		✓	✓	✓			Cultural	Monitor Site 54-531H
U01158	✓	✓	✓				Cultural	Monitor Site 54-275H
U01161		✓					Cultural	Monitor Site 54-530H
U01162		✓					Cultural	Monitor Site 54-76
U01169		✓					Cultural	Monitor Site 54-528H
U01172		✓					Cultural	Monitor Sites 54-431 & 54-527H
U01188		✓					Cultural	Monitor Site 54-522/H
U01206		✓					Cultural	Monitor Site 54-314
U01211		✓					Cultural	Monitor Site 54-526
U01213		✓					Cultural	Monitor Site 54-15
U01215		✓					Cultural	Monitor Sites 54-523H & 54-524H
U01228		✓					Cultural	Monitor Site 54-43
U99999		✓	✓	✓			Cultural	Monitor Site 56-862
17 open areas at				✓			Cultural, Noxious	Annually monitor 25% of identified cultural resources

Route Number	Alt. 1	Alt. 2	Alt. 3	Mod. Alt. 3	Alt. 4	Alt. 5	Resource Category	Recommendation
Lake Isabella							Weeds	sites in the open areas at Lake Isabella

## Tier 2 Monitoring

Tier 2 consists of a random sample of all other roads and trails in the National Forest Transportation System. The sample size will be determined based on available funding or by mandates such as the Travel Management PA for cultural resources. Tier 2 monitoring will be conducted using the following Region 5 BMPEP protocol:

### Timing of the Monitoring

Prior to initiating effectiveness monitoring, all motorized trails would have gone through at least one winter season following construction, reconstruction or maintenance.

Monitoring would be implemented when evidence of erosion is the most visible. Typically this monitoring would occur in the Spring as soon as there is access to the site(s), or after a large rainfall event(s). In general, monitoring would not take place in the driest part of the year because evidence of erosion is less visible.

### Conducting the Monitoring

**Sample Site and Sample Points.** Monitoring strategy would be designed by resource specialists to best identify ongoing direct or indirect effects. For some resources, monitoring would involve an examination of significant portions of routes. For other resources, Monitoring may involve the examination of specific, known resources (e.g., archaeological sites).

**Annual Reporting of Tier 1 and Tier 2 Monitoring Results.** Results of the Tier 1 and Tier 2 OHV monitoring would be incorporated in the annual Forest Plan Monitoring and evaluation report. This report would be made available on an annual basis.

## ***Appendix D***

### ***Law Enforcement***

Forest Service Law Enforcement and Investigations (LEI) personnel are responsible for protecting the public, employees, natural resources, and other property under the agency's jurisdiction. Additionally, LEI investigates and enforces applicable laws and regulations that affect the National Forest System (NFS) lands, and prevents criminal violations. The new Travel Management Rule (TMR) is one such regulation.

Subpart B 212.51 of the TMR requires designation of roads, trails, and areas open to motor vehicle use, and the prohibition of cross-country wheeled motorized vehicle travel by the public. In addition, this section of the rule requires identifying season of use and type of vehicle use. This is a considerable change in public motorized access management from previous conditions where most Forests were managed as "open to cross-country travel." The implementation of designated routes and areas for motorized vehicles will be the responsibility of all agency employees, especially in the area of education and enforcement. The law enforcement program is primarily responsible for issuing violations to enforce Subpart B 212.51 of the rule.

The national LEI budget is funded by appropriated dollars from Congress to provide law enforcement services on the NFS lands. The Travel Management program is one of many Forest programs to benefit from federal law enforcement funding. For the past few years, law enforcement funding increased and that translated into an increase in field law enforcement personnel<sup>4</sup>. LEI staff work in co-operation with National Forest line officers to accomplish their resource management objectives, yet LEI is administratively separated to maintain legal and investigatory independence.

To enhance enforcement of CFR 212.51, Region 5 Forest Recreation Programs applied for and received grant dollars (green sticker funding) from the State of California Off-Highway Motor Vehicle Recreation Division Grants Program. These State funds are earmarked specifically for enforcement of off-highway vehicle laws and regulations on the various Forests, and are performed primarily by Forest Protection Officers (FPOs). In addition, Law Enforcement Officers (LEOs) support the FPOs as needed, especially if serious violations occurred. In the past three years, the Sequoia NF has received a total of \$216,000 for OHV law enforcement from the State of California.

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<sup>4</sup> Region 5 Law Enforcement budget figures increased for the past four years and the number of law enforcement officers increased by 65.

## **Authority and Jurisdiction**

The Forest Service exercises its law enforcement authority when violation of laws or regulations occurs on NFS lands or when incidents affect the NFS. The existing authorities for enforcement are completely adequate and no new laws will be needed to enforce CFR 212.51.

Every National Forest annually updates a law enforcement plan. All Forest Service employees have a duty to know and understand their authorities and responsibilities, and to properly enforce laws and regulations relating to the Forest within their authority and capability. LEI and agency personnel provide a regular and recurring presence on vast amounts of public land, roads, trails, and areas taking appropriate action if illegal activity is discovered. Violations involving motorized vehicles are primarily enforced FPOs, who patrol off-highway use roads, trails, and areas. These include violations such as operating a motor vehicle in violation of Federal regulations and California Vehicle Code (CVC), parking improperly, resource damage to soils, vegetation or wildlife, and disorderly or unruly behavior. LEOs use discretion when deciding what type of action to initiate when handling violations to the following federal laws that pertain specifically to motor vehicle use.

- The Act of June 4, 1897 (Title 16 United States Code 551) is the authority for issuing regulations at Title 36 Code of Federal Regulations, Part 261 (36 CFR 261). Specific OHV travel management regulations are in sections 261.9 – Property, 261.13 –Motor Vehicle Use, and 261.15 Use of Vehicles Off-Road. These CFRs cover a wide array of misdemeanor infractions.
- The Act of March 3, 1905 (Title 16 United States Code 559) authorizes all employees of the Forest Service to make arrests for violation of the laws and regulations pertaining to National Forests. Normally, arrest authority is limited to trained law enforcement personnel. (Any employee may take immediate action when necessary to protect life and prevent serious damage to or destruction of property, escape of a suspect, or loss of material evidence when such action can be done with reasonable safety.)

The legal foundation for enforcement on the Sequoia National Forest was established by Congress as “proprietary jurisdiction”. This term means that the Federal Government has acquired some degree of right or title to an area in a State, but has not obtained any measure of the State’s authority over the area. The legal scope of the Forest Service is limited to laws established for that property, or National Forest. However, enforcement agencies with State authority in California retain their full legal authority on the Sequoia National Forest.

Notably, for enforcement of violations committed by motor vehicle operators, the California Highway Patrol and the four county Sheriffs have separate authority and jurisdiction to enforce OHV laws under the California Vehicle Code.

In November of 2008, the Regional Forester signed a new regional order that allows Forest Service officers to enforce the OHV section (CVC 38000) of the California Vehicle Code on National Forest roads.

## **Cooperation**

The Forest Service shares responsibility and cooperates with local, State, and other Federal agencies in the execution of its law enforcement program. The authority for cooperation among agencies, especially as it pertains to CFR 212.51, is within the following laws:

- The Act of August 10, 1971 (Title 16 United States Code 551a) authorizes the Secretary of Agriculture to cooperate with, and provide reimbursement to, any State or political subdivision thereof, for the enforcement of their laws within NFS. This law does not deprive any State or local law enforcement agency from exercising its criminal and civil jurisdiction on lands that are part of the NFS.
- The California Penal Code, Section 830.8 provides that Forest Service law enforcement personnel may exercise State Peace Officer authority where the sheriff of the county wherein the officer works provided specific written permission for the officer.
- The CVC, Section 38301 allows State law enforcement officer to enforce any of the Federal CFRs related to motor vehicles on NFS lands.<sup>5</sup>

Each Forest maintains close working relationships with many State and local law enforcement agencies with law enforcement responsibilities in or adjacent to the Forest boundary. Significant cooperating agencies relative to enforcing CFR 212.51 include the local county sheriff departments, the California Department of Fish and Game, California Highway Patrol, California Department of Forestry and Fire Protection, and occasionally one or more Federal agencies, depending on the violation. Forest Service law enforcement personnel cooperate fully with these agencies in carrying out their law enforcement responsibilities by providing assistance, whether it be acting as a liaison or providing advice and information.

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<sup>5</sup> CVC Section 38301. (a) It is unlawful to operate a vehicle in violation of special regulations which have been promulgated by the governmental agency having jurisdiction over public lands, including, but not limited to, regulations governing access, routes of travel, plants, wildlife habitat, water resources and historical sites.

Forests maintain Cooperative Law Enforcement Agreements with their respective county sheriff's office. In Region 5, the total cost for the 2008 Cooperative Law Enforcement Agreements is \$891,397.<sup>6</sup> These dollars are for performance of duties in addition to the normal activities in which the sheriff's deputies handle crimes against persons and their property that may occur within the NFS boundary. In these agreements, both parties recognize that public use of NFS lands is usually located in areas that are remote or sparsely populated and the enforcement of State and local law is related to the administration and regulation of NFS lands. Within the Cooperative Law Enforcement Agreements, an Operating Plan is developed outlining the supplemental work to be performed by the cooperating agency. Operating plans may provide:

- Supplemental patrols in areas of high use.
- Supplemental patrols on weekends or during particular months of high use.
- Additional officers for large group gatherings or events (enduros).
- Vehicle checkpoints for vehicle registration spark arrestors and other miscellaneous items.

## **Implementation and Tracking**

Implementation of the Forest Service law enforcement program is continually adapting as law enforcement personnel assess the changing patterns of visitor use and attitudes, and the trends in violations, especially for property and resource damage. One method of assessment is the analysis of Law Enforcement and Investigations Management Attainment Reporting System (LEIMARS) data. LEIMARS tracks all known violations of criminal law or regulation on NFS lands (FSH 5309.11, Chapter 40 and FSM 5340). Additionally, embedded in LEIMARS is the Case Tracking System, which tracks all felony and serious misdemeanor cases. These tracking systems:

- Capture and record information on location, volume, damages, and type of violations occurring on NFS lands.
- Provide a retrieval system of data on incidents and violations that is responsive to the needs of all organizational levels.
- Provide agency managers with a means to identify and monitor law enforcement activities.
- Specifically identify problem areas and periods of activity.

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<sup>6</sup> Region 5 Law Enforcement Cooperative Agreement 2008 spreadsheet.

- Provide a method to record and analyze incidents involving violations or suspected violations on NFS lands.

Trends in violations can be analyzed and appropriate action(s) taken, if needed. Appropriate action(s) may involve one or more techniques or adaptive strategies. In the law enforcement community, this is often referred to as the “Three E Strategy” of Engineering, Education, and Enforcement. With the changes to how the public accesses and travels on NFS lands, it is anticipated that the law enforcement program will use a combination of strategies, especially during the first five years of implementation of the MVUM.

## **Implementation Strategy**

### **Engineering - Education - Enforcement**

The Engineering strategy is designed to prevent or reduce inadvertent violations, resource damage, and crime vulnerability. The strategy’s goal is to remove the opportunity to commit a violation. LEI personnel work with each Forest, particularly the recreation and engineering programs, to implement some or all of the following specific tactics:

- Proper design of improvements and facilities.
- Facility security measures such as installation of barricades, gates, and other natural obstacles.
- Forest signing, both directional and informational, to assist the public to ensure they stay on designated trails, and out of the wilderness and other sensitive areas.
- Physically close and rehabilitate decommissioned roads and trails.

The Educational strategy focuses on specific user groups, school groups, recreation users, and the public. The goal is to develop responsible and concerned public land use attitudes in Forest users; it is violation prevention. Forest LEOs and FPOs make regular contacts in the field informing the users of the regulations and need for the prohibition. The LEI personnel work with each Forest, particularly the recreation and public information programs, to identify and implement some or all of the following specific tactics:

- Motor vehicle use maps (MVUMs) are easily available to public.
- Post route markers and signs.
- Distribute maps and brochures promoting responsible use.

- Conduct environmental interpretation activities in local communities, at schools, and with special interest groups.
- Use of all forms of the media (television, radio, and newspapers), especially prior to and during the high use periods.
- Ensure all employees understand the Travel Management Rule.
- Utilize high visibility prevention patrols and public information checkpoints, especially during the peak use periods.
- Encourage cooperating law enforcement agencies to make visitor contacts and provide violator information to Forest Officers.
- Ride with other agency officers to demonstrate solidarity to the public.
- Issue news releases of arrests and successful prosecutions, including offender names, criminal penalties, and court ordered restitution.

The Enforcement strategy is to affect crime prevention measures that are designed to reduce specific criminal activity, deter potential and repeat offenders, maximize enforcement actions and visibility, and increase prosecutorial successes. All enforcement actions should result in a better understanding of regulations pertaining to the management of NFS lands. LEI personnel work with each Forest to identify and implement some or all of the following specific tactics:

- Schedule officers to work during the identified problem periods, including holidays and weekends.
- Utilize high profile “saturation patrols” and stationary surveillance posts in the identified problem areas.
- Utilize the most effective and efficient means of patrol, including foot, horseback, all-terrain vehicle, snowmobile, watercraft, and aircraft.
- Utilize aerial over-flights to enforce restriction under CFR 212.51.
- Enlist the aid of volunteers.
- Initiate an awards program.
- Supplement patrols with cooperating law enforcement agencies in areas of concern.
- Use technical investigative equipment (cameras, monitors, sensors) to assist officers with detecting and monitoring violations at known or suspected violation sites.
- Conduct planned and approved compliance checkpoints.

- Follow-up on complaints to document violations, damages, and identify suspect vehicles or persons.
- Require cooperating law enforcement agencies to assist with reporting and/or enforcing violations within their authority.
- Patrol with other cooperating law enforcement agency officers.
- Conduct unpredictable patrol schedules.
- Conduct special enforcement actions (unmarked vehicle deployment, surveillance, traffic check-points).
- Utilize LEIMARS and Central Violations Bureau databases along with the State motor vehicle data to identify repeat offenders for enhanced prosecution.
- Pursue court ordered restitution or civil collections for resource and property damages.
- Encourage prosecutorial and judicial support.
- Execute bench warrants related to off-highway vehicle violations.

## **Assumptions**

Based on many years of enforcing off-highway vehicles, implementing change in access and enforcement of CFR 212.51, LEOs aver the assumptions listed below to be true. Additionally, these assumptions are based on several case studies in Region 5. These assumptions may change in time with analysis of the LEIMARS database.

### **Enforcement Assumptions**

- Enforcement of the laws and regulations related to CFR 212.51 are enforced equally in authority and weight as with all other Federal laws and regulations.
- As with any change in a regulation on NFS lands, there is usually a transitional period for the public to understand the changes. It is anticipated there will be a higher number of violations to CFR 212.51 in the first couple of years and the number of violations will decline as the users understand and comply with the rules.
- Users in communities adjacent to the Forest will comply within one to two years.
- Frequent users but further in distant from the Forest will comply within two to three years.
- Infrequent users regardless of distant may take up to five years to comply.

- Law enforcement officer and agency personnel's presence and enforcement actions will positively affect OHV users' behaviors and attitudes.
- The MVUM clearly defines the designated routes, season of use, and type of use, therefore making violations unequivocal.
- Once the MVUM is published, the designated network of roads and trails with signs, and user education programs, will reduce the number of violations.
- FPOs spend a large percentage of their time on Travel Management issues, and depending on the Forest, the estimate ranges from 30 to 50 percent. LEOs spend approximately 10-20% of their time on enforcement of off-highway vehicle issues.<sup>7</sup>

### **Agency Funding Assumptions**

- Appropriated program funding levels and number of law enforcement personnel does not affect enforcement of CFR 212.51. All laws and regulations are enforced equally.
- Appropriated funds will remain level or increase slightly in the next five years.
- The State of California Off-Highway Motor Vehicle Recreation Division Grants Program (green sticker funding) enhances and provides additional law enforcement presence in the field at the Forest level.

### **Public Attitude and Compliance Assumptions:**

- Forest users want to do the right thing and will obey the rule<sup>8</sup> once they understand the rule and motor vehicle use map.
- User compliance<sup>9</sup> is based on the State of California Off-Highway Motor Vehicle Recreation Division data and is anticipated to be:
  - 95% of the users are fully compliant.
  - 2-3% of the users thinks about and may violate a law.
  - 1-2% of the users will violate the law.

### **Measure of Success**

Measuring the success of the compliance with CFR 212.51 will be done using the LEIMARS database. An analysis of the data may alert a Forest to a particular problem area for violations such as a group campsite area that may be

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<sup>7</sup> Barnett, G. 2004-2005 Law Enforcement Workload Analysis.

<sup>8</sup> Tyler, Tom R. Why People Obey the Law, Princeton University Press, 2006, p. 320

<sup>9</sup> User compliance was computed by using the State Vehicular Recreation Area Fiscal year 2006/2007 data: 4.2M SVRA visitors divided by the 210,000 citations written, is approximately 5% non-compliant and 95% compliant.

surrounded by flat meadow areas, inviting riders to potentially violate the regulation. A successful program will see a positive change in the following measures:

- Measure 1: A reduction in the number of off-route travel violations.
- Measure 2: A reduction in the number of resource damage

## ***Appendix E***

### ***Roads Analyzed for Motorized Mixed Use***

The following roads were brought forward to be analyzed for motorized mixed use (mixing highway-legal vehicles with non-highway-legal vehicles). They are arranged in order by road number throughout the project area. (Road numbers are based on townships.)

The analyses focused on the likelihood of a crash occurring between highway legal and non-highway legal vehicles, and the severity of an accident should one occur. Additionally, whether allowing motorized mixed use was or could be made consistent with the California Vehicle Code (CVC) was determined. Mixed use on roughly graded roads intended for high clearance vehicles (Maintenance Level 2 (ML 2)) of any length is consistent with the CVC because roads of this condition are not considered highways. Mixed use on roads maintained for passenger vehicles (ML 3 or above) can be made consistent with the CVC only if the segments are under three miles long and a consultation process is completed. In the table below, the CVC column indicates whether mixed use can be made consistent with state law by reducing the maintenance level or completing a consultation process. In the individual mixed use analyses, the question concerning consistency with state and local laws reflects the current status of the road. Analyses on ML 3 roads are not yet consistent with state law because consultation has not been completed.

Key factors in assessing crash probability were traffic volume, speed, and limited sight distance caused by winding roads and heavy vegetation. Road characteristics leading to more severe crashes include steep side slopes, heavy vegetation, and higher speeds. If a road is not rated as having both low accident probability and severity, then mitigation measures are needed. Such measures include signs advising users of mixed use and managing the road at a lower maintenance level so that the rougher road surface reduces travel speeds. For ML 2 roads currently open to mixed use and with no mixed use accidents on record, crash probability and severity were not specifically evaluated.

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APPENDIX E: ROADS ANALYZED FOR MOTORIZED MIXED USE

ROAD NUMBER	ROAD NAME	BEGINNING MILE POST	ENDING MILE POST	SEGMENT LENGTH	SURFACE	OPML	OBML	PRIMARY MAINTAINER	JURISDICTION	ALTERNATIVES	Consistent with CVC (Y-N)	Accident Probability (H-M-L)	Accident Severity (H-M-L)	Can Risks Be Mitigated (Y-N)/Remarks
23S10A	HORSE MEADOW	0.0	0.7	0.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 5	Y			
23S20	ROADS END G.S.	0	0.1	0.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 5	Y			
23S33	DAVIS CANYON	0.0	2.0	2.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
23S53	DAVIS CANYON	0.0	1.5	1.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
23S73A	SPEAS MEADOW	0	0.9	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S02	BAKER POINT	0	3.1	3.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	4 - MODERATE DEGREE OF USER COMFORT	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S03	SCHULTZ	0	1.5	1.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S07	SANDY CREEK	4.5	11.9	7.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
27S07A	SANDY CREEK	0.0	0.1	0.1	NATIVE	ADD	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			Add as ML2.
24S08	TOBIAS PEAK L.O.	0.0	1.2	1.2	NATIVE	CHG to 2 - 1 - BASIC CUSTODIAL CARE (CLOSED)	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			
24S10	PORTUGUESE MDW.	0.0	0.7	0.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
24S12D	CANNELL	0	0.1	0.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S15	PORTUGUESE MDW.	3.4	3.5	0.1	NATIVE	3 - SUITABLE FOR PASSENGER CARS	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	3, MOD3	Y	M	M	Y; signing and veg clearing complete consult w/ CHP.
24S24	TOBIAS MEADOW	0.0	3.3	3.3	NATIVE	CHG 3 - SUITABLE FOR PASSENGER CARS	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y	M	M	Y; signing and reduce to ML2.
24S25	MC SWINEY BLVD	0	2.3	2.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S28	SUNDAY PEAK	0	0.4	0.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S31	EAST HORSE MDW.	0.0	1.6	1.6	NATIVE	CHG to 2 - 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			

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24S34	TYLER MEADOW	0	1.4	1.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S34A	TYLER MEADOW	0	0.4	0.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S35	SHULTZ CREEK	0	8.1	8.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S35A	SHULTZ CREEK	0	0.8	0.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
24S36	SHULTZ CREEK	0	1.6	1.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 5	Y			
24S37	SOUTH DRY MDW	0	1.1	1.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S39	CANE MEADOW	1.9	2.3	0.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S45	STORMY CANYON	0	0.5	0.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
24S46A	DEEP CREEK	0	0.4	0.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
24S50	GREENHORN MTN.	4.5	5.5	1.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S50	GREENHORN MTN.	0	4.5	4.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S50A	GREENHORN MTN.	0.0	0.4	0.4	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			
24S77	EAST HORSE	0.0	1.5	1.5	NATIVE	CHG TO 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			
24S80	LOWER DRY MEADOW	0.0	0.8	0.8	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			
24S80A	LOWER DRY MEADOW	0.0	0.3	0.3	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	3, MOD3	Y			
24S80C	LOWER DRY MEADOW	0.0	0.4	0.4	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	3, MOD3	Y			
24S83	UPPER DRY MEADOW	0	2.5	2.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24S86	FROG MEADOW	0.0	0.6	0.6	EX - EXISTING	CHG 3 - SUITABLE FOR PASSENGER CARS	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y	M	M	Y: signing and reduce to ML 2.

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24588	VINCENT MEADOW	0	0.9	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
24589	RINCON TRAIL ACCESS	0.0	1.2	1.2	NATIVE	ADD	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	MOD3	Y			Add as ML2.
25502	WAGY FLAT	0	1.9	1.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25504	ALDER CREEK	3.1	9.5	6.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25504	ALDER CREEK	0.0	3.1	3.1	NATIVE	CHG 3 - SUITABLE FOR PASSENGER CARS	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	3, MOD3	Y	M	M	Y, signing and reduce to ML 2 which may exclude some campground users.
25506	TIGER FLAT C. G.	0	0.0	0.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25506	TIGER FLAT C. G.	0.0	0.2	0.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
25507	CEDAR CREEK C.G.	0	0.046	0.046	NATIVE	CHG 3 - SUITABLE FOR PASSENGER CARS	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1	Y	L	M	ML 2 but not sensible as segment is isolated and accessed only from SH 156.
25511	GREENHORN EAST	0	1.2	1.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25511	GREENHORN EAST	1.2	1.9	0.7	NATIVE	CHG to 2 - 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			
25511	GREENHORN EAST	1.9	3.6	1.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25512	ALDER CREEK C.G.	0	0.1	0.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25514	CEDAR CREEK	0	0.1	0.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25514	CEDAR CREEK	0.1	1.0	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
25515D	RANCHERIA	0.0	0.3	0.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
25516	CALF CREEK	0	3.5	3.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25516	CALF CREEK	3.5	4.5	1.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 3, MOD 3, 4, 5	Y			
25518	CANE	0	0.0	0.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			

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25S18A	CANE	0	0.2	0.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25S19	COW CREEK	0.0	0.8	0.8	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1	Y			
25S19	COW CREEK	0.0	0.0	0.0	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			
25S21	COOKS PEAK	0.0	4.2	4.2	NATIVE	CHG 3 - SUITABLE FOR PASSENGER CARS	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, MOD3	Y	L	M	N. risks are already fairly low; reduce to ML 2.
25S25	SHIRLEY SPRINGS	0	0.5	0.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25S28	OWL MINE	0	1.3	1.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25S30	SHIRLEY CR. NORTH	0	0.5	0.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, 5, MOD 3	Y			
25S31	SHIRLEY MEADOWS	0	0.9	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25S32	SHIRLEY CREEK	0	0.2	0.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	P - PRIVATE	FS - FOREST SERVICE	ALL	Y			
25S36	BLACK	0.0	0.2	0.2	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25S36	BLACK	0.2	0.4	0.2	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1	Y			
25S37	CAVE	0	0.6	0.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25S38	BULL RUN BASIN	0.0	1.0	1.0	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			
25S38A	BULL RUN BASIN	0.0	0.5	0.5	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, MOD3	Y			
25S39	SILVER STRAND	0	1.0	1.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
25S39	SILVER STRAND	1.0	1.4	0.4	NATIVE	ADD	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			Add as ML2.
25S45	FAY RANCH	2.0	3.4	1.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
26S01	GREENHORN MTN. WEST	0.0	1.3	1.3	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	3, MOD3	Y			

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26S01A	GREENHORN MTN. WEST	0	0.4	0.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
26S04	BROWNS MILL	0	3.4	3.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S05	BASKET PASS	0	4.6	4.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S05	BASKET PASS	4.6	8.0	3.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 5	Y			
26S06	BLACK GULCH	0	2.9	2.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S06	BLACK GULCH	3.1	7.8	4.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
26S06	BLACK GULCH	8.3	9.2	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
26S06A	BLACK GULCH	0	0.0	0.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
26S06B	BLACK GULCH	0	0.0	0.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
26S07	FRANK	0	0.9	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3	Y			
26S07	FRANK	0.9	2.0	1.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2	Y			
26S07A	FRANK	0	0.5	0.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3	Y			
26S12	LITTLE POSO CREEK	0	1.7	1.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S12	LITTLE POSO CREEK	1.7	1.8	0.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, 4, MOD 3	Y			
26S13	DAVIS ROAD	0	0.8	0.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S13B	DAVIS ROAD	0.0	0.0	0.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
26S16	OLD LIKELY MILL	0.0	2.6	2.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2	Y			
26S18A	EVANS FLAT WEST	0	0.3	0.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			

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26S19	RHYMES	0.3	0.8	0.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S19	RHYMES	0.0	0.3	0.3	NATIVE	CHG 3 - SUITABLE FOR PASSENGER CARS	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, MOD3	Y	M	M	Y; signing and reduce to ML 2.
26S19	RHYMES	0.3	0.7	0.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S19	RHYMES	0.7	1.2	0.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S19	RHYMES	1.2	2.1	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2	Y			
26S19	RHYMES	2.1	2.6	0.5	NATIVE	CHG to 2; 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1	Y			
26S20	LIKELY SADDLE	0	0.3	0.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S20	LIKELY SADDLE	0.4	1.2	0.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, 4, MOD 3	Y			
26S24	LONE STAR	0.0	1.6	1.6	NATIVE	CHG to 2; 1 - BASIC CUSTODIAL CARE (CLOSED)	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			
26S24A	LONE STAR	0.0	0.5	0.5	NATIVE	ADD	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			Add as ML 2.
26S25	OAK RIDGE	0	2.5	2.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2	Y			
26S27	EVANS FLAT CG	0.0	0.4	0.4	NATIVE	CHG 3 - SUITABLE FOR PASSENGER CARS	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y	M	M	Y; signing and reduce to ML 2.
26S29	POSO CREEK EAST	0	0.8	0.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S30	DAVIS LOOP	0	0.9	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
26S37	PETITIT	0	6.0	6.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
27S01	ROUGH AND READY MTN.	0.0	0.2	0.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 3, 5, MOD 3	Y			
27S01A	ROUGH AND READY MTN.	0.0	0.6	0.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 3, 5, MOD 3	Y			
27S02	PIUTE MTN.	0	17.0	17.0	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			

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27508	BOREL	0	0.8	0.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
27510	HOOPER HILL	0.0	0.0	0.0	NATIVE	Chg to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1	Y			
27513	EAGLE	0	2.3	2.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
27520	OAK FLAT L.O.	0	0.9	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
27529	GROUP CAMP	0.0	0.3	0.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
27530	REC MINE	0	1.8	1.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
27530A	REC MINE	0	0.3	0.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
27530A	REC MINE	0.3	1.1	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
27533	OVERPASS	0	0.9	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 5	Y			
27537	CHINA GARDEN	0.0	0.0	0.3	NATIVE	CHG 3 - SUITABLE FOR PASSENGER CARS	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1	Y	M	M	Mt. 2 but not sensible as segment is isolated and accessed only from SH 178.
27537	CHINA GARDEN	0.3	0.9	0.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
27537A	CHINA GARDEN	0.0	0.4	0.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
28505	LIEBEL PEAK	0	0.5	0.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28507	BRECKENRIDGE L.O.	0	3.9	3.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28507A	BRECKENRIDGE L.O.	0	0.3	0.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28507C	BRECKENRIDGE L.O.	0	0.1	0.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
28507D	BRECKENRIDGE L.O.	0.0	0.2	0.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28508	GOLF MEADOW	0	0.7	0.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, MOD 3, 4	Y			

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28S08	GOLF MEADOW	0.7	2.1	1.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, MOD 3	Y			
28S08	GOLF MEADOW	2.1	3.6	1.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, MOD 3	Y			
28S09	COW FLAT	0	12.2	12.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28S09A	COW FLAT	0.0	0.3	0.3	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			
28S10	SQUIRREL	0.0	1.6	1.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28S14	DOUGHTERY	0.0	1.3	1.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, MOD 3, 5	Y			
28S17	PIUTE TEMP. L.O.	0	2.8	2.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28S17A	PIUTE TEMP L.O.	0	0.5	0.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28S17B	PIUTE TEMP L.O.	0	1.2	1.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28S18	BROWN MEADOW	0	2.8	2.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28S18A	BROWN MEADOW	0.0	0.3	0.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28S18B	BROWN MEADOW	0	0.8	0.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28S19	O'BRIAN SPRINGS	0	0.4	0.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, MOD 3	Y			
28S19	O'BRIAN SPRINGS	0.4	1.3	0.9	NATIVE	CHG to 2: 1 - BASIC CUSTODIAL CARE (CLOSED)	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, MOD3	Y			
28S21	BRECKENRIDGE C.G.	0	0.3	0.3	NATIVE	CHG 3 - SUITABLE FOR PASSENGER CARS	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y	L	M	Y: signing and reduce to ML 2.
28S22	MUNZER MDW.	0	0.9	0.9	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, 4, MOD 3	Y			
28S23	PEAK	0	1.6	1.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28S24	WOOLSTAFF MDW.	0	6.6	6.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			

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28527	FRENCH MEADOW	0	3.8	3.8	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28527A	FRENCH MEADOW	0	1.1	1.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28528	VALLEY VIEW	0.0	0.2	0.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28533	PIUTE SPRING	0	0.6	0.6	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28544A	SOLOMONS RIDGE	0	0.5	0.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28547	BROWN MDW. SOUTH	0	2.5	2.5	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28547A	BROWN MDW. SOUTH	0	0.4	0.4	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28547B	BROWN MDW. SOUTH	0	1.1	1.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	1 - BASIC CUSTODIAL CARE (CLOSED)	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28562	GROUSE SPRING	0.0	5.7	5.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28562	GROUSE SPRING	5.7	5.9	0.2	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 2, 3, MOD 3, 4	Y			
28562B	BRECKENRIDGE I.O. GROUSE SPRING	0	0.1	0.1	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
28562C	GROUSE SPRING	0.0	0.1	0.1	NATIVE	ADD	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			Add as ML2.
28581	DOUGHERTY CREEK	0.0	0.7	0.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	2, 5	Y			
29502	FRANCESCHI MINE	1.6	6.4	4.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
29504	SORREL PEAK	0	2.7	2.7	NATIVE	2 - HIGH CLEARANCE VEHICLES	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
29505	LANDERS W.C.	0	1.3	1.3	NATIVE	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	FS - FOREST SERVICE	FS - FOREST SERVICE	ALL	Y			
U01088	QUONSET BEACH	0.0	1.1	1.1	NATIVE	ADD	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	1, 3, 4, MOD3	Y			Add as ML2.
U01223	EVANS FLAT CG LOOP	0.0	0.2	0.2	NATIVE	ADD	2 - HIGH CLEARANCE VEHICLES	FS - FOREST SERVICE	FS - FOREST SERVICE	3, 4, MOD3	Y			Add as ML2.

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	TOTAL MILES			234.9										

## ***Appendix F***

### ***Past, Present, and Foreseeable Actions for Cumulative Effects Analysis***

According to the Council on Environmental Quality (CEQ) NEPA regulations, “cumulative impact” is the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7). The Forest queried its databases, including the Schedule of Proposed Actions, to determine past, present, and reasonably foreseeable future actions.

Vegetation data for the Forest includes spatial ecological and vegetation layers created from remote-sensing imagery obtained at various points in time, which are verified using photo-imagery, on-the-ground measurements, and tracking of vegetation-changing actions or events (for example, timber sales and wildland fires). Past actions considered in this analysis are listed below and include those that have occurred since the last Forest mapping update in 2003. For assessment of future projects, the Forest completes a quarterly “Schedule of Proposed Actions (SOPA)” which tracks proposals that are ongoing or have sufficient detail to ensure that they are reasonably foreseeable. The total list of actions presented on the SOPA is not included here. Some projects have been cancelled or are undergoing revision, with others not included because they have limited scope and intensity and present no appreciative impact on available habitat.

### **Cumulative Assessment of Condor Roost Polygons and Impacts to Essential Habitat: Past and Current Activities**

#### **Grazing**

There are portions of 29 cattle grazing allotments within the Travel Management Project area. Livestock grazing has been an ongoing activity prior to the establishment of the Forest and has been substantially reduced from levels historically noted. Improved management of the grazing program has been promoted through establishment of allotment-specific management plans (AMP) and yearly issuance of Annual Operating Instructions (AOI). These documents specify requirements for adherence to appropriate best management practices for natural resource protection and implement appropriate utilization standards to maintain adequate forage and shrub cover levels. Because grazing is a past, ongoing, and foreseeable future action and because use levels and associated impacts from this activity are not expected to change as a result of

implementation of the proposed action, cattle grazing activity is not expected to contribute measurable impacts to habitats.

### Wildfires

There have been 17 wildfires encompassing some 44,127 acres in the analysis area (Table F-1). Three wildfires occur in the Piute Mountains (37,099 acres), four in the lower Kern River Canyon (468 acres), five adjacent to Lake Isabella (737 acres), and three in the Upper Kern Canyon (north fork drainage)(5,803 acres). The most significant was the Piute Fire of 2008 (36,992 acres) which represents approximately 83% of the total acres burned for the period considered. The Piute Fire resulted in some resource damage from a wildlife perspective, due to its relatively large size and resultant reduction in forest and shrub cover types, impacts to riparian habitats, loss of ground cover, and soil loss through post-fire rain events. Wildfires in the lower Kern Canyon were kept relatively small, ranging from 13 to 290 acres. All occurred primarily in annual grassland/oak/shrub vegetation types with minimal impacts to large trees and down logs. Fires located at Lake Isabella ranged from <1 acre to 512 acres. Most were started near existing campground facilities and remained small due to the influence of the lake and lack dense vegetation. The upper Kern River fires ranged from 567 acres to 4,196 acres; they occurred in areas dominated by annual grass, chaparral, foothill pine, and rock outcrop. Additionally, some loss of riparian habitat near streams and springs occurred in areas within the Goldledge Fire.

**Table F-1. Wildfires Within the Travel Management Project Area Over the Last Five Years**

Fire Name	Year	Total Acres	Acres in Project Area
FAYE	2005	19	<1
KOA	2005	71	63
NINE	2005	1150	512
CHINA	2004	290	290
CAMP	2004	692	142
COTTONWOOD	2006	2344	96
SIERRA	2004	60	14
BRIGHT	2006	19	19
BROKE	2006	15	6
DEMOCRAT	2006	48	48
CORTEZ	2006	11	11
GOLDLEDGE	2007	4,196	4,196
JAMES	2007	1,349	1,311
RICHBAR	2007	13	13
RIVER	2007	150	117

WOFFORD	2007	567	296
PIUTE	2008	37,026	36,992

### Timber Harvest/Silviculture/Fuel Treatments

Table F-2 provides a list of potential habitat altering projects that have occurred or are ongoing in the cumulative effects analysis area. Since 2004, approximately 2,200 acres have been treated for roughly 2.3% of the cumulative effects analysis area. All projects were developed and designed to meet the provisions of the Sierra Nevada Forest Plan Amendment (SNFPA) (USDA 2001 and 2004) which modified Forest Plans in Region 5. The SNFPA took an ecologically-based approach and developed a series of conservation strategies to address five problem areas in the Sierra Nevada with range-wide significance. Many of the strategies discussed implement specific standards and guidelines that would be beneficial for the species considered. Examples include provisions for maintenance of higher snag retention levels in forest stands than previously stipulated in the 1988 Forest Plan, protection measure for riparian conservation areas, and measures to remove dense fuels from urban interface zones with high susceptibility for wildfire, decreasing the opportunity for future losses of habitat.

Of the actions discussed, the largest percentage of the acres treated (71%) were for pre-commercial thinning projects which removed small trees (<12"dbh) and brush, with 19% of treated acres receiving fuel reduction work through prescribed burning such as pile/burn, jackpot pile and burn, or underburning. The remaining 10% of the acreage treated involved projects where commercial thinning or salvage harvest occurred. All of these included standards for large tree and snag retention.

**Table F-2. Projects That Have Occurred or Are Ongoing in the Project Area**

Project Description	Project	Project Description	Acres Treated	Year of Implementation
Rx Burn	HS_Compartment 312, unit 74	A fuels reduction project involving piling and burning.	19	2006
	River Kern	A fuels reduction project involving piling and burning.	81	2004-2006
	HS Penny Pines Piles	A fuels reduction project involving piling fuels.	108	2006
	Hungry-French Pile Burning	A fuels reduction project involving burning activity fuels.	4	2007
	Summit Rec Tract	A fuels reduction project involving piling and burning.	4	2007

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Project Description	Project	Project Description	Acres Treated	Year of Implementation
	Kernville Defensible Space	A fuels reduction project involving chipping, piling and burning.	110	2007-2008
	Alta Sierra	A fuels reduction project involving piling and burning.	81	2004-2006
	Tule River Plantation	A fuels reduction project involving piling and burning.	876	2004
<b>Commercial Thinning – Removal of trees &gt; 12” dbh</b>	Alta Sierra Phase II	Commercial thinning.	360	2006 - 2007
	Ice Helicopter	Commercial thinning.	136	2006 - 2007
<b>Pre-commercial - may include thinning of small trees (&lt;12” dbh), site prep, or burning</b>	Frog	Pre-commercial thin.	43	2004-2007
	Pre-commercial thinning	Pre-commercial thin.	108	2006
	Burnt Ridge	Individual tree release and weed.	55	2005
	Red Mountain/Red Mountain Thinning	Pre-commercial thin.	385	2004
	White River	Pre-commercial thin on 11 acres and piling of activity fuels on 6 acres.	16	2005
	Ice Helicopter	Pre-commercial thin	184	2006-2007
	Red Mt. Phase II	Pre-commercial thin. Activity fuels prescribed burning.	1,050 195	2005-2008
	McNally Sherman Pass Restoration Project	Mechanical site preparation for planting.	57	2007
	McNally Reforestation	Mechanical site preparation for planting.	184	2005
<b>Salvage Cut and RX Burn</b>	Frog	Salvage cut.	338	2004, 2007
		Salvage and underburn.	137	
	McNally Sherman Pass Restoration Project	Salvage.  Prescribe burn of activity fuels piles.	81  192	2005, 2007-2008

## Recreation

The project area encompasses several small mountain communities and areas of private land in a scattered distribution. Popular recreation uses are generally confined to fishing, hunting, camping, or hiking, off-highway vehicle use,

whitewater rafting, and snow skiing. There are also a number of small load placer mining claims active in the project area.

### **Hydro-Electric Facilities**

Southern California Edison operates three run of the river hydropower projects which include Kern River No. 3 (FERC Project No. 2290) located on the North Fork Kern River, Borel Hydropower Project (FERC 382) located just below Lake Isabella dam, and Kern River No 1 (FERC No 1930) located approximately 13 miles downstream of the Borel powerhouse on the Lower Kern River.

Pacific Gas and Electric Kern Canyon 178 Hydropower Project (FERC No. 178) has a diversion dam adjacent to the Kern River No. 1 power plant. The diversion dam forms a small pond of water from the Kern River No. 1 power plant and the Lower Kern River. This water is diverted through three miles of tunnels to the 11.5 megawatt Kern Canyon 178 power plant and returned to the river. All of these run of the River Projects undergo environmental review through the Federal Energy Regulatory Commission re-licensing process. As such impacts to TES species are considered with appropriate management guidelines stipulated for their protection or conservation.

### **Potential Future Activities**

Two potential future projects identified on the SOPA (August 2008) were the Valley View Project and the Alta Sierra Fuels Reduction Project. Both are currently “on hold” and are undergoing revisions and reconsideration given budgetary constraints. Until further information is available, it is unknown whether these projects will move forward.

***Appendix G***  
***Response to Comments***

The Sequoia National Forest has documented, analyzed, and responded to the public comments received on the Motorized Travel Management Draft Environmental Impact Statement (DEIS). This appendix includes a description of the formal public comment analysis process, and a list of public concerns and responses. Public concern statements and our responses are organized by section to mirror the order of the resource topics in the Final Environmental Impact Statement (FEIS). This appendix also includes copies of the city, county, state, federal, and tribal agency letters received and our letters of response. This response complies with Section 40 CFR 1503.4, Response to Comments, of the National Environmental Policy Act (NEPA) regulations.

During the public comment period on the DEIS running from January 31 to April 20, 2009, the public submitted 6,593 separate pieces of input, called “responses.” Responses were received in a variety of forms, including letters, faxes, e-mails, and public meeting comment forms.

### **Analysis of Public Comment on the DEIS**

All letters, e-mails, faxes, and comment forms received as public comment on the Travel Management DEIS were compiled, organized, read, and analyzed by the interdisciplinary team. The team used a process called “content analysis,” which reviews public comment through the creation and use of a comprehensive electronic comment database.

Each letter, postcard, e-mail, fax, or public comment form (referred to as “response letters” in this appendix) was assigned a unique identifier number. Each author or signatory to a response is called a “respondent.” All respondents’ names and addresses were entered into a project-specific database to produce a mailing list. Respondents are linked to their individual responses and comments in the database using their identifier numbers.

All response letters were read in their entirety and discrete comments were identified that relate to a particular topic of concern or resource consideration. Each comment was assigned numerical codes identifying the subject area(s) it covered. In the 6,593 responses, the team identified 987 separate public comments which were copied verbatim into the comment database. This database serves as the complete record of comments and allows database analysts and planning team members to query the comments in a number of ways.

The content analysis process also identified all response letters that were submitted as part of an organized response (or “form letter”) campaign and contain identical comments. These were grouped by campaign. A “master” campaign letter was coded and its comments entered into the database the same way as the non-campaign comments. If a respondent added original comments to the organized response letter he or she submitted, these comments were identified, coded, and entered into the database as well.

Members of the planning team then reviewed a report of all of the comments, sorted by resource topic or code, and wrote public concern statements to summarize comments that present similar arguments or positions. Each statement can represent one or many comments, depending on the actual comments submitted and reflecting the content of verbatim public comments. Each public concern statement is worded to capture the action that one or more members of the public feel the Sequoia National Forest should take.

The interdisciplinary team reviewed the public concern statements, sample comments, and, in some cases, the original responses to ascertain the full context for the concern statement. They evaluated whether they triggered a change in the environmental analysis, and drafted responses. The team provided responses to 231 consolidated concerns in this appendix.

### **Comment Response**

It is important to note that, during the process of identifying concerns, all comments have been treated equally. They are not weighted by organizational affiliation or status of respondents, and it does not matter if an idea was expressed by thousands of people or a single person. Emphasis is placed on the content of a comment rather than who wrote it or the number of people who agree with it. The process is not one of counting votes and no effort was made to tabulate the exact number of people for or against any given aspect of the DEIS.

Table PC-1 presents the number of responses (response letters in any form), the number of signatures on those responses, and the number of unique substantive comments received during the public comment period for the Motorized Travel Management DEIS.

**Table PC-1. Number of Responses, Signatures, and Comments Received**

<b>Number of Responses</b>	<b>Number of Signatures</b>	<b>Number of Comments*</b>
6,593	6,651	987

**\*Note:** This count includes comments from each master organized response campaign letter, but not the total number of the comments submitted by all

respondents of each response campaign (i.e., identical comments were only counted once).

### **Considering Different Types of Comments under the National Environmental Policy Act**

Agencies have a responsibility to first “assess and consider comments both individually and collectively” and then to “respond...stating its response in the final statement.” The content analysis process considers comments received “individually and collectively” and considers them equally, not weighting them by the number received, or by organizational affiliation, or by any other status of the respondent.

The NEPA requires that, after we consider comments, we formally respond to substantive comments. We classified comments, or the concerns identified from them, as either falling within the scope of decision-making for the Travel Management DEIS or falling outside of the scope for any number of reasons described below. Generally, the types of comments received and concerns identified that were considered outside of the scope included those that:

- Do not address the purpose, need, or goals of the Travel Management Project (e.g., propose an action in areas outside the project area or that does not directly relate to the action proposed in the plan)
- Address concerns that are already decided by federal law or national policy
- Suggest an action not appropriate for the current level of planning (e.g., site-specific decisions to construct new roads, campgrounds or facilities, to offer special use permits)
- Propose untenable restrictions on management of the SQF or conflict with approved plans not being revised in the travel management planning process
- Do not consider reasonable and foreseeable negative consequences
- Point to only minor editorial corrections

We further classified comments within the scope of the plan as either substantive or non-substantive. Based on the Council of Environmental Quality’s regulations, a substantive comment is one that:

- Questions, with a reasonable basis, the accuracy of the information in the environmental impact statement. Questions, with a reasonable basis, the adequacy of environmental analysis as presented.
- Presents reasonable alternatives other than those presented in the DEIS that meet the purpose and need of the proposed action and address significant issues.

- Causes changes or revisions in the proposal.

Non-substantive comments, or concerns identified from them, include those that simply state a position in favor of or against an alternative, merely agree or disagree with Forest Service policy, or otherwise express an unsupported personal preference or opinion.

### **Response to Comments on the Motorized Travel Management DEIS**

The following public concern statements are identified by a letter and number in order to facilitate tracking throughout the content analysis process. These numbers are not necessarily sequential; not all numbers in sequence have been used due to the iterative nature of public concern identification, and these numbers in no way indicate a ranking by priority or importance. Interested parties may consult the content analysis reports and the reading file of original response letters on file at the Supervisor's Office in Porterville, CA.

### **Planning and Process**

**PC 17: The Sequoia National Forest should include in Appendix F and its analysis of cumulative effects that all Region 5 forests are preparing travel management plans.**

**Response:** According to the Council on Environmental Quality (CEQ) NEPA regulations, "cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions (40 CFR 1508.7). The proposed changes to the NFTS in this analysis are not connected actions to other national forest's travel management analyses, even though some of the same users also frequent adjacent forests. Changes proposed to the SQF NFTS will not directly affect the NFTS of other national forests. Therefore, including other Region 5 forest's travel management proposals as a foreseeable future action is not needed.

**PC 22: The Sequoia National Forest should complete the planning process for the Piute Mountains area as soon as possible.**

**Response:** Due to the Piute Fire, which burned over 37,000 acres, and a subsequent series of heavy rain events in the Piute Mountains area, the Forest Supervisor decided to remove all of the changes to the NFTS (including the addition of unauthorized routes and changes to vehicle class) and only consider the prohibition of cross-country travel in this area in this Motorized Travel Management EIS. The SQF will analyze changes to the NFTS in the Piute Mountains area in a subsequent environmental document sometime after a decision is made on this project.

**PC 24: The Sequoia National Forest should not limit the range of alternatives and the decision by adding unsupported language in the Purpose and Need.**

**Response:** Need #1 in the Purpose and Need section states: “The proliferation of unplanned, unauthorized, non-sustainable roads, trails, and areas created by cross-country travel adversely impacts the environment.” Cross-country motor vehicle travel has resulted in impacts to various natural resources within the project area. Not all routes were proposed to be added to the NFTS as part of an action alternative; many were found to be affecting a particular natural resource in their current alignment. Others were considered for addition with proposed mitigation measures. The Forest Service considered adding roads, trails, and areas to the NFTS that were determined to be sustainable.

**PC 102: The Sequoia National Forest should provide documentation for the conclusions shown in Table 2-H.**

**Response:** Table 2-H summarizes the effects by resource area and alternative as described in Chapter 3 of the EIS. The conclusions in this table are supported by and based on the methodology used, the environmental consequences determined, and the professional judgment of a resource specialist in each section of Chapter 3.

**PC 103: The Sequoia National Forest should modify Alternative 5 to include deletions in Alternative 4 and prohibit cross-country travel.**

**Response:** The deciding official determined that Alternative 4 was adequate and appropriate to provide a range of reasonable alternatives. Modifying Alternative 5 in this manner and making Alternatives 4 and 5 very similar would not reflect a reasonable range of alternatives. Alternative 5 already includes the prohibition of cross-country motor vehicle by the public.

**PC 109: The Sequoia National Forest should provide a range of alternatives with clear cut advantages and disadvantages.**

**Response:** There are six alternatives for consideration in the FEIS. Chapter 1 includes a section called Comparison of Alternatives which compares and contrasts the alternatives.

**PC 110: The Sequoia National Forest should provide a range of reasonable alternatives that includes the minimum transportation system.**

**Response:** The Travel Management Rule is comprised of three parts: Subpart A, Administration of the Forest Transportation System; Subpart B, Designation of Roads, Trails, and Areas for Motor Vehicle Use; and Subpart C, Use by Over-snow Vehicles. The Rule does not establish requirements for the order in which to implement the three parts of the Rule. The scope of this action is limited to implementation of Subpart B and is focused on the prohibition of cross-country motor vehicle travel and the production of a MVUM. The identification of the future road system and minimum NFTS needed for administration, utilization, and protection of NFS lands is contained in Subpart A. There is no legal requirement

in the regulations for the agency to implement Subpart A as a pre-condition to, or part of, the current proposed action.

A full range of alternatives was developed for this project. Based on the issues and concerns identified in public comment on the Proposed Action, the SQF developed four alternatives that achieve the purpose and need differently than the Proposed Action. In addition, the Forest Service considered other alternatives submitted during the scoping period, as discussed in Chapter 2. Comments received on the Draft EIS were used to evaluate the alternatives and develop Modified Alternative 3.

**PC 111: The Sequoia National Forest should include the Wilderness Society's closure recommendations in an alternative.**

**Response:** NFTS routes recommended for closure by the Wilderness Society and others that were not identified in the Purpose and Need (Chapter 1) for the Travel Management Project are considered outside the scope of this analysis and the decision to be made.

**PC 112: The Sequoia National Forest should provide an alternative that supports current levels of motorized use.**

**Response:** Information on current levels of motorized use was used in the development of the alternatives, including public input and forest personnel knowledge and experience.

**PC 113: The Sequoia National Forest should describe the criteria used to trigger season of use implementation.**

**Response:** For the Proposed Action, Alternative 1, anticipated snow levels based on elevation were used to determine the season of use for each route. The season of use was based on three elevation ranges, resulting in three different seasons of use: year-round (lower elevations), 5/1-11/15 (middle elevations), and 5/15-11/15 (higher elevations). Under Alternatives 3, Modified 3, and 4, the proposed season of use was modified to consider wildlife concerns and those routes only accessible from higher elevations.

**PC 120: The Sequoia National Forest should select an alternative that permits human access for those who will discover, appreciate, and help preserve a precious natural resource, while keeping the physical and ecological systems as free from impact as possible.**

**Response:** The Purpose and Need in Chapter 1 describes the need to provide access for dispersed recreation opportunities as well as motorized recreation opportunities, while addressing resource concerns on specific routes. The Record of Decision discusses the reasons for selecting Modified Alternative 3 as meeting the purpose and need and responding to the significant issue of access and motorized recreation opportunity, while protecting natural resources. All practicable means to avoid or minimize environmental harm have been adopted in the design of the selected alternative.

**PC 128: The Sequoia National Forest should provide NEPA documentation on an analysis of all roads and OHV trails proposed, including those previously omitted from an analysis.**

**Response:** Chapter 3 includes the environmental analysis for all routes proposed to be added to the NFTS. Existing NFTS routes are included in indirect and cumulative effects analyses.

**PC 130: The Sequoia National Forest should keep all routes open in the Piutes until subsequent analysis is completed.**

**Response:** NFTS roads and trails in the Piute Mountain area will still be available for motorized travel. Due to the Piute Fire and subsequent heavy rain events in the Piute Mountains area, only the prohibition of cross-country travel is being considered in this area, not any changes or additions to the NFTS. Existing unauthorized routes are not considered for addition to the NFTS at this time. The SQF will analyze changes to the NFTS, including adding currently unauthorized routes, in the Piute Mountains area in a subsequent environmental document sometime after a decision is made on this project.

**PC 131: The Sequoia National Forest should state the origin of the authority for the Travel Management Rule.**

**Response:** For the background, purpose and need for this project, please see Chapter 1. Unmanaged recreation, including impacts from OHVs, is one of “Four Key Threats Facing the Nation’s Forests and Grasslands” (USDA Forest Service, June 2004). On November 9, 2005, the Forest Service published final travel management regulations in the Federal Register (FR Vol. 70, No. 216-Nov. 9, 2005, pp 68264-68291). This final Travel Management Rule requires designation of those roads, trails, and areas that are open to motor vehicle use on national forests. Only roads that are part of a NFTS may be designated for motorized use. Designations are made by class of vehicle and, if appropriate, by time of year or season of use. The final rule prohibits the use of motor vehicles off of designated NFTS roads, NFTS trails, and areas, as well as the use of motor vehicles on roads and trails that are not specifically designated for public use.

**PC 132: The Sequoia National Forest should coordinate with other agencies and local governments.**

**Response:** As described in Chapter 3 by resource topic, the Forest Service has consulted with other agencies and local governments regarding this project, including the County of Kern.

**PC 134: The Sequoia National Forest should consider the Corps of Engineers routes when developing the plan.**

**Response:** All of the alternatives in this FEIS include those roads described in the Lake Isabella Master Plan developed by the U.S. Army Corps of Engineers in September of 1979.

**PC 135: The Sequoia National Forest should take into consideration state constitutional access laws giving citizen the perpetual right of access to waterways.**

**Response:** Article X of section 4 of the California state constitution guarantees access to navigable waters of the state. The Forest Service did not propose to prohibit general access (including non-motorized recreation use) to Lake Isabella under all the action alternatives. In the FEIS, Under Modified Alternative 3, the Forest Service proposes to add 16 areas around Lake Isabella; providing additional motorized access when compared to the other action alternatives.

**PC 136: The Sequoia National Forest should follow its own five-step process and analyze all inventoried trails before moving forward with a travel management plan.**

**Response:**

The five-step process is as follows:

1. Map (GPS) existing unclassified roads, motorized vehicle trails (both NFS and non-system), and off-route use areas, and enter the data in GIS (Geographic Information System) and INFRA (Infrastructure database). Designate team leaders, compile Forest OHV Management Direction, assemble needed information, identify gaps in data, prioritize, develop action plans, and begin field surveys. Share maps with the public by December 2005 (earlier if possible). Collect comments by March 2006.
2. Issue Forest Orders prohibiting motorized wheeled vehicle use off of mapped roads, trails, and off-route use areas. Involve the public. Complete no later than June 2006.
3. Evaluate inventoried roads, trails, and areas. Collaborate with the public in developing proposed systems of roads, trails, and specifically defined areas for use by wheeled motorized vehicles. Complete surveys of information and data gaps. Involve the public. Publish proposed action by June 2007. Collect public comments no later than thirty days after the Notice of Intent is published in the Federal Register.
4. Complete analyses and prepare NEPA documents designating all trails and specifically defined areas for wheeled motorized vehicle use. Involve the public. Complete Final Environmental Impact Statement no later than September 2009.
5. Publish Motor Vehicle Use Maps with designated roads, trails, and areas by December 2009.

All inventoried routes were evaluated and reviewed prior to being considered in an alternative. The Travel Management Rule provides a set of evaluation criteria for designating roads and trails and considering the availability of resources to maintain the system is a criterion. A number of other criteria also need to be taken into account, including the consideration of the effects of route designation on National Forest System natural and cultural resources, public safety, recreational opportunities, access needs, and conflicts among uses of National

Forest System lands. The decision whether to allow or not allow public use on roads and trails is not based solely on maintenance ability. All of the alternatives analyzed in the FEIS contain a significant number of miles of roads and trails open to motor vehicle use. Modified Alternative 3 was added between the DEIS and FEIS. Modified Alternative 3 provides a high level of access, while still minimizing impacts to certain resources. An effort was made in this alternative to provide a range of public wheeled motor vehicle access to various recreation opportunities.

**PC 137: The Sequoia National Forest should provide an explanation of what differentiates “system” roads and trails from “unauthorized” roads and trails.**

**Response:** The following definitions have been added to the “Terms Used for Roads and Trails (Routes) in the Descriptions of Alternatives” section in Chapter 2. These definitions are also found in the Glossary in Chapter 5.

Unauthorized Road or Trail. A road or trail that is not an NFTS road or trail or a temporary road or trail and that is not included in a forest transportation atlas (36 CFR 212.1).

National Forest System Road. A forest road other than a road which has been authorized by a legally documented right-of-way held by a state, county, or local public road authority (36 CFR 212.1).

National Forest System Trail. A forest trail other than a trail which has been authorized by a legally documented right-of-way held by a state, county, or local public road authority (36 CFR 212.1).

**PC 148: The Sequoia National Forest should comply with the Forest Service Strategic Plan.**

**Response:** The Forest Service Strategic Plan includes the need to reduce the threat of unmanaged recreation, particularly the unmanaged use of off-highway vehicles. Goal 1 of the strategic plan aims to restore and maintain healthy watersheds and diverse habitats. Goal 4 of the strategic plan aims to provide a variety of high quality recreational opportunities. The action alternatives meet these goals with different intensities; Alternatives 1, 3, and Modified 3 would increase motorized recreation quality (through the addition of routes and areas) more than Alternative 5 (current NFTS) with certain mitigation measures proposed meant to reduce impacts to natural resources. Alternative 4 would limit impacts to natural resources. All four action alternatives would reduce the threat of unmanaged motorized recreation use to natural resources.

**PC 149: The Sequoia National Forest should have more OHV specialists involved in the plan.**

**Response:** Thank you for your comment. Interdisciplinary team members for the Travel Management Project were selected because of their knowledge of different aspects of travel management and their ability to identify and to evaluate the potential direct, indirect, and cumulative social, economic, physical, and

biological effects of the alternatives. The Travel Management Rule applies to all public motor vehicle use on NFS lands, not just OHV use. The credentials of the interdisciplinary team members assigned to work on this project are listed in Chapter 4 of this EIS.

**PC 150: The Sequoia National Forest should explain why this is not a forest-wide travel management plan covering all areas of the SQF.**

**Response:** National forest routes and areas located outside of the project area are currently designated and cross-country travel is prohibited. As stated in Chapter 1:

- The Proclamation that created the Giant Sequoia National Monument in the SQF prohibited cross-country motorized vehicle use, permitting it only on designated roads and requiring a transportation plan for the monument. A Motor Vehicle Use Map (MVUM) has been produced for the Monument.
- Cross-country travel is already prohibited on approximately 14,260 acres of the Kern River Ranger District known primarily as the Kern Plateau.

**PC 155: The Sequoia National Forest should invest in education and encourage stewardship as part of the solution.**

**Response:** Although education and stewardship encouragement is not directly linked to the purpose and need or the actions proposed for this project, the SQF recognizes the value of educating the public and encouraging stewardship. The SQF applied for and received funding from the California State OHV Division to be used for OHV education and trail improvement.

**PC 156: The Sequoia National Forest should provide the documentation that shows public involvement was used to determine what tracks should be carried forward in the proposed action.**

**Response:** As related in the Public Involvement section of Chapter 1, information on specific routes requested by the public was given to the Forest Service at public meetings in 2006 and in response to scoping in 2007. These routes were considered by reviewing inventory maps, surveying the route on the ground, identifying the risks and benefits of the route, and an interdisciplinary review.

The description of each alternative (in Chapter 2) that proposes adding unauthorized routes as NFTS trails or roads contains tables listing those routes and the mitigation measures or actions required before they are added. A database containing the concerns and benefits identified for the unauthorized routes requested by the public is available upon request after publication of the FEIS. Because the concerns with some routes address sensitive sites, all resource information associated with unauthorized routes cannot be provided.

**PC 220: The Sequoia National Forest should change the definition of a significant issue in Chapter 1 to match the CEQ regulations.**

**Response:** The definition of a significant issue found in the Issues section of Chapter 1 is “those directly or indirectly caused by implementing the proposed action.” Non-significant issues were identified as those: 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations explain this delineation in Sec. 1501.7: “...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3)...”

**PC 221: The Sequoia National Forest should address other needs for this project.**

**Response:** The responsible official, using authorities provided by the final Travel Management Rule and the Memorandum of Understanding between the Pacific Southwest Region of the Forest Service, the California Off-Highway Motor Vehicle Recreation Commission, and the Off-Highway Motor Vehicle Recreation Division of the California Department of Parks and Recreation, determined the purpose and need for action for this project.

**PC 223: The Sequoia National Forest should review and follow Subpart B of the Travel Management regulations.**

**Response:** We believe the Purpose and Need for this project accurately captures the intent of Subpart B of the regulations and the executive orders those regulations are intended to implement. The executive orders direct federal agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands. The Travel Management regulations implement those orders by requiring designation of roads, trails, and areas for motor vehicle use and prohibiting motor vehicle use off of the designated system.

The Purpose and Need describes the needs to regulate unmanaged cross-country motor vehicle travel; to provide motor vehicle access to dispersed recreation opportunities; to provide a diversity of motorized recreation opportunities; to address resource, right-of-way, and lack of use concerns; and to be consistent with condor roost site protection standards and guidelines. As described in the preamble to the national travel management regulations, “(i)t is the intent of E.O. 11644 that motor vehicle use of trails and areas on federal lands be managed to address environmental and other impacts, but that motor vehicle use on federal lands continue in appropriate locations.”

**PC 224: The Sequoia National Forest should adjust the Purpose and Need statement to reflect the Executive Orders, Subparts A and B of the travel management regulations, and the purpose of travel planning.**

**Response:** The Travel Management Rule is comprised of three parts: Subpart A, Administration of the Forest Transportation System; Subpart B, Designation of Roads, Trails, and Areas for Motor Vehicle Use; and Subpart C, Use by Over-

snow Vehicles. The Rule does not establish requirements for the order in which to implement the three subparts. The identification of the future road system and minimum NFTS needed for administration, utilization, and protection of NFS lands is contained in Subpart A. The scope of this action is limited to implementation of Subpart B and is focused on the prohibition of cross-country motor vehicle travel and the production of a MVUM. There is no legal requirement in the regulations for the agency to implement Subpart A as a pre-condition to, or part of, the current proposed action.

The Forest Service believes the Purpose and Need accurately captures the intent of Subpart B of the regulations and the executive orders those regulations are intended to implement. The executive orders direct federal agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

**PC 240: The Sequoia National Forest should limit data used to the planning area.**

**Response:** Information, literature, and data used for this project was used after it was determined to be applicable to the project area. Much of the information used in the analysis process was site-specific to the project area.

**PC 241: The Sequoia National Forest should indicate the source of information or the basis for the conclusion drawn within the body of the report.**

**Response:** Thank you for your comment. References and footnotes are used throughout the FEIS, and references are listed alphabetically by author in Chapter 6.

**PC 246: The Sequoia National Forest should develop a Purpose and Need that addresses local trends and future desired conditions in the Sequoia National Forest.**

**Response:** The responsible official, using authorities provided by the final travel management rule and the MOU between the Pacific Southwest Region of the Forest Service, the California Off-Highway Motor Vehicle Recreation Commission, and the Off-Highway Motor Vehicle Recreation Division of the California Department of Parks and Recreation, determined the purpose and need for action for this project. The purpose and need statements found in Chapter 1 do address trends and desired conditions in the Sequoia National Forest in stating the need for action and other purposes to be achieved by this project.

**PC 250: The Sequoia National Forest should provide a clear diagram of the method employed to implement the “best meets the needs” mandate of the Multiple Use Act.**

**Response:** The Multiple Use Sustained Yield Act of 1960 authorizes and directs the Secretary of Agriculture to develop and administer the renewable resources of timber, range, water, recreation and wildlife on the national forests for multiple use and sustained yield of the products and services. "Multiple Use" is defined as : The management of all the various renewable surface resources of the national forest so that they are utilized in the combination that will best meet the needs of the American people. The Record of Decision will include a determination regarding this act.

**PC 261: The Sequoia National Forest should redesign Table 2-C to more clearly display the differences between alternatives.**

**Response:** This table in the Comparison of Alternatives section of Chapter 1 now shows the total mileage for each alternative.

**PC 268: The Sequoia National Forest should correct the numbering of the standards and guidelines under Objective 1.**

**Response:** Thank you for your comment. This section has been reviewed and corrected.

**PC 272: The Sequoia National Forest should include other types of recreational use in the overview of the Kern River Basin on page 184.**

**Response:** A description of the various recreation opportunities identified in the Kern River Basin has been added to the Project Area Description and Location section of Chapter 1.

**PC 286: The Sequoia National Forest should use the compensation credit system, documenting the considerations.**

**Response:** The FEIS will not include a determination regarding the compensation credit system. This request is outside the scope of this analysis and the decision to be made for this project.

**PC 287: The Sequoia National Forest should build the overdue 42 miles of OHV trails prescribed by the Forest Plan.**

**Response:** In an effort to keep the scope of the project manageable, the Forest Supervisor decided at the start of this project that construction of new routes would be outside the scope of this project. The Purpose and Need for this project does not include the need to build or develop new routes, but to consider adding existing unauthorized routes to the NFTS.

**PC 288: The Sequoia National Forest should monitor, using the BMPs and Standards and Guidelines, to ensure adequate implementation.**

**Response:** A description of monitoring activities is included in Appendix C.

**PC 296: The Sequoia National Forest should display a table that clearly identifies the difference between alternatives in mileage open, closed, or limited, such that the differences are sharply defined.**

**Response:** The alternatives are compared in the Comparison of Alternatives section of Chapter 1. Alternatives are compared in several tables by Outputs, Issues, and Environmental Effects.

**PC 297: The Sequoia National Forest should consider the alternative suggested by the Stewards of the Sequoia National Forest.**

**Response:** Routes and other suggestions proposed by the Stewards were considered when developing Alternative 3 and Modified Alternative 3. Not all of the recommended unauthorized routes were made available for public motorized vehicle use.

The description of each alternative (in Chapter 2) that proposes adding unauthorized routes as NFTS trails or roads contains tables listing those routes and the mitigation measures or actions required before they are added. A database containing the concerns and benefits identified for the unauthorized routes requested by the public is available upon request after publication of the FEIS. Because the concerns with some routes address sensitive sites, resource information associated with all unauthorized routes cannot be provided.

**PC 320: The Sequoia National Forest should remove Indicator Measure #1.**

**Response:** This indicator measure reads: “Impact of proposed motor vehicle use on non-motorized recreation. Indicator 1 analyzes the extent of non-motorized recreation activities displaced by proposed motor vehicle use.” It is discussed and used in the Recreation Resources section of Chapter 3. This indicator, along with the others in this section, is intended to address how each alternative responds to the Forest Plan, the significant issues identified in scoping, and Subpart B of the Travel Management Rule.

This indicator determines if the changes to the NFTS proposed in alternative are consistent with the Recreation Opportunity Spectrum (ROS) classes as assigned in the Forest Plan. It is used to help determine whether motorized recreation opportunities conflict with other recreation opportunities, specifically non-motorized opportunities; the proximity of motor vehicle use to populated areas or neighboring private and federal lands; the quality of the motorized recreation experience; and the quality of motorized access to dispersed areas for both motorized and non-motorized uses.

**PC 321: The Sequoia National Forest should give out accurate and consistent information and maps on motorized vehicle use.**

**Response:** Thank you for your comment. We have updated the data and maps based on your comments.

**Mapping and Inventory**

**PC 76: The Sequoia National Forest should correct map errors and omissions.**

**Response:** In 2005, the Sequoia National Forest completed an inventory of unauthorized motorized routes within those portions of the Western Divide and

Kern River Ranger Districts outside of the GSNM and the Kern Plateau. Approximately 582 miles of unauthorized routes were identified within the Travel Management Project area. The forest requested input from the public about missing routes and their favorite routes, and missing routes that were identified and verified on the ground were added to the inventory. This inventory is being used to conduct the travel analysis in this EIS. Some routes identified later in the analysis process appear to have been created by users after the official inventory and are not being considered.

Thank you for noting some of these technical issues. We have tried to make adjustments to specific roads and trails based on your comments:

Trail 31E59 was mapped again in June 2009 using a global position system (GPS). The southern portion of the trail is approximately 2.0 miles in length and would be open to motorcycles only in all alternatives. The middle portion of the trail, U31E59, approximately 1.7 miles, is not currently part of the NFTS and is proposed for motorcycle use only in Alternatives 3 and Modified 3. The upper portion of the trail is not currently part of the NFTS nor proposed for addition in any action alternative, as it extends into the Giant Sequoia National Monument where off-road motorized use is prohibited.

Trail 32E34 is approximately 0.1 mile in length and runs between Roads 24S86 and 23S53. It is proposed in all alternatives as a trail open to all vehicle classes.

Trail 32E34CM is currently designated as a non-motorized trail, is approximately 4.9 miles in length, and lies east of Road 23S16.

Trail U00223 is an unauthorized trail, approximately 1.6 miles in length. It is included in Alternatives 1 and Modified 3. In Modified Alternative 3, it is proposed for addition to the NFTS as a trail open to motorcycles only.

Trail U001140 is an unauthorized trail, approximately 0.4 mile in length. In Modified Alternative 3, it is proposed for addition to the NFTS as a trail for use by vehicles <50" in width.

Road 29S02 is proposed in all alternatives, as a road open to highway legal vehicles only for approximately 1.6 miles of the northernmost portion, and as a road open to all vehicle classes for the rest of the road (approximately 4.7 miles) south of that.

Trails 32E52 (approximately 4.2 miles) and 34E41 (approximately 6.7 miles) have been added to the Piute area maps as NFTS trails open to motorcycles only.

Road 29S03 is currently not available for public motor vehicle use.

Roads in the Piute Mountains area (29S19, 28S24C, 28S25, 28S24B, 28S17B partial, 28S40, 28S40A, and 28S24) will be analyzed in a subsequent environmental document sometime after a decision is made on this project.

Road 24S89 is proposed for addition to the NFTS in Modified Alternative 3 in order to provide the connection from Mountain Highway 99 to Trail 33E23.

The Cyrus Canyon OHV Track is now shown as an area open to all vehicles in all alternatives.

**PC 277: The Sequoia National Forest should provide more detailed maps to show all existing roads and trails.**

**Response:** Thank you for your comment. Maps for the Motorized Travel Management DEIS were prepared according to regional guidelines for travel management projects and are not intended to replace or match the quality of USGS quadrangle maps or forest recreation maps. Maps for the DEIS are only intended to provide the basic information needed to compare the alternatives. All routes that would be open to the public in a given alternative are shown, by vehicle class, as well as any changes to the existing NFTS. Unauthorized routes are only displayed when the alternative proposes adding them to the NFTS. It was felt that showing all existing routes on every alternative map would be difficult to display and cause confusion.

National mapping standards will be used in the development of a Motorized Vehicle Use Map (MVUM), which will be the official map identifying routes open to motorized use. These maps will be similar for all units, allowing for seamless motorized route coverage between adjacent forests and different government land ownerships. The MVUM map, however, will only show motorized routes. Additional maps showing non-motorized routes will be available, most likely on forest visitor maps and topographic maps. Sequoia National Forest visitor use and recreation maps can be obtained at any ranger district office or the forest supervisor's office at 1839 South Newcomb Street, Porterville, CA 93257.

**PC 278: The Sequoia National Forest should postpone this current Motorized Travel Management Draft EIS until you can adopt the mapping program that the Inyo National Forest is using in this same process.**

**Response:** Maps for the Sequoia National Forest Motorized Travel Management DEIS were prepared according to basic regional guidelines for travel management projects, but each forest developed what they believed to be clear and helpful mapping symbols and an appropriate scale for their particular situation.

**PC 279: The Sequoia National Forest should include popular land marks, campgrounds, creeks or defining features like road names that are on existing Forest Service maps.**

**Response:** Thank you for your recommendations on the maps. In order to keep file size to a minimum, we created base maps that are not from USGS maps (which would have been extremely large files). The maps for the Motorized Travel Management DEIS are only intended to provide the basic information needed to compare the alternatives and may not include as much information as you are used to. It may still be helpful to use other reference maps as well.

**PC 281: The Sequoia National Forest should provide complete and accurate maps, including:**

-- the actual disturbed surface acreage and the percentage of the total

landbase that accounts for a disturbed surface every five years between 1980 and 2005.

- all inventoried roads and trails and whether they are open or closed.
- consistent trail numbers.
- the entire lengths of Trails 31E59 and 32E34.

**Response:** The maps have been edited and corrected to make them more clear and accurate. The USFS transportation database is not configured or archived in such a way that the 5-year snapshots of the system you suggest would be possible.

Trail 31E59 was mapped in June 2009 using a global positioning system (GPS). The southern portion of the trail is approximately 2.0 miles in length and would be open to motorcycles only in any of the alternatives. The middle portion of the trail, numbered as U31E59, approximately 1.7 miles in length, is currently unauthorized but is proposed for motorcycle use only in Alternatives 3 and Modified 3. The upper portion of the trail is also unauthorized; it is not proposed for motorized use in any alternative as it extends into the Giant Sequoia National Monument where off-road OHV use is prohibited.

Trail 32E34 is approximately 0.1 mile in length and is located between Roads 24S86 and 23S53. It is proposed as a trail open to all vehicle classes in all alternatives. Trail 32E34CM is a non-motorized trail approximately 4.9 miles in length and runs east of Road 23S16.

## **Air Quality**

### **PC 13: The Sequoia National Forest should analyze the impacts of climate change.**

**Response:** Climate change has the potential to affect resources on NFS lands. These effects are analyzed by resource area in Chapter 3 of this FEIS. Information on greenhouse gases and the effects of carbon dioxide, methane, and nitrous oxide are included in the Air Quality section of Chapter 3.

Because greenhouse gases from vehicle emissions mix readily into the global pool of greenhouse gases, it is not currently possible to discern the effects of this project from the effects of all other greenhouse gas sources worldwide, or is it expected that attempting to do so would provide a practical or meaningful analysis of project effects. Potential regional and local variability in climate change effects add to the uncertainty regarding the actual intensity of this project's effects on global climate change. Emissions associated with this project are extremely small in the global atmospheric CO<sup>2</sup> context, making it impossible to measure the incremental cumulative impact on global climate from emission associated with this project. In summary, the potential for cumulative effects is considered negligible for all alternatives because none of the alternatives would result in measurable direct and indirect effects on air quality or global climatic patterns.

**PC 39: The Sequoia National Forest should fully address issues of air quality, preparing a full-fledged, comprehensive quantitative analysis, including a comprehensive inventory of fugitive dust.**

**Response:** The air quality analysis has been modified and improved. The Air Quality section of Chapter 3 includes information on greenhouse gases and the effects of carbon dioxide, methane, and nitrous oxide. It provides a more detailed and comprehensive analysis of air quality and associated regulations including fugitive dust.

#### **Botanical Resources**

**PC 53: The Sequoia National Forest should show that motorized vehicle use is adversely affecting sensitive plants before a trail is closed.**

**Response:** There are no trails made unavailable to public motor vehicle use in any alternative based solely on damage to individual sensitive plants or their habitat.

**PC 133: The Sequoia National Forest should consult with the Fish and Wildlife Service.**

**Response:** The Forest Service has been in consultation with the U.S. Fish and Wildlife Service on all listed plant species potentially affected by travel management. A Biological Assessment of effects to those species has been developed and will be submitted to the U.S. Fish and Wildlife Service for their concurrence.

**PC 207: The Sequoia National Forest should describe and implement mitigation measures specific to the protection of fens and sensitive habitat adjacent to designated routes.**

**Response:** At this time, specific mitigation measures are not warranted (based on field inspection) to continue operation of the two NF System Routes within 100 feet of known fens. Additionally, Meadow and Fen areas are part of Riparian Conservation Areas and have monitoring Standards and Guidelines for their protection from the 2001 Framework.

**PC 260: The Sequoia National Forest should provide an explanation of how closing 75 percent of the existing unclassified trail mileage is a high risk proposal, or even a moderate risk proposal.**

**Response:** Within the Assumptions section of the invasive plant portion of Chapter 3 of the DEIS, risk is a term that is introduced within the context of noxious weeds (page 252). Using a relative (not absolute) scale, the circumstances under which individual trails were rated high, medium, and low “risk” are defined. These individual trail ratings were then aggregated into the relative effects for each alternative.

**PC 274: The Sequoia National Forest should display, in a table, the botanical resources near each route.**

**Response:** The botanical resources near each route are displayed in Appendix A.

### **Cultural Resources**

**PC 56: The Sequoia National Forest should not defer a field study on these routes and place the cultural resources at undue risk.**

**Response:** The Motorized Recreation Programmatic Agreement, the document that guides the Travel Management project through compliance with Section 106 of the National Historic Preservation Act, stipulates that the survey of routes or specifically defined use areas may be deferred if they:

- (1) have critical resource values . . . or management or policy conflicts that make them less likely to be designated as OHV system routes . . . and more likely to be candidates for closure or removal
- (2) receive Light OHV use
- (3) are existing system roads, trails, or specifically defined use areas
- (4) are surfaced roads or facilities (e.g., trailheads)
- (5) have no decisions made on the ways (other than exclusion in system route designation) in which routes will be removed or decommissioned (Appendix C 2(a))

Light use is defined as fewer than 25 OHVs per week. The deferred survey strategy, as the rest of the programmatic agreement, was developed through consultation with the State Historic Preservation Office and the Advisory Council on Historic Preservation.

**PC 58: The Sequoia National Forest should show how the “integrity of historic property values are diminished related to [the] location, design, setting, materials, workmanship, feeling, or association” for each trail.**

**Response:** Location, design, setting, materials, workmanship, feeling, or association are standard measures of integrity laid out in 36 CFR 800.5(a)(1). These measures are used nationally in considering the impact of federal undertakings on cultural resources. National Register Bulletin #15 discusses the application of these measures at some length. Archaeological monitoring, per the terms of the Motorized Recreation Programmatic Agreement, will allow the generation of baseline data which will aid in the site-specific identification of impacts to the integrity values of historic properties.

**PC 59: The Sequoia National Forest should keep the river access and roads open in the Black Gulch area --and not close it due to the presence of Indian artifacts.**

**Response:** The Kern River Valley is archaeologically dense and, as pointed out, virtually all camping areas have cultural resource concerns. Turning a blind eye to the potential for damage to cultural resources—neglecting the resources—is defined in 36 CFR 800(a)(vi) as an adverse effect. 36 CFR 800.1 enjoins the

federal government to “seek ways to avoid, minimize or mitigate any adverse effects on historic properties.”

**PC 60: The Sequoia National Forest should meet its obligations to apply the minimization criteria at a site-specific level during the route designation process and not designate roads through known cultural resource sites.**

**Response:** The Sequoia National Forest has met this obligation by participating in the development of the Motorized Recreation Programmatic Agreement, which was developed with input from the public, historic societies, Native American tribes, organizations, and individuals, as well as others. Standard protection measures to address prior impacts to sites in or near designated routes were agreed to by the agency, as well as the California State Historic Preservation Officer and the Advisory Council on Historic Preservation. This agreement allows for the implementation of standard protection measures to reduce or eliminate impacts to archaeological sites in or near designated routes. In some cases, the effectiveness of the standard protection measures over a period of time needs to be assessed. Monitoring ensures the standard protection measures are in place and working. Routes that may cause significant impact to sensitive archaeological sites were not added to the NFTS.

**PC 61: The Sequoia National Forest should establish a baseline of the impacts on the majority of the cultural resource sites --and provide a monitoring plan with a dedicated funding stream.**

**Response:** The mitigation and monitoring for cultural resources in Appendix C of this FEIS meets the terms of the Motorized Recreation Programmatic Agreement. Such monitoring will allow the collection of baseline data that will better define the impact of motor vehicles and aid in the engineering for and the implementation of Standard or Specialized Protection Measures. Establishing a dedicated funding stream for archaeological monitoring is outside the scope of this decision.

**PC 271: The Sequoia National Forest should define the statement: “Prospective values of an historic property.”**

**Response:** The term “prospective value” refers to the potential values of cultural resources. Few cultural resources in the Sequoia National Forest have been subjected to systematic study (e.g., contextual research or data recovery). As such, the forest must manage these resources to protect not merely their surface manifestations, but their potential to provide data about our past.

**PC 305: The Sequoia National Forest should mitigate all routes with cultural resource concerns with barriers or trail reroutes instead of closure.**

**Response:** None of the alternatives propose prohibiting public motor vehicle use on routes with cultural resource concerns. Prohibiting motor vehicle use or rerouting trails may be necessary in the future should ongoing monitoring reveal impacts to cultural resources that cannot otherwise be addressed with the Standard and Specialized Protection Measures.

## **General Effects**

**PC 8: The Sequoia National Forest should analyze the direct, indirect, and cumulative effects of previous administrative decisions regarding travel management on social, cultural, and natural resources.**

**Response:** Analyzing the effects of previous administrative decisions is not part of the purpose and need for this project and therefore would be outside of the scope for this project. The purpose and need for this project is to consider the effects (direct, indirect, and cumulative) of prohibiting cross-country travel, adding proposed unauthorized routes, and proposed changes to the existing NFTS. These effects are analyzed by resource area, including Social and Economic Resources, in Chapter 3.

**PC 19: The Sequoia National Forest should consider the potential impacts of noise around roads and recreational trails.**

**Response:** The Recreation Resources section in Chapter 3 includes an analysis of the effects of noise associated with the use of motorized roads and trails proposed in each alternative.

**PC 25: The Sequoia National Forest should reverse the rankings of alternatives based on their potential to improve long-term productivity.**

**Response:** The ranking of alternatives in Chapter 2 was based on summaries of the effects analyses presented in Chapter 3 (how each alternative would affect each resource). Resource specialists reviewed their effects determinations and ranked each alternative accordingly. Generally, alternatives with fewer routes ranked higher than those with more, because the effects of routes would be greater across the project area.

**PC 26: The Sequoia National Forest should focus more on analyzing the impacts of existing routes than new user-created routes.**

**Response:** This project is focused on the prohibition of cross-country travel (subpart A of the Travel Management Rule), providing motorized recreation opportunities, and protecting natural resources, as described in the Purpose and Need section of Chapter 2. To address these needs, both existing NFTS routes and existing unauthorized routes were analyzed. Some existing NFTS roads and trails with known concerns were included in the Proposed Action, and public comments were received on them. These comments and the concerns with these routes were addressed in the development of alternatives to the Proposed Action.

## **Geological Resources**

**PC 219: The Sequoia National Forest should remove the statement “The direct effect is increased public exposure and accessibility to geo-hazards” as public exposure cannot be increased by continuing to allow existing use.**

**Response:** The intent of the statement is to inform the decision maker of geologic hazards associated with the unauthorized routes. Some unauthorized

routes will present a geologic hazard and are a risk to the public at certain times. Some of these geologic hazards, such as flooding or rock falls, cannot be mitigated completely through the implementation of Best Management Practices or routine maintenance.

**PC 273: The Sequoia National Forest should correct conflicting parts of the geo-hazard effects analysis (pages 161 and 165).**

**Response:** The statement “The major direct effect of cross-country motorized vehicle travel has already occurred” has been removed. The geo-hazard effects analysis in the Geological Resources section of Chapter 3 has been rewritten to clarify any conflicting parts of the report.

**Invasive Plants**

**PC 15: The Sequoia National Forest should consider existing NFS routes influenced by noxious weeds.**

**Response:** The Forest recognizes that motor vehicles can be a vector to introduce or spread noxious weeds. In the existing situation, because motorized vehicles currently have access to areas, it is assumed that noxious weeds have already been introduced where the potential exists. Closure of access routes should not result in an increase in noxious weeds spread but result in a decreased potential for spread in the future, which would be beneficial. Non-native invasive species may be introduced and continue to spread unchecked if motor vehicle use is unregulated.

The Invasive Plants section of Chapter 3 considers the effects of alternatives on existing NFS routes as well as unauthorized roads, trails, and areas.

**PC 29: The Sequoia National Forest should show how it plans to mitigate the effects of the alternatives on the spread of noxious weeds.**

**Response:** Mitigations (which consist mostly of monitoring) for added routes with noxious weed concerns are discussed in the analysis for Invasive Plants in Chapter 3 and in the Monitoring Strategy section of Appendix C.

**PC 32: The Sequoia National Forest should describe the specific Forest Service standard or “trigger” which makes a weed risk assessment necessary as no new trails are being created and therefore there is no ground-disturbing activity.**

**Response:** The Purpose and Need for the Travel Management EIS states that the effects of additions, subtractions, and changes of use to the existing transportation system will be analyzed for effects on resources. Therefore, trails proposed for addition in each alternative are analyzed for effects on the spread and establishment of noxious weeds.

**PC 52: The Sequoia National Forest should clearly state that weeds are not a unique “OHV” problem but equestrians, bicyclist, fishermen, hikers, and other recreationists can bring exotics with them into the forest.**

**Response:** The Introduction to the Invasive Plants section in Chapter 3 clearly states that OHVs contribute to the establishment and spread of weeds. The Cumulative Effects analysis in that section incorporates the effects of other past, current, and foreseeable future actions (including non-motorized recreation) on the spread and establishment of noxious weeds.

**PC 54: The Sequoia National Forest should include mitigation plans for weed control and abatement.**

**Response:** Mitigations for weed control and abatement are discussed in the analysis for Invasive Plants in Chapter 3. Mitigations are also detailed in the noxious weed section of Appendix C. Mitigation consists of monitoring, and if weeds are detected, then appropriate weed control and abatement will follow.

**PC 55: The Sequoia National Forest should not propose to designate routes for motorized travel that it knows will result in the spread of noxious weeds on the forest.**

**Response:** The Forest recognizes that motor vehicles can be a vector to introduce or spread noxious weeds. In the existing situation, because motorized vehicles currently have access to areas, it is assumed that noxious weeds have already been introduced where the potential exists. Closure of access routes should not result in an increase in noxious weeds spread but result in a decreased potential for spread in the future, which would be beneficial. Non-native invasive species may be introduced and continue to spread unchecked if motor vehicle use is unregulated.

Every action alternative has different levels of risk for the spread and establishment of noxious weeds. Because of the design features and mitigation measures proposed, each of the alternatives is consistent with current Forest Service standards for noxious weeds.

**PC 145: The Sequoia National Forest should make public a determination that the benefits of designating OHV trails outweigh the potential harm caused by invasive species.**

**Response:** The effects on noxious weeds of designating OHV Trails (or the prohibition of cross-country travel) in all of the action alternatives are detailed within the Noxious Weed section of Chapter 3.

**Recreation**

**PC 5: The Sequoia National Forest should clearly state the limitations of the NVUM such as the realization that OHV use is far higher than it indicates.**

**Response:** The National Visitor Use Monitoring Program (NVUM) collects information at national forests and grasslands on visitor use. It is designed to provide statistically reliable estimates of recreation visitation for national forests such as the Sequoia. Statistically, these visitation estimates are designed to be accurate within 15 percent of actual visitation, at the 80 percent confidence level. That means that one can be 80 percent certain that, for example, between 71 and 95 percent of visitors to the forest participate in viewing natural features. The

NVUM study is the most current scientific data available. Regardless of visitation activities reported, an even wider range of OHV opportunities are presented in the FEIS.

**PC 18: The Sequoia National Forest should address visitor displacement.**

**Response:** Thank you for your comment. Potential visitor displacement issues resulting from the proposed actions have been considered in the Recreation Resources section of Chapter 3. If visitors are not able to find an opportunity for their chosen activity in the project area, they may choose to recreate in other state or private recreation areas, or, if they encounter recreational crowding in the SQF, they may choose to return to the forest at another, less crowded time of day or season.

**PC 57: The Sequoia National Forest should keep routes open that receive light usage instead of using this as a criteria for removing them from analysis.**

**Response:** Thank you for your comment. A variety of resource and environmental factors were involved in the analysis, and were not limited to usage criteria.

**PC 98: The Sequoia National Forest should disclose that reducing access for OHVs will reduce opportunities for other forest visitors.**

**Response:** The Purpose and Need (Chapter 1) for this project is specific to motorized travel. Non-motorized travel on unauthorized routes not proposed for addition to the NFTS may continue on routes where it is legal to do so.

**PC 318: The Sequoia National Forest should substantiate its claim than banning cross-country travel benefits non-motorized users.**

**Response:** The recreation section of the FEIS includes an analysis of impacts (including dust and noise) to non-motorized users.

**PC 323: The Sequoia National Forest should address the problem of water access for boats.**

**Response:** Issues regarding use of Lake Isabella have been addressed in Modified Alternative 3 (see Chapter 2). That alternative includes a proposal to add open travel areas around Lake Isabella to provide lake access.

**PC 324: The Sequoia National Forest should require permits for camping around the lake.**

**Response:** The issue of requiring permits for camping around the lake is outside the scope of this action.

**PC 325: The Sequoia National Forest should clearly state that dispersed camping is part of the scope of the proposed action.**

**Response:** Dispersed camping is outside the scope of the proposed action to the extent that this action concerns motorized access off of designated routes.

What is within the scope of the analysis, however, is how changes to that designated route system and how prohibiting motorized use off of designated routes will impact various activities, such as dispersed camping. To that extent, a discussion of motorized access to dispersed recreation is included in the Recreation Resources section of Chapter 3.

**PC 326: The Sequoia National Forest should prohibit non-motorized use of these same trails as well as prohibit cross-country non-motorized travel in areas of concern.**

**Response:** Thank you for your comment. The scope of the current action is motorized use off of designated routes. The impacts of non-motorized use on resources, such as wildlife, are outside the scope of this analysis. Additionally the prohibition of cross-country non-motorized travel, such as preventing a visitor from walking across the forest, is undesirable, infeasible, and contrary to the purpose of the national forests. Thank you for your concern for resource protection; the SQF has addressed a range of resource protection issues throughout the document.

### **Social and Economic Resources**

**PC 306: The Sequoia National Forest should analyze the economic impacts to the communities around Lake Isabella if access is reduced.**

**Response:** Your concern about the impacts to local economies from reduction in use around Lake Isabella is noted and appreciated. As part of the Travel Management project analysis, socio-economic concerns were addressed in the Social and Economic Resources section of Chapter 3. While the draft EIS indicated that “insufficient information exists to project changes in motorized vehicle use that may result following implementation of the proposed action or the other alternatives analyzed,” information has been added to the final EIS in order to examine potential changes to the Lake Isabella area. For example, background information specific to the Lake Isabella Census County Division has been added to the Social and Economic Resources section of Chapter 3. The effects of changes in use for the Lake Isabella area are now discussed qualitatively for each alternative. And a section has been added specific to Modified Alternative 3 which discusses economic impacts to Lake Isabella communities.

**PC 330: The Sequoia National Forest should divulge accurate accounting data about (2005-2009) FLREA fee collections.**

**Response:** Your concern regarding the collection of Federal Lands Recreation Enhancement Act (FLREA) fees is noted and appreciated. The draft EIS stated that “insufficient information exists to project changes in motorized vehicle use that may result following implementation of the proposed action or the other alternatives analyzed,” thus estimating changes in fees collected is not practical. Decisions regarding the issue of FLREA fees are outside the scope of this plan, since the collection of fees is outlined in the act as designated by Congress. Section 3 (d) of the act outlines activities for which fees will not be charged. The act states:

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“The Secretary shall not charge any standard amenity recreation fee or expanded amenity recreation fee for Federal recreational lands and waters administered by the Bureau of Land Management, the Forest Service, or the Bureau of Reclamation under this Act for any of the following:

- (A) Solely for parking, undesignated parking, or picnicking along roads or trailsides.
- (B) For general access unless specifically authorized under this section.
- (C) For dispersed areas with low or no investment unless specifically authorized under this section.
- (D) For persons who are driving through, walking through, boating through, horseback riding through, or hiking through Federal recreational lands and waters without using the facilities and services.
- (E) For camping at undeveloped sites that do not provide a minimum number of facilities and services as described in subsection (g)(2)(A).
- (F) For use of overlooks or scenic pullouts.
- (G) For travel by private, noncommercial vehicle over any national parkway or any road or highway established as a part of the Federal-aid System, as defined in section 101 of title 23, United States Code, which is commonly used by the public as a means of travel between two places either or both of which are outside any unit or area at which recreation fees are charged under this Act.
- (H) For travel by private, noncommercial vehicle, boat, or aircraft over any road or highway, waterway, or airway to any land in which such person has any property right if such land is within any unit or area at which recreation fees are charged under this Act.
- (I) For any person who has a right of access for hunting or fishing privileges under a specific provision of law or treaty.
- (J) For any person who is engaged in the conduct of official Federal, State, Tribal, or local government business.
- (K) For special attention or extra services necessary to meet the needs of the disabled.”

Thus decisions under this plan on area, route and road designation do not allow the USFS to levy additional fees.

**PC 331: The Sequoia National Forest should reduce financial impact by leaving trails as they are now.**

**Response:** Your concern regarding the financial impact of the travel management plan is appreciated. While costs to government of implementation may vary among the alternatives, insufficient information is available for a complete cost comparison. While the cost of route designation and maintenance may give some indication of the level of cost, increases in associated costs such as enforcement are unavailable. In addition, increased economic efficiency may result from route designation as non-market resources and values are improved. These costs and benefits, not considered in financial efficiency analysis, are by their nature very difficult to quantify. Direction in 40 CFR 1502.23 and the Forest

Service Handbook 1909.15, (7/6/04) and 22.35 (01/14/05) provides for the use of qualitative analysis to evaluate the effects of these non-market values. The non-market aspects of each proposed activity are described in other resource sections of Chapter 3 and specialist reports.

### **Special Areas**

**PC 2: The Sequoia National Forest should analyze user conflict and resource damage in roadless areas and explain why it is not analyzing routes recommended by the public.**

**Response:** In designating a system of roads, trails, and areas open to motor vehicle use, local agency officials must consider minimization of conflicts among uses of NFS lands (Section 212.55(a) of the Travel Management Rule). These regulations implement Executive Order 11644 (February 8, 1972), "Use of Off-Road Vehicles on the Public Lands," as amended by Executive Order 11989 (May 24, 1977). These executive orders direct federal agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

We recognize that roadless areas are important in providing remote recreation opportunities, without the activity restrictions of wilderness, including OHV use. Regulations for the management of roadless areas do not prohibit wheeled motor vehicle use for remote recreation, nor do they require the closure of existing NFS roads (36 CFR 294). The preamble to those regulations states that the prohibition of road construction, road reconstruction, and timber harvesting is considered to protect the values and characteristics of roadless areas. The Roadless Areas, Wild and Scenic Rivers section of Chapter 3 compares the effects of the different alternatives on the roadless area values as established by the regulations.

Specific routes recommended by the public were considered by reviewing inventory maps, surveying the route on the ground, identifying the risks and benefits of the route, and an interdisciplinary review. The description of each alternative (in Chapter 2) that proposes adding unauthorized routes as NFTS trails or roads contains tables listing those routes and the mitigation measures or actions required before they are added. A database containing the concerns and benefits identified for the unauthorized routes requested by the public is available upon request after publication of the FEIS. Because the concerns with some routes address sensitive sites, all resource information associated with unauthorized routes cannot be provided.

**PC 92: The Sequoia National Forest should protect the integrity and quiet of roadless and other areas of the Sequoia that do not have motorized trails and roads by restricting motorized use and prohibiting the addition of new routes in roadless areas.**

**Response:** Wilderness areas are closed to motor vehicles by statute 212.55(e). NFS roads, trails, and areas on NFS lands in wilderness areas or primitive areas shall not be designated for motor vehicle use pursuant to this section, unless, in

the case of wilderness areas, motor vehicle use is authorized by the applicable enabling legislation for those areas.

We recognize that roadless areas are important in providing remote recreation opportunities, without the activity restrictions of wilderness, including OHV use. Regulations for the management of roadless areas do not prohibit wheeled motor vehicle use for remote recreation, nor do they require the closure of existing NFS roads (36 CFR 294). The preamble to those regulations states that the prohibition of road construction, road reconstruction, and timber harvesting is considered to protect the values and characteristics of roadless areas. The Roadless Areas, Wild and Scenic Rivers section of Chapter 3 compares the effects of the different alternatives on the roadless area values as established by the regulations.

**PC 327: The Sequoia National Forest should explain why the roadless characteristic of the areas can be compromised by designating unauthorized trails as authorized.**

**Response:** Thank you for your comment. Please see the response to PC 92.

**PC 328: The Sequoia National Forest should designate 9.9 miles located within the roadless areas.**

**Response:** Alternative 1 would add 9.9 miles of unauthorized routes to the NFTS as motorized trails within the Greenhorn Creek Inventoried Roadless Area (IRA) (7.1 miles: 2.3 miles of trail open to all vehicles and 4.8 miles open to motorcycles only) and the Mill Creek IRA (2.8 miles of trail open to all vehicles).

Alternatives 3 and Modified 3 would add 13.2 miles of unauthorized routes to the NFTS as motorized trails within the Greenhorn Creek IRA (10.1 miles: 8.8 miles of trail open to all vehicles, 1.3 miles of trail open to motorcycles only, and 0.2 miles of trail open to vehicles less than 50" in width) and the Mill Creek IRA (2.9 miles of trail open to all vehicles). Under Alternatives 4 and 5, no unauthorized routes are proposed to be added to the NFTS within IRAs.

## **Transportation**

**PC 1: The Sequoia National Forest should complete a science-based travel analysis of the transportation system which includes:**

- **a determination of the minimum road system**
- **roads for decommissioning**
- **routes impacting resources and other forest users**
- **examination of the economic and management capabilities of the forest**
- **addressing right-of-way and lack of use concerns**

**Response:** The Travel Management Rule is comprised of three parts: Subpart A, Administration of the Forest Transportation System; Subpart B, Designation of Roads, Trails, and Areas for Motor Vehicle Use; and Subpart C, Use by Over-snow Vehicles. The Rule does not establish requirements for the order in which to implement the three parts. The scope of this action is limited to implementation

of Subpart B and is focused on the prohibition of cross-country motor vehicle travel and the production of a MVUM. The identification of the future road system and minimum NFTS needed for administration, utilization, and protection of NFS lands is contained in Subpart A. There is no legal requirement in the regulations for the agency to implement Subpart A as a pre-condition to, or part of, the current proposed action.

According to the Full R5 Regional Forester Briefing by W.O. Engineering, FY 2009 Appropriations Conference Report, Roads Language, compliance is achieved when a complete inventory is included in the Transportation or Road Atlas, Road Management Objectives and Trail Maintenance Objectives are on file, operation and maintenance of the NFTS is sustainable with available resources, and unauthorized or unneeded routes have been identified and either decommissioned or identified for decommissioning (USDA R5 Regional Forester Briefing 2009). The SQF completed a roads analysis in 2003 for the entire road system.

**PC 4: The Sequoia National Forest should show that it can adequately administer and maintain the proposed NFTS.**

**Response:** The availability of resources should be a consideration in designating routes for motor vehicle use. Section 212.55(a) of the proposed and final rules include as a criterion for designation “the need for maintenance and administration of roads, trails, and areas that would arise if the uses under consideration are designated; and the availability of resources for that maintenance and administration.” The Forest Service is committed to using whatever funds it has available to accomplish the purposes of this final rule in a targeted, efficient manner.

Maintenance schedules and associated costs for maintenance are based on an optimal maintenance scenario, but what is undertaken as a program of work in an annual program is at the discretion of the responsible official and subject to the limits of staffing and funding. Even though annual or actual maintenance is often below this optimal level, that does not mean roads and trails are not being adequately maintained. The primary focus of maintenance for roads is to protect public health and safety, and provide resource protection.

The costs for maintaining facilities are discussed in the analysis of Transportation Facilities in Chapter 3.

**PC 6: The Sequoia National Forest should document any public safety problems resulting from mixed use.**

**Response:** A mixed use analysis was conducted in accordance with agency policy and direction, documenting the evaluation of risks and mitigation measures (see Appendix E).

**PC 9: The Sequoia National Forest should use a clear and consistent method of analysis for determining which unauthorized routes were added to the transportation system.**

**Response:** Unauthorized routes may be designated for motor vehicle use pursuant to 36 CFR 212.51 of the Travel Management regulations, following public consideration and appropriate site-specific environmental analysis.

Each route was analyzed in the context of the designation criteria specified in Subpart B of the Travel Management Rule (36 CFR 212.55). These criteria require the Forest Service to consider effects on natural and cultural resources and to minimize damage, harassment, and disruption of certain resources such as soil, vegetation, and wildlife when designating trails and open areas, as well as the value of each route for recreation access. Consideration of these criteria has assured that the environmental impacts are properly taken into account when making decisions to add unauthorized routes to the NFTS.

The description of each alternative (in Chapter 2) that proposes adding unauthorized routes as NFTS trails or roads contains tables listing those routes and the mitigation measures or actions required before they are added. A database containing the concerns and benefits identified for the unauthorized routes requested by the public is available upon request after publication of the FEIS. Because the concerns with some routes address sensitive sites, all resource information associated with unauthorized routes cannot be provided.

**PC 16: The Sequoia National Forest should perform and display capacity and demand analyses of designated parking lots by route and trail number.**

**Response:** Capacity and demand analyses of parking lots are outside the scope of this project. To address the Purpose and Need (Chapter 1), the SQF is analyzing access to public lands, including the access to parking lots.

**PC 20: The Sequoia National Forest should disclose that closing trails will increase maintenance costs by concentrating use and increasing impacts.**

**Response:** The description of the purpose and need for this project in Chapter 1 includes the need to make limited changes to the SQF NFTS to provide access to dispersed recreation opportunities and to provide a diversity of motorized recreation opportunities. Modified Alternative 3, as described in Chapter 2, provides the highest level of diversity and access while regulating cross-country motor vehicle travel and addressing resource, right-of-way, and lack of use concerns (other needs for this project).

Those unauthorized routes not proposed for addition to the NFTS in the alternatives generally experience only light use, such that additional use on remaining routes does not meaningfully result in a change in the recreation resource condition. A reduction in available roads and motorized trails may be more pronounced in concentrated recreation areas, where capacity is a greater issue due to the higher use levels. Concentrated recreation areas, however, are largely available by existing county, state, or NFTS roads, including all developed recreation sites.

Maintenance costs for trails are estimated on a per mile basis; fewer miles to maintain mean lower maintenance costs. There are various methods of closing and decommissioning trails that may cost less than maintaining them.

**PC 21: The Sequoia National Forest should step up law enforcement on the NFTS around the lake.**

**Response:** Forest protection officers patrol the lake campgrounds and shoreline on a regular basis. Law enforcement officers support the forest protection officers as needed, especially if serious violations occur. Staffing has increased in the last year and the Sequoia National Forest will provide law enforcement with available personnel and resources. To enhance enforcement of the Travel Management Rule, Region 5 Forest Recreation Programs have applied for and received grant dollars (green sticker funding) from the State of California Off-highway Motor Vehicle Recreation Division Grants Program. These state funds are earmarked specifically for enforcement of off-highway vehicle laws and regulations.

**PC 23: The Sequoia National Forest should make more use of the vast potential for volunteerism by working with designated OHV groups.**

**Response:** The SQF currently works with various four-wheel-drive and OHV organizations for trail maintenance, as well as equestrian and mountain bike communities. The Transportation Facilities section of Chapter 3 states that we rely on their help in maintaining trails.

**PC 28: The Sequoia National Forest should address how the crowding factor will be increased by proposed closures.**

**Response:** The first need described in the Purpose and Need section of Chapter 1 is to regulate unmanaged motor vehicle travel in order to eliminate adverse impacts to the environment caused by cross-country vehicle travel. Recognizing that implementation of the prohibition on cross-country travel would result in the loss of popular and important recreational access and opportunities, another need was identified to add to the system those unauthorized routes that provide needed access and recreational opportunities while minimizing resource impacts. The alternatives address these needs to varying degrees.

Alternative 2 provides an important point of reference for contrasting existing resource impacts and recreational uses with the other alternatives. This alternative provides a benchmark for the assessment of impacts resulting from the existing condition, especially for recreational opportunities, because all unauthorized routes would remain available for motorized use.

The predicted effects of the reduction in routes available for motorized use are discussed in the Recreation Resources, Social and Economic Resources, Hydrology and Soil Resources, Botanical Resources, Invasive Plants, and Wildlife Resources sections of Chapter 3.

**PC 30: The Sequoia National Forest should limit the baseline transportation system to only those routes supported by prior NEPA analyses or decision documents.**

**Response:** The forest transportation system has been developed through both active management and decision-making over time, both pre- and post-NEPA. The baseline system represents those routes included in the forest transportation

atlas, roads with Forest Service signs and numbers, and documentation of maintenance and other management activities. The NFTS was reviewed prior to the start of this project and was established as the baseline. NEPA documentation and other agency documentation, per the Paperwork Reduction Act of 1995 (Federal Register, 45 USC 3501), is required for six years. Many NEPA decisions on the NFTS were made more than six years ago. Record of maintenance and other management actions are part of the determining factors of what roads and trails are part of the NFTS. The baseline system changes from year to year based on project-level decisions.

**PC 31: The Sequoia National Forest should close trails that dead end into the Monument or wilderness areas.**

**Response:** Alternatives 3, Modified 3, and 4 propose to change the designation of two trails, 31E66 and 31E83, from motorized use to non-motorized use, where they enter the Giant Sequoia National Monument.

**PC 62: The Sequoia National Forest should follow existing laws and not remove access to national forest land or impose fees.**

**Response:** All decisions regarding public wheeled motor vehicle use on roads and trails and areas must be consistent with the Forest Plan, relevant laws, regulations, and policies. Route designation is being completed in accordance with and to implement the Travel Management Rule (36 CFR Parts 212, 251, 261, and 295). One of the specific purposes of this rule is to eliminate cross-county motorized travel except on designated routes and in designated areas, to reduce adverse environmental impacts. Charging fees is outside the scope of this project.

**PC 63: The Sequoia National Forest should provide the criteria for the exclusion of routes in the NFTS, so as not to hamper the ability of the public to comment on the DEIS and substantiate the resource damage and other negative environmental effects.**

**Response:** Unauthorized routes may be designated for motor vehicle use pursuant to 36 CFR 212.51 of the Travel Management regulations, following public consideration and appropriate site-specific environmental analysis. The results of this site-specific analysis are summarized by resource area in Chapter 3. Each resource specialist used measurement indicators to measure change from existing conditions under each of the alternatives. A site-specific analysis resulted in a determination of the severity and intensity of effects on each resource. The measurement indicators used are listed under “Effects Analysis Methodology” in each resource section in Chapter 3. This analysis allows the Responsible Official to weigh the impacts of each alternative on forest resources, along with all of the other considerations that inform a decision on travel management.

Specific routes recommended by the public were considered by reviewing inventory maps, surveying the route on the ground, identifying the risks and benefits of the route, and an interdisciplinary review. Each route was analyzed in the context of the designation criteria specified in Subpart B of the Travel

Management Rule (36 CFR 212.55). These criteria require the Forest Service to consider effects on natural and cultural resources and to minimize damage, harassment, and disruption of certain resources such as soil, vegetation, and wildlife when designating trails and open areas, as well as the value of each route for recreation access. Consideration of these criteria has assured that the environmental impacts are properly taken into account when making decisions to add unauthorized routes to the NFTS.

A database containing the concerns and benefits identified for the unauthorized routes requested by the public is available upon request after publication of the FEIS. Because the concerns with some routes address sensitive sites, all resource information associated with unauthorized routes cannot be provided.

**PC 64: The Sequoia National Forest should restrict access by Forest Order rather than Season of Use.**

**Response:** The Travel Management Rule allows for seasonal designations “if appropriate, the times of year for which use is designated” (36 CFR § 212.56). Seasonal closures are needed to meet Forest Plan standards and guidelines to close unsurfaced routes during wet weather periods. Seasonal closures on such routes are intended to protect roads and trails from damage when the travel tread cannot support vehicle use, as well as to prevent rutting, soil erosion, and other resource damage.

By stating a season of use, the public will know exactly when roads, trails, and areas are available for use and can plan their use accordingly. A Forest Order may change access from year to year.

**PC 65: The Sequoia National Forest should provide evidence that proposed wet weather closures make a difference in sediment production from road and trail surfaces and reflect this in the maintenance costs.**

**Response:** Use of roads and trails when the surface is wet can damage the drainage structures (rolling dips and water bars) that are in place to take the water off the road and reduce erosion. The estimates for road and trail maintenance presented in the Comparison of Alternatives section of Chapter 2 and the Transportation Facilities section of Chapter 3 are based on an average per mile rate for normal maintenance; any heavy maintenance or reconditioning will incur increased costs. The Transportation Facilities section of Chapter 3 does not include a discussion of maintenance costs (or savings) related to wet weather closures.

**PC 66: The Sequoia National Forest should establish routes to accommodate a changing lake level.**

**Response:** Modified Alternative 3 includes a proposal to add open travel areas around Lake Isabella.

**PC 67: The Sequoia National Forest should reflect the true and realistic cost of road and trail maintenance and display actual maintenance expenditures.**

**Response:** The effects analysis in the Transportation section of Chapter 3 includes a discussion of road and trail maintenance costs. Forest-wide average costs per mile to maintain each maintenance level were developed and applied to the road system to calculate the estimated total cost. The average costs per mile were derived from a Region 5 spreadsheet developed by a transportation specialist.

**PC 68: The Sequoia National Forest should maintain accessible areas and install ramps for fishing by seniors and the handicapped at Lake Isabella.**

**Response:** Under Modified Alternative 3, the public will be able to take their motorized vehicles to the shoreline. Providing accessible fishing ramps for persons with disabilities and seniors was not part of the purpose and need for this project. Adding these facilities would require a separate project.

**PC 69: The Sequoia National Forest should minimize conflicts between OHV use and quiet forms of recreation.**

**Response:** The Forest Service believes that national forests should provide access for both motorized and non-motorized use in a manner that is environmentally sustainable over the long term. The National Forest System is not reserved for the exclusive use of any one group, nor must every use be accommodated on every acre. It is entirely appropriate that different areas of the Sequoia National Forest provide different recreation opportunities. These uses must be balanced, rather than one given preference over another.

In designating a system of roads, trails, and areas open to motor vehicle use, local agency officials must consider minimization of conflicts among uses of NFS lands (Section 212.55(a) of the Travel Management Rule). These regulations implement Executive Order 11644 (February 8, 1972), "Use of Off-Road Vehicles on the Public Lands," as amended by Executive Order 11989 (May 24, 1977). These executive orders direct federal agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

The Recreation Resources section of Chapter 3 includes an analysis of the effects of motorized use on quiet forms of recreation.

**PC 70: The Sequoia National Forest should allow beach access at Lake Isabella**

- for windsurfing.
- for fishing.
- for hunting.
- for dispersed camping.
- for picnicking.

**--for kayaking.**

**Response:** Modified Alternative 3 includes a proposal to add open travel areas around Lake Isabella to provide water and beach access.

**PC 71: The Sequoia National Forest should recognize that there will be occasions when contractors and bidders will need short-term access on administrative-use-only roads.**

**Response:** Administrative-use-only roads are specifically designated for administrative purposes in all alternatives.

**PC 72: The Sequoia National Forest should allow vehicles and camping near the water's edge at the Auxiliary Dam and Old Isabella Road.**

**Response:** Modified Alternative 3 includes a proposal to add open travel areas for access to the water's edge around Lake Isabella, including one in the Auxiliary Dam and Old Isabella Road area.

**PC 73: The Sequoia National Forest should not propose additional miles of OHV trails in areas generally protected for quiet forms of recreation.**

**Response:** The Forest Service believes that national forests should provide access for both motorized and non-motorized use in a manner that is environmentally sustainable over the long term. The National Forest System is not reserved for the exclusive use of any one group, nor must every use be accommodated on every acre. It is entirely appropriate that different areas of the Sequoia National Forest provide different recreation opportunities. These uses must be balanced, rather than one given preference over another.

In designating a system of roads, trails, and areas open to motor vehicle use, local agency officials must consider minimization of conflicts among uses of NFS lands (Section 212.55(a) of the Travel Management Rule). These regulations implement Executive Order 11644 (February 8, 1972), "Use of Off-Road Vehicles on the Public Lands," as amended by Executive Order 11989 (May 24, 1977). These executive orders direct federal agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

The Recreation Resources section of Chapter 3 includes an analysis of the effects of motorized use on quiet forms of recreation.

**PC 74: The Sequoia National Forest should provide accident records, speed and volume data, traffic distribution patterns, and safety analysis that validate the determinations of miles under high crash severity and high crash probability.**

**Response:** The SQF requested accident reports (crash history) from the California Highway Patrol in Bakersfield, Porterville, Visalia, and Fresno; Forest Service law enforcement personnel; and Porterville Dispatch Center. A review by those offices found no records of vehicle accidents between street legal and non-

street legal vehicles. Current traffic studies are not available. Mixed use analyses were conducted by an agency-designated engineer and are available in the project record.

**PC 75: The Sequoia National Forest should adjust both the Sequoia's core transportation system and recreation travel network in light of funding limitations for maintenance, monitoring, and enforcement.**

**Response:** The availability of resources was a consideration in designating routes for motor vehicle use. Section 212.55(a) of the Travel Management Rule includes, as a criterion for designation, "the need for maintenance and administration of roads, trails, and areas that would arise if the uses under consideration are designated; and the availability of resources for that maintenance and administration." Maintenance schedules and associated costs for maintenance are based on an optimal maintenance scenario, but what is undertaken as a program of work in an annual program is at the discretion of the responsible official and subject to the limits of staffing and funding. Even though annual or actual maintenance is often below this optimal level, that does not mean roads and trails are not being adequately maintained. The primary focus of maintenance for roads is to protect public health and safety, and provide resource protection.

**PC 77: The Sequoia National Forest should display all NEPA documents that provide documentation of closure decisions for roads and trails in the forest.**

**Response:** Routes that are not NFTS roads or trails (i.e., unauthorized routes) do not require NEPA documentation unless they are proposed for addition to the NFTS. They then require analysis and a decision that they should be added to the system and designated for public motor vehicle use, even if they have a history of being used by motor vehicles.

**PC 78: The Sequoia National Forest should reveal that over 90% of the inventoried routes are well over 25 years old, reviewed through the NEPA process, and have been in use for more than 50 years.**

**Response:** The forest transportation system has been developed through active management and decision-making over time, both pre- and post-NEPA. The baseline system represents those routes included in the forest transportation atlas, roads with Forest Service signs and numbers, and documentation of maintenance and other management activities. The NFTS was reviewed prior to the start of this project and was established as the baseline. It consists of the routes displayed in the Forest Transportation Atlas (I-Web/INFRA database). Any routes that were found and inventoried that were not yet in the database were considered "unauthorized" and were included for analysis.

**PC 79: The Sequoia National Forest should perform analysis using current and accepted practices and address the effects of increased use on a reduced trail system as proposed by the action alternatives.**

**Response:** Potential impacts to motorized recreation and access, including the effects of reducing available motorized vehicle routes, are analyzed in the Recreation Resources section of Chapter 3. Modified Alternative 3, as described in Chapter 2, provides the highest level of diversity and access while regulating cross-country motor vehicle travel and addressing resource, right-of-way, and lack of use concerns (other needs for this project).

Those unauthorized routes not proposed for addition to the NFTS in the alternatives generally experience only light use, such that additional use on remaining routes does not meaningfully result in a change in the recreation resource condition. A reduction in available roads and motorized trails may be more pronounced in concentrated recreation areas, where capacity is a greater issue due to the higher use levels. Concentrated recreation areas, however, are largely available by existing county, state, or NFTS roads, including all developed recreation sites.

**PC 80: The Sequoia National Forest should not designate trails for OHV use that were designed for non-motorized use.**

**Response:** The Forest Transportation Atlas has not been updated to reflect that some trails that were originally designed for non-motorized use are now being managed for motorized use. These trails are being designated for motorized use to correct those data. Alternatives 3, Modified 3, and 4 propose that the designations for 31E66, a portion of 31E78, and 31E78 be changed from motorized use to non-motorized use.

**PC 81: The Sequoia National Forest should provide the documentation regarding the specifics of each trail and why each one requested was not considered for addition to the NFTS.**

**Response:** Each route was analyzed in the context of the designation criteria specified in Subpart B of the Travel Management Rule (36 CFR 212.55). These criteria require the Forest Service to consider effects on natural and cultural resources and to minimize damage, harassment, and disruption of certain resources such as soil, vegetation, and wildlife when designating trails and open areas, as well as the value of each route for recreation access. Consideration of these criteria has assured that the environmental impacts are properly taken into account when making decisions to add unauthorized routes to the NFTS.

The description of each alternative (in Chapter 2) that proposes adding unauthorized routes as NFTS trails or roads contains tables listing those routes and the mitigation measures or actions required before they are added. A database containing the concerns and benefits identified for the unauthorized routes requested by the public is available upon request after publication of the FEIS. Because the concerns with some routes address sensitive sites, all resource information associated with unauthorized routes cannot be provided.

**PC 82: The Sequoia National Forest should take a separate discrete action to “un-designate” a route in order to stop motorized use.**

**Response:** All decisions regarding public wheeled motor vehicle use on roads and trails and areas must be consistent with the Forest Plan, relevant laws, regulations, and policies. As part of this project, each route (both NFTS and unauthorized) was analyzed in the context of the designation criteria specified in Subpart B of the Travel Management Rule (36 CFR 212.55).

**PC 83: The Sequoia National Forest should pave the proposed designated routes in the areas between the take line and the shoreline of the lake.**

**Response:** This would be a very large undertaking and is outside the scope of this project.

**PC 84: The Sequoia National Forest should use the term “unclassified” instead of “unauthorized.”**

**Response:** The Forest Service has tried to use consistent, understandable terminology when referring to the existing situation and alternatives. The Travel Management regulations define a “designated” road, trail, or area as “a National Forest System road, a National Forest System trail, or an area on National Forest System lands that is designated for motor vehicle use pursuant to 36 CFR 212.51 on a motor vehicle use map” (36 CFR 212.1). An unauthorized road or trail is defined as “a road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas.” This definition makes clear that unauthorized roads and trails are not part of the forest transportation system and are not officially recognized by the Forest Service.

Unauthorized routes may be designated for motor vehicle use pursuant to 36 CFR 212.51 of the Travel Management regulations following public consideration and appropriate site-specific environmental analysis. Once designated, these routes would become NFS roads or trails and would be included in a forest transportation atlas and reflected on a MVUM.

**PC 85: The Sequoia National Forest should not limit off-highway vehicle travel by the public to only designated routes.**

**Response:** According to the Travel Management Rule 36 CFR 212.50 Purpose, scope, and definitions. “...Motor vehicle use off designated roads and trails and outside designated areas is prohibited by 36 CFR 261.13.”

**PC 86: The Sequoia National Forest should provide small open or play areas near some of the more popular primitive camping areas.**

**Response:** The SQF looked at the existing NFTS and unauthorized routes for public motorized vehicle use. During the collaboration process with the public, no small open or play areas were identified; therefore, no new areas were proposed.

**PC 87: The Sequoia National Forest should close and restore all user-created routes to natural conditions.**

**Response:** This was analyzed for Alternative 5. A separate NEPA process is required to decommission or restore routes to natural conditions.

**PC 88: The Sequoia National Forest should set aside small areas for these vehicles close to main roads.**

**Response:** Limiting motorized vehicle use to only these areas would not meet the needs to provide motor vehicle access to dispersed recreation opportunities or to provide a diversity of motorized recreation opportunities (Purpose and Need section of Chapter 1). It would also not address Issue #1; Access and Recreation Opportunity.

**PC 89: The Sequoia National Forest should designate lake access using recreation polygons.**

**Response:** Modified Alternative 3 includes a proposal to add open travel areas around Lake Isabella to provide lake access.

**PC 91: The Sequoia National Forest should restrict vehicle access to Lake Isabella.**

**Response:** Modified Alternative 3 includes a proposal to add open travel areas around Lake Isabella to provide access to the water's edge. This will change current access, restricting or denying access to some areas, but retaining access to other areas.

**PC 93: The Sequoia National Forest should leave the access to the Lake as it is.**

**Response:** Modified Alternative 3 includes a proposal to add open travel areas around Lake Isabella to provide water and beach access. This will change current access, restricting or denying access to some areas, but retaining access to other areas. The national Travel Management Rule requires the prohibition of cross-country travel and the designation of a system of roads and trails open for public wheeled motor vehicle use.

**PC 94: The Sequoia National Forest should keep the trails open in the area around Evans Flat Campground.**

**Response:** This is proposed in Alternatives 3 and Modified 3 (the selected alternative); please see the maps for these alternatives.

**PC 95: The Sequoia National Forest should display the Willow Gulch (34E41) and Little Dry (32E52) trails on the Piute Mountains area alternative maps.**

**Response:** Please see the map for Modified Alternative 3.

**PC 96: The Sequoia National Forest should maintain the current trail system.**

**Response:** All of the trails in the SQF Transportation Atlas are proposed for retention as motorized trails, with the exception of two that extend into the Giant Sequoia National Monument (Sunday and Bohna Peak trails). The national Travel Management Rule requires the prohibition of cross-country travel and the

designation of a system of roads and trails open for public wheeled motor vehicle use. Routes that are not NFTS roads or trails (unauthorized routes) require analysis and a decision that they should be added to the system and designated for public motor vehicle use, even if they have a history of being used by motor vehicles.

**PC 97: The Sequoia National Forest should expand designated single track opportunities.**

**Response:** See Modified Alternative 3 in Chapter 2.

**PC 99: The Sequoia National Forest should add specific trails and/or areas.**

**Response:** Following are responses to comments on specific roads and trails:

Changes to routes in the Frog Meadow-Tobias-Black Mountain-Tyler-Baker areas are being made so that loop opportunities are available for all vehicles. 24S15 is a road open only to highway legal vehicles; a small section is proposed for mixed use to allow a motorcycle trail to Portuguese Pass. This road connects two paved roads: 23S16 and State Route 155.

Road 24S50C runs along the border of the Giant Sequoia National Monument, sometimes going inside the Monument. Road 24S10 leads to private property. Unauthorized route U00223 is proposed to be designated as a motorcycle trail in Alternatives 1, 3, and Modified 3.

Roads 25S17 and 25S15C both loop to or begin on Rancheria Road. The Unal Trail, a non-motorized trail, is surrounded by these roads and is considered a “quiet” area.

Roads 24S31 and 24S77 connect in Modified Alternative 3.

Rancheria Road is a county-maintained paved road from State Route 155 to the gate just past the Shirley Meadow Ski area parking area. Both Rancheria Road and Road 25S17 connect to other non-Forest Service roads.

Modified Alternative 3 includes an open travel area at South Fork.

Modified Alternative 3 includes open travel areas at Tillie, Boulder, and Hungry Gulch.

The SQF has no right-of-way or easement from CalTrans for the unauthorized trail U01158; a fence has been constructed to restrict access from State Route 178.

Trails 31E83 and 31E66 lead directly into the Giant Sequoia National Monument where motorized use is restricted to roads.

Rancheria Road is partly Kern County jurisdiction (the paved portion from Shirley Meadow Ski Area to State Route 155); Road 24S15 connects Road 23S16 (paved road for only highway legal vehicles) and State Route 155.

Modified Alternative 3 includes open travel areas at Brown's Cove, Paradise Cove, Auxiliary Dam, and Stine Cove; but motorized use at Hanning Flat would be limited to designated routes.

Unauthorized route U00223 is designated as a motorcycle trail in Modified Alternative 3.

The SQF is designating routes around the lake as open to highway legal vehicles only; Weldon and South Lake are outside the forest boundary.

Brown's Cove is designated as a day use area; this was carried over from the Corps of Engineers' Lake Plan.

China Garden (Road 27S37) is proposed to be closed to motorized use from the first section off of State Route 178; access to the Kern River will continue to be available; the public will have to hike down to it as the second section of 27S37 will not be available for motorized use.

**PC 114: The Sequoia National Forest should compare the cost to obliterate each trail compared to the cost of maintaining each trail.**

**Response:** Obliterating trails is not part of the Purpose and Need for this project and is outside of the scope of this project.

**PC 122: The Sequoia National Forest should address the adverse impacts to motorized recreation and access due to loss of trails and roads where public use has been well established and accepted by the agency.**

**Response:** Potential impacts to motorized recreation and access, including the effects of reducing available motorized vehicle routes, are analyzed in the Recreation Resources section of Chapter 3. Modified Alternative 3, as described in Chapter 2, provides the highest level of diversity and access while regulating cross-country motor vehicle travel and addressing resource, right-of-way, and lack of use concerns (other needs for this project).

Those unauthorized routes not proposed for addition to the NFTS in the alternatives generally experience only light use, such that additional use on remaining routes does not meaningfully result in a change in the recreation resource condition. A reduction in available roads and motorized trails may be more pronounced in concentrated recreation areas, where capacity is a greater issue due to the higher use levels. Concentrated recreation areas, however, are largely available by existing county, state, or NFTS roads, including all developed recreation sites.

**PC 123: The Sequoia National Forest should provide opportunities for dual sport motorcycle recreation.**

**Response:** Trails designated for motorcycles only are available for dual sport motorcycles as are trails designated for all vehicles.

**PC 158: The Sequoia National Forest should impose a 5 mph speed limit around the lake.**

**Response:** The recommended campground speed limit is 10 mph. Although changing speed limits is not part of the Purpose and Need for this project, a change to the speed limit around the lake is being considered.

**PC 222: The Sequoia National Forest should analyze the displacement of use and overuse of the few remaining roads and trails in the cumulative effects.**

**Response:** Potential impacts to motorized recreation and access, including the cumulative effects for all alternatives, are analyzed in the Recreation Resources section of Chapter 3. Modified Alternative 3, as described in Chapter 2, provides the highest level of diversity and access while regulating cross-country motor vehicle travel and addressing resource, right-of-way, and lack of use concerns (other needs for this project).

If visitors are not able to find an opportunity for their chosen activity in the project area, they may choose to recreate in other state or private recreation areas, or, if they encounter recreational crowding in the SQF, they may choose to return to the forest at another, less crowded time of day or season. Those unauthorized routes not proposed for addition to the NFTS in the alternatives generally experience only light use, such that additional use on remaining routes does not meaningfully result in a change in the recreation resource condition. A reduction in available roads and motorized trails may be more pronounced in concentrated recreation areas, where capacity is a greater issue due to the higher use levels. Concentrated recreation areas, however, are largely available by existing county, state, or NFTS roads, including all developed recreation sites.

**PC 225: The Sequoia National Forest should substantiate the claim on page 8 of the Purpose and Need section that the proliferation of unplanned, non-sustainable roads, trails, and areas created by cross-country travel adversely impact the environment.**

**Response:** Need #1 in the Purpose and Need section states: “The proliferation of unplanned, unauthorized, non-sustainable roads, trails, and areas created by cross-country travel adversely impacts the environment.” Cross-country motor vehicle travel has resulted in impacts to various natural resources within the project area. These effects are analyzed by resource area in Chapter 3.

**PC 226: The Sequoia National Forest should remove and strike all reference to seasonal closures relating to the existing transportation system.**

**Response:** The Travel Management Rule allows for seasonal designations “if appropriate, the times of year for which use is designated” (36 CFR § 212.56). Seasonal closures are needed to meet Forest Plan standards and guidelines that require a closure during wet weather periods on unsurfaced routes. Seasonal closures on such routes are intended to protect roads and trails from damage when the travel tread cannot support the vehicle use, as well as to prevent rutting, soil erosion, and other resource damage.

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**PC 227: The Sequoia National Forest should use the latest studies available and furnish information regarding local sales figures, vehicle type, and motor vehicle usage for the region.**

**Response:** Socio-economic concerns were addressed in the Social and Economic Resources section of Chapter 3, including an analysis of local trends in motorized use. The National Visitor Use Monitoring (NVUM) survey for the SQF that assesses existing recreation demand was used to estimate visitor use on the forest.

**PC 230: The Sequoia National Forest should analyze the existing condition with respect to motorized use, adding all of the unauthorized trails to the NFTS.**

**Response:** Alternative 2 provides a benchmark for the assessment of impacts resulting from the existing condition, because all unauthorized routes would remain available for motorized use. In Chapter 3, the potential effects of designating existing unauthorized routes under Alternative 2 are discussed by resource area. Each resource specialist used measurement indicators to measure change from existing conditions under each of the alternatives.

The description of each alternative (in Chapter 2) that proposes adding unauthorized routes as NFTS trails or roads contains tables listing those routes and the mitigation measures or actions required before they are added. A database containing the concerns and benefits identified for the unauthorized routes requested by the public is available upon request after publication of the FEIS. Because the concerns with some routes address sensitive sites, all resource information associated with unauthorized routes cannot be provided.

**PC 231: The Sequoia National Forest should provide studies or scientific data showing that existing use is causing environmental impacts.**

**Response:** Routes that are not NFTS roads or trails (i.e., unauthorized routes) require analysis and a decision that they should be added to the system and designated for public motor vehicle use, even if they have a history of being used by motor vehicles. Chapter 3 of the EIS discloses the potential effects of designating existing unauthorized routes on affected resources in its analysis of the effects under Alternative 2. This alternative provides a benchmark for the assessment of impacts resulting from the existing condition, especially for recreational opportunities, because all unauthorized routes would remain available for motorized use.

While some routes are currently stable and are contributing no detrimental effects in the short or long term, resource impacts from motorized use on other routes require action to address, either by eliminating motorized use of the route or reducing or rectifying the impact through mitigation measures. The Travel Management Rule criteria do not specify that motor vehicle use should be restricted only when it can be clearly proven to be harmful to the environment. Instead, they require that the responsible official consider effects on the provision of recreational opportunities, as well as effects on natural and cultural resources (36 CFR 212.55(a)). For trails and areas, the criteria at 36 CFR 212.55(b) require

consideration of effects on listed resources with the objective of minimizing those impacts.

**PC 232: The Sequoia National Forest should perform a capacity assessment and demand analysis.**

**Response:** The Social and Economic Resources section of Chapter 3 includes an analysis of local trends in motorized use. The National Visitor Use Monitoring (NVUM) survey for the SQF that assesses existing recreation demand was used to estimate visitor use on the forest and is summarized in the Recreation Resources section of Chapter 3. A capacity assessment was not conducted for this project, but the effects analysis for Recreation Resources (Chapter 3) discusses the impacts to the SQF NFTS, including changes to the quantity of motorized recreation opportunities, under each of the alternatives.

**PC 233: The Sequoia National Forest should explain exactly how the routes in the proposed action and other alternatives were chosen.**

**Response:** Each route was analyzed in the context of the designation criteria specified in Subpart B of the Travel Management Rule (36 CFR 212.55). These criteria require the Forest Service to consider effects on natural and cultural resources and to minimize damage, harassment, and disruption of certain resources such as soil, vegetation, and wildlife when designating trails and open areas, as well as the value of each route for recreation access. Routes were reviewed by the interdisciplinary team and chosen based on the criteria of the Travel Management Rule and each members' concerns and knowledge of the routes.

A database containing the concerns and benefits identified for the unauthorized routes requested by the public is available upon request after publication of the FEIS. Because the concerns with some routes address sensitive sites, all resource information associated with unauthorized routes cannot be provided.

**PC 234: The Sequoia National Forest should address parking areas associated with each of the designated routes by alternative.**

**Response:** Most routes do not have designated parking areas. Parking is limited to one vehicle length or 30 feet from designated routes, except in areas where resource damage or safety concerns exist.

**PC 235: The Sequoia National Forest should include altitude based seasons of use and conditional snow travel by wheeled motor vehicles and OHVs.**

**Response:** For the Proposed Action, Alternative 1, anticipated snow levels based on elevation were used to determine the season of use for each route. The season of use was based on three elevation ranges, resulting in three different seasons of use: year-round (lower elevations), 5/1-11/15 (middle elevations), and 5/15-11/15 (higher elevations). Under Alternatives 3, Modified 3, and 4, the proposed season of use was modified to consider wildlife concerns and those routes only accessible from higher elevations.

**PC 242: The Sequoia National Forest should address the need for monitoring and policing the existing NFTS.**

**Response:** 36 CFR 212.57 states that “the responsible official shall monitor the effects of motor vehicle use on designated roads and trails and in designated areas under the jurisdiction of that responsible official, consistent with the applicable land management plan, as appropriate and feasible.”

**PC 243: The Sequoia National Forest should provide sufficient public access and identify that the current NFTS limits motorized recreation.**

**Response:** The Comparison of Alternatives section of Chapter 2 includes a table showing the miles of routes available by vehicle class for each alternative. Potential impacts to motorized recreation and access, including the effects of reducing available motorized vehicle routes, are analyzed in the Recreation Resources section of Chapter 3. Modified Alternative 3, as described in Chapter 2, provides the highest level of diversity and access while regulating cross-country motor vehicle travel and addressing resource, right-of-way, and lack of use concerns (other needs for this project).

**PC 244: The Sequoia National Forest should show that existing motorized use causes significant environmental impacts.**

**Response:** The SQF never took an affirmative action to create, construct, or manage any of the unauthorized roads, trails, and areas created by cross-country travel, or any other unauthorized routes created for temporary use and not intended for public use. The environmental effects are analyzed by resource area in Chapter 3. Alternative 2 provides an important point of reference for contrasting existing resource impacts and recreational uses with the other alternatives. This alternative provides a benchmark for the assessment of impacts resulting from the existing condition, especially for recreational opportunities, because all unauthorized routes would remain available for motorized use.

**PC 251: The Sequoia National Forest should describe the factors that would be used in the consideration of future additions of unauthorized routes.**

**Response:** If designated routes or motorized trails become overcrowded in the future, the Forest Service will consider revising route designations to respond to changing conditions. The factors to be used will be determined at that time.

**PC 252: The Sequoia National Forest should focus on assessing the environmental and social impacts of the existing system of routes not just the new user-created routes.**

**Response:** Routes that are not NFTS roads or trails (i.e., unauthorized routes) require analysis and a decision that they should be added to the system and designated for public motor vehicle use, even if they have a history of being used by motor vehicles. Chapter 3 of the EIS discloses the potential effects of designating existing unauthorized routes, as well as those from the existing

system of routes, on affected resources in its analysis of the effects from Alternative 2. This alternative provides a benchmark for the assessment of impacts resulting from the existing condition, especially for recreational opportunities, because all unauthorized routes would remain available for motorized use.

While some routes are currently stable and are contributing no detrimental effects in the short or long term, resource impacts from motorized use on other routes require action to address, either by eliminating motorized use of the route or reducing or rectifying the impact through mitigation measures. The Travel Management Rule criteria do not specify that motor vehicle use should be restricted only when it can be clearly proven to be harmful to the environment. Instead, they require that the responsible official consider effects on the provision of recreational opportunities, as well as effects on natural and cultural resources (36 CFR 212.55(a)). For trails and areas, the criteria at 36 CFR 212.55(b) require consideration of effects on listed resources with the objective of minimizing those impacts.

**PC 264: The Sequoia National Forest should disclose legally binding and readily-available information about OHV visitation.**

**Response:** Visitor use information used for the analysis in the Recreation Resources section of Chapter 3 is from the National Visitor Use Monitoring Program (NVUM). The NVUM collects information at national forests and grasslands on visitor use. It is designed to provide statistically reliable estimates of recreation visitation for national forests such as the Sequoia. The NVUM study is the most current scientific data available.

**PC 269: The Sequoia National Forest should designate all roads that were requested for motorized mixed use.**

**Response:** A qualified engineer conducted a motorized mixed use analysis for all roads proposed for motorized mixed use. That mixed use analysis is discussed and summarized in Appendix E.

**PC 270: The Sequoia National Forest should identify the minimum road system needed for safe and efficient travel and administration of National Forest System lands.**

**Response:** The Travel Management Rule is comprised of three parts: Subpart A, Administration of the Forest Transportation System; Subpart B, Designation of Roads, Trails, and Areas for Motor Vehicle Use; and Subpart C, Use by Over-snow Vehicles. The Rule does not establish requirements for the order in which to implement the three parts. The scope of this action is limited to implementation of Subpart B and is focused on the prohibition of cross-country motor vehicle travel and the production of a MVUM. The identification of the future road system and minimum NFTS needed for administration, utilization, and protection of NFS lands is contained in Subpart A. There is no legal requirement in the regulations for the agency to implement Subpart A as a pre-condition to, or part of, the current proposed action.

**PC 293: The Sequoia National Forest should disclose that dispersing use decreases resource impacts and maintenance costs.**

**Response:** The purpose and need for this project is to consider the effects (direct, indirect, and cumulative) of prohibiting cross-country travel, adding proposed unauthorized routes, and proposed changes to the existing NFTS. These effects are analyzed by resource area, including the impacts of cross-country travel, in Chapter 3. The effects analysis in the Transportation section of Chapter 3 includes a discussion of road and trail maintenance costs.

**PC 294: The Sequoia National Forest should state that loop and destination trails are important to preserve.**

**Response:** In all action alternatives, the SQF worked to preserve, expand, and create trail loop opportunities in the designation of motorized routes.

**PC 300: The Sequoia National Forest should address motorized use of the land exposed by Lake Isabella as its waters recede.**

**Response:** Modified Alternative 3 includes a proposal to add open travel areas around Lake Isabella to provide access to the water's edge. This would change current access but retain most shoreline access.

**PC 301: The Sequoia National Forest should allow open parking around the whole lake.**

**Response:** Modified Alternative 3 includes a proposal to add open travel areas around Lake Isabella.

**PC 302: The Sequoia National Forest should not reduce travel by any means for people with disabilities.**

**Response:** People with disabilities may use any of the designated motorized routes with appropriate vehicles. The Rehabilitation Act of 1973, which was amended by the Americans with Disabilities Act of 1990, set the direction that no person with a disability can be denied participation in a federal program that is available to all other people solely because of their disability. This Travel Management project is designed to provide reasonable access for public wheeled motor vehicles and the decision to be made applies to all forest visitors. As stated in the preamble to the national Travel Management regulations, there is no requirement to allow people with disabilities to use motor vehicles on roads or trails otherwise closed to motor vehicles, since such an exemption could fundamentally change the travel management program (Fed Reg V.70, No. 216, p. 68285).

**PC 303: The Sequoia National Forest should designate historic access routes for OHV recreation use when public input has requested said routes.**

**Response:** The forest considered all system and inventoried routes for designation; all known and requested routes were reviewed by the interdisciplinary team.

**PC 304: The Sequoia National Forest should designate trails out of Alta Sierra to access forest trails.**

**Response:** Please see the description of Modified Alternative 3 in Chapter 2. The Forest Service can only designate trails for public use that are under Forest Service jurisdiction, with proper rights-of-way and easements.

**PC 307: The Sequoia National Forest should keep open all trails and roads where appropriated funding, grants, and green sticker funding were spent.**

**Response:** Appropriated funds are available for use on NFTS roads and trails, whether they are open to the public, only open for administrative use, or in storage. When applying for grants and green sticker funding, the forest decides on which trails they propose to expend funds and for what purpose. They are usually NFTS trails, all of which we are designating for public motor vehicle use in this project.

**PC 308: The Sequoia National Forest should provide evidence to support the conclusion of a severe liability issue on ML 3 & 4 roads requiring extreme measures to reduce risk.**

**Response:** A mixed use analysis was conducted in accordance with agency policy and direction (see Appendix E). Roads classified as Maintenance Level (ML) 3, 4, or 5 are maintained for passenger vehicle traffic and are considered highways under state law. OHV use is illegal on these roads unless a waiver is obtained, which can only be done for segments less than three miles long.

**PC 309: The Sequoia National Forest should justify designating new routes when the forest has such a significant maintenance backlog.**

**Response:** The maintenance schedule and associated costs for maintaining roads and trails are based on an “optimum” modeling scenario. As with many aspects of management of the National Forest System, what is undertaken as a program of work in an annual program is at the discretion of the responsible official and subject to the limits of staffing and funding. Even though annual or actual maintenance is often below this optimal level, especially as facilities age, that does not mean roads and trails are not being adequately maintained. The primary focus of maintenance for roads is to protect public health and safety, and provide resource protection.

**PC 310: The Sequoia National Forest should include at least one alternative in which the deferred road and trail maintenance backlog is reduced or kept status quo.**

**Response:** The estimated maintenance costs for all alternatives differ by approximately \$17,000. To reduce the backlog, routes would be required to be reduced in number or maintenance level.

**PC 311: The Sequoia National Forest should track the miles of trails closed to multiple use and assign compensation credits as required by the Mediated Settlement Agreement (MSA).**

**Response:** The MSA states that “compensation credit’ shall be considered for closing of the existing Sirretta Peak trail to motorized use” (MSA p. 96 (II.L.2.a.(5))). The Sirretta Peak trail is not in this project area.

**PC 313: The Sequoia National Forest should clearly display how many miles are Maintenance Level 1 roads, temporary roads, and user-created trails.**

**Response:** The purpose and need for this project is to consider the effects (direct, indirect, and cumulative) of prohibiting cross-country travel, adding proposed unauthorized routes, and proposed changes to the existing NFTS. The description of each alternative (in Chapter 2) that proposes adding unauthorized routes as NFTS trails or roads contains tables listing those routes. Unauthorized routes are not separated into temporary roads and “user-created” trails. The table in Appendix A displays all of the proposed changes to system routes and unauthorized routes.

**PC 314: The Sequoia National Forest should develop some 50-inch trails for ATV use.**

**Response:** Alternatives 3 and Modified 3 propose trails for ATVs. ATVs may also use trails open to all vehicle classes.

**PC 315: The Sequoia National Forest should address the future needs of OHV recreation and the possibility that new trails will be created.**

**Response:** The scope of this project is to make limited changes and additions to the Forest transportation system. In the future, the Forest Service can consider revising route designations to respond to changing conditions.

**PC 316: The Sequoia National Forest should revise its trail maintenance standards.**

**Response:** Trail maintenance standards are provided in the Forest Service Directives from the Washington Office and implemented according to the Forest Plan.

**PC 317: The Sequoia National Forest should protect other forest users from the noise, dust, and noxious fumes from OHVs, especially along Rancheria Road and Mill Creek Trail off of the Old Canyon Road.**

**Response:** In designating a system of roads, trails, and areas open to motor vehicle use, local agency officials must consider minimization of conflicts among uses of NFS lands (Section 212.55(a) of the Travel Management Rule). These regulations implement Executive Order 11644 (February 8, 1972), “Use of Off-Road Vehicles on the Public Lands,” as amended by Executive Order 11989 (May 24, 1977). These executive orders direct federal agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

**PC 322: The Sequoia National Forest should open the roads accessing the river off of Old Canyon Road.**

**Response:** System roads accessing the Kern River from Kern County Road 214 (Old Kern Canyon Road) include 27S33 (Overpass), 27S29 (Group Camp), 27S06 (Sandy Flat Campground), and 27S05 (Hobo Campground). Unauthorized routes that access this area include U01088 (Quonset Beach) and U01076. Road 27S33 is proposed to be administrative use only, Road 27S29 is under special use permit, and U01088 is proposed to be added to the NFTS. The description of each alternative (in Chapter 2) contains tables listing proposed additions of and changes to routes.

**PC 329: The Sequoia National Forest should clearly display the current and future growth of motorized use for the forest to show its impacts on the existing roads and trails and the effects of this use on a reduced road and trail system.**

**Response:** The Travel Management Rule requires that we designate a system that allows for recreational use of NFS lands, but minimizes impacts. The SQF is proposing to add routes to the NFTS in order to accommodate the growth of OHV use. The Comparison of Alternatives section of Chapter 2 displays the miles of added routes by alternative. Potential impacts to motorized recreation and access, including the effects of reducing available motorized vehicle routes, are analyzed in the Recreation Resources section of Chapter 3. Modified Alternative 3, as described in Chapter 2, provides the highest level of diversity and access while regulating cross-country motor vehicle travel and addressing resource, right-of-way, and lack of use concerns (other needs for this project).

**Visual Resources**

**PC 238: The Sequoia National Forest should discuss that some people desire an altered visual landscape of roads and trails.**

**Response:** Page 30 of Landscape Aesthetics, a Handbook for Scenery Management, USDA Forest Service Agriculture Handbook Number 701 states:

“Research shows that there is a high degree of public agreement regarding scenic preferences. This research indicates that people value most highly the more visually attractive and natural-appearing landscapes.”

Page 364 “speaks of routes and cross country motorized travel that are not part of the designated system trails and roads. Designated or system trails and roads are developed features that have either been The scars referred to in this comment are not from trails and roads but resulting from some cross country activity and routes created from this activity.

The table on page 356 was added by an editor and is from the Stanislaus NFMP. This table does not relate the Sequoia National Forest and has been deleted. The Kern River Canyon falls into Retention (along the river such as Black Gulch) or Partial Retention (on the slopes).

## **Watershed and Soils**

### **PC 3: The Sequoia National Forest should update the existing conditions of watersheds affected by the Piute Fire.**

**Response:** The SQF will analyze changes to the NFTS in the Piute Mountains area and the effects of the Piute Fire on those watersheds in a subsequent environmental document sometime after a decision is made on this project.

### **PC 7: The Sequoia National Forest should show that it has undertaken an independent review of its CWE methodology to determine it is meeting regional guidelines.**

**Response:** The SQF CWE model was independently reviewed by Entrix in a document called Independent Review of Sequoia National Forests Cumulative Watershed Effects Methodology, published October 21, 1999. This reference has been added to the Hydrology Working Papers as part of the description of CWE methodology.

The principle findings of this independent evaluation are as follows: Sequoia National Forest's CWE methodology meets Region 5 guidelines and includes several forest-specific improvements to the more general guidance. Sequoia National Forest's CWE methodology has been adequately validated by the field study in the Peppermint Creek drainage; that is, the results of the field study indicate that the CWE methodology fulfills the goals of Region 5 guidelines (Entrix 1999).

### **PC 10: The Sequoia National Forest should identify the total number of live stream crossings under each alternative.**

**Response:** Because all crossings at some time carry water, they are all evaluated as if they were live crossings. The CWE model assigns greater effects to stream crossings than other parts of a route. The results of the CWE analysis are displayed in the Hydrology and Soils Resources section of Chapter 3. The total number of live stream crossings under each alternative can be found in the CWE model results in the administrative record for this project.

### **PC 11: The Sequoia National Forest should distinguish between impacts to watersheds due to roads proposed for addition and those due to other sources such as existing roads, ski resorts, and residential developments.**

**Response:** This information is disclosed in detail the CWE analysis data files, a summary of the existing impacts for watersheds at or greater than 50% threshold is provided in the cumulative effects of existing condition narrative, and an introduction of existing condition touches on the effects sources at the HUC 6 level description.

### **PC 12: The Sequoia National Forest should examine that trail closures increase CWE, while keeping trails open lessens CWE.**

**Response:** By prohibiting motorized vehicle use on existing unauthorized routes, those trails have the opportunity to revegetate. In the long term, this would lessen

CWE in their watersheds. Unauthorized routes were created without consideration and planning for aquatic habitat and water quality concerns. In the short term the unauthorized routes and areas disturbed by motor vehicle use would not change much because removal of vegetation, compaction of soils, and alteration of drainage patterns require time to heal without active restoration. Elimination of traffic on unauthorized routes and areas would reduce erosion, but the routes would still intercept and concentrate surface flows and produce sediment. In the long term, some or all unauthorized routes and areas would probably re-vegetate and regain some of their hydrologic and geomorphic functions. The results of the CWE analysis for this project are presented and discussed in the Hydrology and Soils Resources section of Chapter 3. All current system trails remain part of the NFTS.

**PC 27: The Sequoia National Forest should restore or obliterate unauthorized routes in at-risk watersheds as mitigation.**

**Response:** The forest will include unauthorized routes in at-risk watersheds that are in need of restoration in a Watershed Improvement Needs Inventory (WINI). The WINI for this project area will define the level and type of restoration proposed. A separate environmental analysis document and decision is required for restoration projects. Restoration projects will be implemented as funding allows. Mitigation measures will only be used on those unauthorized routes added to the NFTS.

**PC 33: The Sequoia National Forest should analyze and determine the effects of inventoried routes on watersheds based on the age of the route when analyzing cumulative effects.**

**Response:** The age of inventoried unauthorized routes was considered to be the number of years since they were inventoried in 2004, or five years old. Routes that continue to be used do not heal over time, so a four-year-old road is assessed as having the same level of impact as a 25-year-old road. Only active routes were inventoried. Effects analysis focuses on the proximity to the nearest drainage, stream crossings, slope, ground cover, and other site-specific factors. A detailed list of the inventoried routes that were analyzed is available in the CWE data sheets (by HUC 7 watershed) in the administrative record for this project.

**PC 34: The Sequoia National Forest should remove all sections of the DEIS which state that grazing and OHV use impair hydrologic function based on the Poso Creek example.**

**Response:** The National Environmental Protection Act (NEPA) directs the evaluation of cumulative effects as the analysis of past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (NEPA, 40 CFR Sec.1508.7). Because of this direction the forest is required to consider the grazing and OHV use, in addition to all other past, present, and reasonably foreseeable future actions, in cumulative effects analysis. While the forest agrees that not all grazing and OHV use impair hydrologic function, these activities have

the potential to affect hydrologic function as stated in the Hydrology and Soils Resources section of Chapter 3.

**PC 35: The Sequoia National Forest should explain why a description of conditions in 14 reaches is sufficient to assess conditions in ten HUC 5 watersheds and provide site-specific analysis of each route to be designated.**

**Response:** A consistency review of compliance with Riparian Conservation Objectives may be found in Appendix F of the Watershed Resources Report.

**PC 36: The Sequoia National Forest should not add routes without ensuring BMP compliance or without screening by the RCO analysis.**

**Response:** All routes would be required to be in compliance with BMPs, even those NFTS routes not specifically mentioned in the EIS. Those NFTS routes are already designated, will not be changed, and are already expected to follow BMP direction.

**PC 37: The Sequoia National Forest should support by analysis or documentation that user-created trails are eroded and in poor condition and to re-evaluate these trails to determine the risk of erosion and to identify those routes that are deemed stable.**

**Response:** The analysis used to determine the condition of unauthorized routes included Best Management Practices Evaluation Program evaluations, as well as some state OHV condition inventories performed in the Piute, Greenhorn, and Breckenridge areas to help target and define the condition of routes. Following the Piute Fire and subsequent flooding in 2008, the majority of routes in the Piutes were identified as eroded and unstable by the Burned Area Emergency Response team report.

**PC 38: The Sequoia National Forest should provide baseline water quality data and the potential for degradation of water quality.**

**Response:** The Forest Service in Region 5 is authorized as a Designated Management Agency under the 1981 Management Agency Agreement with the State Water Quality Control Board. We implement state-approved BMPs designed to maintain water quality standards and control nonpoint source pollution.<sup>10</sup> As the BMPs used by the SQF have been approved by the state in the aforementioned management agreement, they are the primary mechanism for meeting water quality standards. The SQF monitoring BMPs are effective in the mitigation of non-point source pollution and are therefore in compliance with applicable water quality standards.<sup>11</sup>

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<sup>10</sup> Management Agency Agreement Between the State Water Resources Control Board, State of California And the Forest Service, United States Department of Agriculture., 1981.

<sup>11</sup> <http://www.epa.gov/waterscience/standards/library/npscontrols.pdf>, EPA, Water Quality Standards Handbook, Chapter 2, General Program Guidance, Page 2-25, NONPOINT SOURCE CONTROLS AND WATER QUALITY STANDARDS, August 19, 1987

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Oregon Natural Resources Council v. Lyng, 882 F.2d 1417, 1424 (9th Cir. 1989) upheld that the use of BMPs constitutes compliance with state water quality standards. The Ninth Circuit Court of Appeals noted in this case that "proper implementation of BMPs will constitute compliance with the Clean Water Act unless water quality monitoring reveals that the BMPs have permitted violations of state water quality standards."

Our BMP #4-7 requires baseline water quality monitoring for OHV use. The stream condition inventory monitoring satisfies this requirement.

**PC 90: The Sequoia National Forest should manage the forest in such a way that the watershed is protected, restored, and improved to provide clean drinking water.**

**Response:** The SQF agrees with this comment. This is why the forest is evaluating unauthorized routes for resource damage. The EIS is the vehicle to develop a Motorized Travel Management Plan which will inventory all of the unauthorized routes, assess resource damage, and identify opportunities for restoration as well as recreation.

**PC 139: The Sequoia National Forest should disclose that it is subject to permitting requirements for its OHV trails and roads.**

**Response:** The Forest Service in Region 5 is authorized as a Designated Management Agency under the 1981 Management Agency Agreement with the State Water Quality Control Board. We implement state-approved BMPs designed to maintain water quality standards and control non-point source pollution.<sup>12</sup> As the BMPs used by the SQF have been approved by the state in the aforementioned management agreement, they are the primary mechanism for meeting water quality standards. The SQF monitoring BMPs are effective in the mitigation of non-point source pollution and are therefore in compliance with applicable water quality standards.<sup>13</sup>

The 1981 Management Agency Agreement between the State Water Resources Control Board, the State of California, and the Forest Service states in Section 2.b.:

"Section 313 of the Federal Water Pollution Control Act mandates federal agency compliance with the substantive and procedural requirements of state and local water pollution control law. It is contemplated by this agreement that Forest Service reasonable implementation of those practices and procedures and of this agreement will constitute compliance with Section 13260, Subdivision (a) of Section 13263, and Subdivision (b) of Section 13264, Water Code. It is further contemplated that these provisions requiring a report of proposed discharge and issuance of waste discharge requirements of non-point source discharges will be

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<sup>12</sup> Management Agency Agreement Between the State Water Resources Control Board, State of California And the Forest Service, United States Department of Agriculture., 1981.

<sup>13</sup> <http://www.epa.gov/waterscience/standards/library/npscontrols.pdf>, EPA, Water Quality Standards Handbook, Chapter 2, General Program Guidance, Page 2-25, NONPOINT SOURCE CONTROLS AND WATER QUALITY STANDARDS, August 19, 1987

waived by the Regional Board pursuant to Section 13269, Water Code, provided that the Forest Service reasonably implements those practices and procedures and the provisions of this agreement. However, waste discharges from land management activities resulting in point source discharges, as defined by the federal Water Pollution Act, will be subject to NEPDES permit requirements, since neither the State Board nor the Regional Board has authority to waive such permits.”

Therefore, as long as the SQF implements and monitors BMPs for non-point source pollution, it is exempt from filing for waste discharge permits for non-point source generating activities.

The management agency agreement is still in effect and allows for waivers of waste discharge requirements from Regional Boards. However, the agreement is currently not in full compliance with current state policy for non-point source pollution prevention, which requires that all activities with the potential to result in pollution of state waters be regulated under waste discharge requirements, waivers of waste discharge requirements, or basin prohibitions. OHV routes are not currently covered by any of these on national forest lands. However, the regional office is currently working with the State Water Resources Control Board to develop a state-wide waiver that would include OHV routes and the State Water Board voted to approve this resolution on August 4, 2009. Section 404 permits might in some circumstances be required for stream crossings that involve placement of fill in navigable waters of the United States and which do not meet the criteria for exemptions.

**PC 200: The Sequoia National Forest should comply with the Clean Water Act and the California Water Quality Control Act and evaluate the environmental effects associated with noncompliance.**

**Response:** Roads and trails are considered non-point sources of pollution and as such are addressed under Sections 208 and 319 of the Federal Clean Water Act. The Forest Service in Region 5 is authorized as a Designated Management Agency under the 1981 Management Agency Agreement with the State Water Quality Control Board. We implement state-approved BMPs designed to maintain water quality standards and control non-point source pollution.<sup>14</sup> As the BMPs used by the SQF have been approved by the state in the aforementioned management agreement, they are the primary mechanism for meeting water quality standards. The SQF monitoring BMPs are effective in the mitigation of non-point source pollution and are therefore in compliance with applicable water quality standards.<sup>15</sup>

Oregon Natural Resources Council v. Lyng, 882 F.2d 1417, 1424 (9th Cir. 1989) upheld that the use of BMPs constitutes compliance with state water quality standards. The Ninth Circuit Court of Appeals noted in this case that "proper

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<sup>15</sup> <http://www.epa.gov/waterscience/standards/library/npscontrols.pdf>, EPA, Water Quality Standards Handbook, Chapter 2, General Program Guidance, Page 2-25, NONPOINT SOURCE CONTROLS AND WATER QUALITY STANDARDS, August 19, 1987

implementation of BMPs will constitute compliance with the Clean Water Act unless water quality monitoring reveals that the BMPs have permitted violations of state water quality standards."

The management agency agreement is still in effect and allows for waivers of waste discharge requirements from Regional Boards. However, the agreement is currently not in full compliance with current state policy for non-point source pollution prevention, which requires that all activities with the potential to result in pollution of state waters be regulated under waste discharge requirements, waivers of waste discharge requirements, or basin prohibitions. OHV routes are currently covered by any of these on national forest lands. However, the regional office is currently working with the State Water Resources Control Board to develop a state-wide waiver that would include OHV routes and the State Water Board voted to approve this resolution on August 4, 2009. Section 404 permits might in some circumstances be required for stream crossings that involve placement of fill in navigable waters of the United States and which do not meet the criteria for exemptions.

**PC 201: The Sequoia National Forest should meet its own water quality management plan for non-point source pollution, Water Quality Management for Forest System Lands in California Best Management Practices.**

Response: The development of the Motorized Travel Management Plan implements BMP 4.7 which requires each forest to: (1) identify areas or routes where OHV use could cause degradation of water quality, (2) identify appropriate mitigation and controls, and (3) restrict OHV use to designated routes. This BMP also requires forests to take immediate corrective actions if considerable adverse effects are occurring or are likely to occur. The objective of this BMP is to provide a systematic process to determine when and to what extent OHV use will cause, or is causing, adverse effects on water quality. This is why the SQF is evaluating unauthorized routes and evaluating them in an EIS.

The Forest Service in Region 5 is authorized as a Designated Management Agency under the 1981 Management Agency Agreement with the State Water Quality Control Board. We implement state-approved BMPs designed to maintain water quality standards and control non-point source pollution.<sup>16</sup> As the BMPs used by the SQF have been approved by the state in the aforementioned management agreement, they are the primary mechanism for meeting water quality standards. The SQF monitoring BMPs are effective in the mitigation of non-point source pollution and are therefore in compliance with applicable water quality standards.<sup>17</sup>

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<sup>16</sup> Management Agency Agreement Between the State Water Resources Control Board, State of California And the Forest Service, United States Department of Agriculture., 1981.

<sup>17</sup> <http://www.epa.gov/waterscience/standards/library/npscontrols.pdf>, EPA, Water Quality Standards Handbook, Chapter 2, General Program Guidance, Page 2-25, NONPOINT SOURCE CONTROLS AND WATER QUALITY STANDARDS, August 19, 1987

The 1981 Management Agency Agreement between the State Water Resources Control Board, the State of California, and the Forest Service states in Section 2.b.:

“Section 313 of the Federal Water Pollution Control Act mandates federal agency compliance with the substantive and procedural requirements of state and local water pollution control law. It is contemplated by this agreement that Forest Service reasonable implementation of those practices and procedures and of this agreement will constitute compliance with Section 13260, Subdivision (a) of Section 13263, and Subdivision (b) of Section 13264, Water Code. It is further contemplated that these provisions requiring a report of proposed discharge and issuance of waste discharge requirements of non-point source discharges will be waived by the Regional Board pursuant to Section 13269, Water Code, provided that the Forest Service reasonably implements those practices and procedures and the provisions of this agreement. However, waste discharges from land management activities resulting in point source discharges, as defined by the federal Water Pollution Act, will be subject to NEPDES permit requirements, since neither the State Board nor the Regional Board has authority to waive such permits.”

Therefore, as long as the SQF implements and monitors BMPs for non-point source pollution, it is exempt from filing for waste discharge permits for non-point source generating activities.

**PC 202: The Sequoia National Forest should identify the total number of live stream crossings and evaluate the cumulative impact of these crossings.**

**Response:** The CWE model assigns greater effects to stream crossings than other parts of a route. The results of the CWE analysis are displayed in the Hydrology and Soils Resources section of Chapter 3. The total number of live stream crossings under each alternative can be found in the CWE model results in the administrative record for this project.

**PC 203: The Sequoia National Forest should analyze any trails, including differences in width.**

**Response:** For the analysis recorded in the Hydrology and Soils Resources Section of Chapter 3, routes were grouped by type: road, 4x4 trail, single track trail, or ATV trail. The average width of these routes was used for the analysis, so four different widths were assigned based on route type. The CWE model assigns greater effects to stream crossings than other parts of a route. Stream crossings were assessed as having greater effects than parts of routes outside of the stream zone. A detailed accounting of the level of impact by HUC 7 watershed is located in the CWE data sheets in the administrative record.

**PC 204: The Sequoia National Forest should remove the section of the DEIS that addresses evaluating new management activities within Riparian Conservation Areas and Critical Aquatic Refuges.**

**Response:** Unauthorized routes analyzed for addition to the NFTS must comply with an RCO analysis according to management direction in the 2004 SNFPA. This includes evaluating routes within Riparian Conservation Areas and Critical Aquatic Refuges.

**PC 205: The Sequoia National Forest should analyze the age of routes, reduction of use, road/trail densities, and stream crossings in the alternatives.**

**Response:** The age of inventoried unauthorized routes was considered to be the number of years since they were inventoried in 2004, or five years old. Routes that continue to be used do not heal over time, so a four-year-old road is assessed as having the same level of impact as a 25-year-old road. Effects analysis focuses on the proximity to the nearest drainage, stream crossings, slope, ground cover, and other site-specific factors. A detailed list of the inventoried routes that were analyzed is available in the CWE data sheets (by HUC 7 watershed) in the administrative record for this project.

**PC 206: The Sequoia National Forest should analyze the discrete point source conveyance into water of the United States of designated OHV trail and roads.**

**Response:** The use of OHV trail and roads is not considered point source pollution. This type of activity is considered to result in non-point source pollution and, as such, Section 208 of the Federal Clean Water Act recommends the development of BMPs to protect water and soil resources. BMPs are designed to eliminate the effects of this activity, to the extent practicable, before they are able to affect water and soil resources.

**PC 208: The Sequoia National Forest should remove, not add, routes within the Riparian Conservation Areas (RCAs) to prevent or restore the site that is causing sediment delivery.**

**Response:** RCAs are land allocations that are managed to maintain or restore the structure and function of aquatic, riparian, and meadow ecosystems. RCAs are not activity exclusion zones; they are zones of closely managed activity. Currently some of the unauthorized routes have the potential to affect, or are affecting, water quality in adjacent stream courses. The evaluation of unauthorized routes and whether to maintain an unauthorized route or remove the route is determined by a number of factors, including the impact to riparian-dependent species and water quality concerns. Adding currently unauthorized routes in RCAs can actually improve riparian and aquatic areas because the routes will be brought up to NFTS standards and properly maintained.

**PC 209: The Sequoia National Forest should explain, for each route, how the route is consistent with the Riparian Conservation Objectives (RCOs), based on measurable criteria.**

**Response:** As part of the Motorized Travel Management EIS, the addition of unauthorized routes to the NFTS is analyzed. The RCO consistency analysis is completed for all of the routes in the project area, not individually for each route.

A consistency review for compliance with the RCOs for the entire project is located in Appendix F of the Watershed Resources Report. Adding currently unauthorized routes in RCAs can actually improve riparian and aquatic areas because the routes will be brought up to NFTS standards and properly maintained.

**PC 214: The Sequoia National Forest should explain how the designation of any route within an RCA**

- helps restore hydrologic connectivity.**
- enhances or maintains aquatic-dependent species within that RCA.**
- preserves, restores, or enhances special aquatic features and processes needed to recover or enhance the viability of species in that RCA.**
- maintains, restores, or enhances water quality and habitat for riparian and aquatic species.**

**Response:** Designations of routes in RCAs do not help to restore hydrologic connectivity; enhance or maintain aquatic dependent species within that RCA; preserve, restore, or enhance special aquatic features and processes needed to recover or enhance the viability of species in that RCA; or maintain, restore, or enhance water quality and habitat for riparian and aquatic species. However, RCA's currently contain unauthorized routes that are affecting riparian and aquatic species and water quality. Bringing such routes, if they are to be considered for addition to the NFTS, into compliance with forest standards and NFTS standards would provide the forest with the opportunity to reduce impacts to riparian and aquatic species and water quality through the restoration of these areas. Also, adding such routes to the forest maintenance schedule would provide for the continued monitoring of drainage and erosion systems and the opportunity to reduce impacts to water and water-related resources in these areas. The RCO consistency analysis is completed for all of the routes in the project area. A consistency review for compliance with the RCOs for the entire project is located in Appendix F of the Watershed Resources Report.

**PC 215: The Sequoia National Forest should re-evaluate the cumulative effects analysis and strike any results that would incorporate past activities.**

**Response:** The National Environmental Protection Act (NEPA) directs the evaluation of cumulative effects as the analysis of past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (NEPA, 40 CFR Sec.1508.7). Because of this direction the forest is required to consider all past actions in cumulative effects analysis.

**PC 217: The Sequoia National Forest should remove the comment “decreased soil productivity” as trail tread is not subject to soil standards or vegetation.**

**Response:** Trail tread has been removed from analysis as routes are considered to be permanent facilities. The Region 5 Soil Handbook states that “The analysis standards are to be used for areas dedicated to growing vegetation. They are not applied to lands with other dedicated uses, such as developed campgrounds, administrative facilities or, in this case, the actual land surface authorized for travel by the public using various kinds of vehicles. Therefore decreased soil productivity at trail heads is not subject to soil standards.

**PC 218: The Sequoia National Forest should show links to the data with potential impacts on the soils and hydrology from designating specific motor vehicle routes.**

**Response:** Thank you for your comment. The Hydrology and Soils Resources section of Chapter 3 has been revised to link existing impacts at the HUC 6 watershed to the Cumulative Effects analysis.

**PC 220: The Sequoia National Forest should take into consideration specific soil types and elevation locations when determining Soil Risk Assessments.**

**Response:** The SQF used soil erosion hazard ratings (EHR) to evaluate unauthorized routes and environmental consequences of various alternatives. Appendix G of the Soil and Water Specialist Report displays HER ratings by route and alternative.

**Wildlife**

**PC 14: The Sequoia National Forest should sufficiently analyze and describe the impacts of newly designated routes on fish and game resources and hunting and fishing opportunities.**

**Response:** Impacts to mule deer and black bear habitat were assessed in the wildlife section of the EIS. Impacts to mountain quail and sooty grouse habitat were assessed in the Management Indicator Species Report. Aquatic macro invertebrates serve as a measure of the health of aquatic systems, including fish populations, and were evaluated in the Management Indicator Species Report as well. This information is summarized in the Wildlife Resources section of Chapter 3. The impacts to water quality were also evaluated in the Hydrology and Soils Resource section of Chapter 3.

**PC 40: The Sequoia National Forest should clearly show it has sound science or literature with which to analyze the effects of trails on terrestrial and aquatic species.**

**Response:** The evaluations of effects on terrestrial and aquatic species are based on the best available science. Gaines, et al. (2003) is the primary source for identifying potential disturbances from motorized routes. When sources were available with route density thresholds, such as for black bear (Hurley et al.

1981), deer (Thomas et al. 1979), and fisher (Freel 1991), those thresholds were used in the evaluations. For most species, published route density thresholds were not available so the alternatives were simply compared to each other.

**PC 41: The Sequoia National Forest should clarify what the Gaines et al research says and how it is used.**

**Response:** The Gaines, et al. (2003) paper provides a framework for the evaluation of potential effects of motorized routes by classifying effects and grouping species with similar responses. The environmental consequences of the alternatives in the EIS were arranged by species groups: wide-ranging carnivores, ungulates, late-successional forest associated species, riparian and wetland species, and snag associated species. The framework provided by the Gaines, et al. paper is summarized and discussed throughout the Wildlife Resources section of Chapter 3.

**PC 42: The Sequoia National Forest should select an alternative which avoids and minimizes adverse effects on threatened, endangered, and sensitive species and their habitat.**

**Response:** The Botanical Resources and Wildlife Resources sections of Chapter 3 describe the potential impacts to threatened, endangered, and sensitive species and their habitat. All the action alternatives comply with applicable guidelines in the Forest Plan and the 2004 SNFPA for minimizing impacts to certain wildlife resources. The analysis for wildlife resources shows that Modified Alternative 3 is not likely to threaten the viability of any threatened, endangered, or sensitive species. The Record of Decision, in selecting Modified Alternative 3, states "Habitat protection for endangered species, such as the California condor is enhanced through careful design and limitations of motorized routes that could affect these species. It also identifies important mitigation efforts that must be completed prior to designating certain routes for motor vehicle use. These, and other considerations, are central to minimizing impacts to resources while providing a quality transportation system for public motorized use."

**PC 43: The Sequoia National Forest should re-evaluate the first two wildlife analysis assumptions, that all vehicle types produce the same amount of disturbance and that all routes will produce the same disturbance effects.**

**Response:** Given the scientific uncertainties regarding disturbance effects on wildlife from different vehicle types, as well as uncertainties regarding which routes would be used by different vehicle types, our assumption is that all vehicle types result in the same amount of disturbance to wildlife, unless there is local information enabling a separate analysis by vehicle type. That local information is lacking, so all motorized routes were treated equally. Non-motorized routes were evaluated separately in the cumulative effects analysis in the Wildlife Resources section of Chapter 3.

**PC 44: The Sequoia National Forest should consider the frequency of use on each specific route as part of the wildlife analysis.**

**Response:** Usage data were not available for all of the routes considered, so all motorized routes were treated equally in the wildlife analysis in Chapter 3.

**PC 45: The Sequoia National Forest should re-evaluate the Zone of Influence analysis to address the potential loss of snags based on the real need and requirement of snags.**

**Response:** The 100-meter zone of influence was used to evaluate the potential for the removal of hazard trees along all routes in the appropriate habitat open to public motorized use. The 100-meter area was chosen to include the tallest hazard trees likely to be encountered. This is standard practice for hazard tree removal on the SQF (George Powell, Silviculturist, personal communication).

It was assumed that snags that were a threat to public safety would be removed from all NFTS routes. Most of the NFTS roads are Maintenance Levels 3, 4 and 5. Maintenance Level 2 roads and trails comprise a small percentage of the total routes evaluated.

**PC 46: The Sequoia National Forest should meet the higher standard of protection required under the Executive Order and Travel Management Rule that require that the project give deference to the needs of wildlife over the desires of motorized recreationists.**

**Response:** The direction in the Executive Orders and the national Travel Management regulations to consider minimizing impacts to various resources does not require the Forest Supervisor to select the most restrictive alternative. As described in the preamble to the national Travel Management regulations “(i)t is the intent of E.O. 11644 that motor vehicle use of trails and areas on federal lands be managed to address environmental and other impacts, but that motor vehicle use on federal lands continue in appropriate locations. An extreme interpretation of “minimize” would preclude any use at all, since impacts can always be reduced further by preventing them altogether. Such an interpretation would not reflect the full context of E.O. 11644 or other laws and policies related to multiple use of NFS lands” (Fed Reg V.70, No. 216, p 68281). The Purpose and Need section in Chapter 1 describes the elements from the travel management regulations and executive orders which were followed in the development of the alternatives, including the direction to consider minimizing the impacts on certain resources. The Record of Decision more thoroughly describes the Forest Supervisor’s basis for selecting Modified Alternative 3, based on consideration of the criteria in the executive orders and regulations.

All of the action alternatives comply with the applicable guidelines in the Forest Plan and the 2004 Sierra Nevada Forest Plan Amendment for minimizing impacts to certain wildlife resources.

**PC 47: The Sequoia National Forest should include specifics on mule deer that are necessary to properly and adequately assess the effects of motor vehicle travel on this species.**

**Response:** The analysis for mule deer in the Wildlife Resources section of Chapter 3 has been modified to address the issues you raised. Key mule deer

habitat and winter range are included in the evaluation. The most recent published population level evaluation is now included.

**PC 48: The Sequoia National Forest should close roads and trails within one-half mile of condor roost sites pursuant to the principles of the 1990 Mediated Settlement Agreement**

**Response:** All of the unpaved roads in the Basket Pass roost areas are closed in Alternatives 3, Modified 3, 4, and 5. As agreed to in consultation with the U.S. Fish and Wildlife Service, some routes in the Breckenridge roost areas will remain open unless monitoring determines the areas are being used by condors. The Breckenridge roost areas were used historically, but have not been occupied by condors since the 1980s.

**PC 49: The Sequoia National Forest should present evidence in the BE for sensitive species and the EIS that supports changing the season of use to April 15 – November 15 in the Breckenridge area.**

**Response:** The season of use proposed for 31E78 in Alternatives 3 and Modified 3 is intended to provide for pedestrian use of the trail in the spring, not for sensitive species protection.

**PC 50: The Sequoia National Forest should remove the statement “loss of aquatic habitat” from the DEIS.**

**Response:** Thank you for your comment. The intent of that statement was that there may be a reduction in the quality of aquatic habitat, although it may still be under threshold for impairment. This topic is addressed in the Management Indicator Species Report and summarized in the Wildlife Resources section of Chapter 3.

**PC 51: The Sequoia National Forest should maintain access to the lake at numerous locations for the installation and maintenance of fish and game habitat.**

**Response:** Modified Alternative 3 provides access in 17 areas open for motorized vehicle use at Lake Isabella, covering 2,246 acres. The Forest welcomes continued cooperation in creating fish habitat and could provide access through a special use permit if applicable.

**PC 117: The Sequoia National Forest should minimize the impacts to California spotted owls by proposing a minimum route system.**

**Response:** The Travel Management Rule is comprised of three parts: Subpart A, Administration of the Forest Transportation System; Subpart B, Designation of Roads, Trails, and Areas for Motor Vehicle Use; and Subpart C, Use by Over-snow Vehicles. The Rule does not establish requirements for the order in which to implement the three parts. The scope of this action is limited to implementation of Subpart B and is focused on the prohibition of cross-country motor vehicle travel and the production of a MVUM. The identification of the future road system and minimum NFTS needed for administration, utilization, and protection of NFS lands is contained in Subpart A. There is no legal requirement in the regulations

for the agency to implement Subpart A as a pre-condition to, or part of, the current proposed action.

All the action alternatives comply with the applicable guidelines in the Sequoia National Forest LMRP and the 2004 Sierra Nevada Forest Plan Amendment for minimizing impacts to spotted owl nesting habitat. The selection of the alternative to be implemented is up to the deciding official, in this case the Forest Supervisor.

**PC 133: The Sequoia National Forest should consult with the Fish and Wildlife Service.**

**Response:** The Forest Service has been in consultation with the U.S. Fish and Wildlife Service on all listed species potentially affected by travel management. A Biological Assessment of effects to those species has been developed and submitted to the U.S. Fish and Wildlife Service for their concurrence.

**PC 258: The Sequoia National Forest should analyze effects to the California Condor.**

**Response:** The potential effects of motorized vehicle use on California condors have been analyzed in a Biological Assessment. A summary of the determination of that assessment is included in the Wildlife Resources section of Chapter 3.

**PC 259: The Sequoia National Forest should offer biological support for restriction of motorized travel near known condor roosting sites.**

**Response:** The 1996 California Condor Recovery Plan (USDSI 1996) recommends a ½ mile buffer around roost sites to “provide adequate protection against human disturbance.” The Recovery Plan is based on the best available biological information related to the Federally Endangered California condor and meets the legal requirements of the Endangered Species Act. In consultation with the U.S. Fish and Wildlife Service, some routes in the Breckenridge roost areas will remain open unless monitoring determines the areas are being used by condors. The potential effects of motorized vehicle use on California condors have been analyzed in a Biological Assessment. A summary of the determination of that assessment is included in the Wildlife Resources section of Chapter 3.

**Letters from other Government Entities**

Following are copies of the comment letters received on the DEIS from federal, state, and local agencies and elected officials.

Motorized Travel Management Final Environmental Impact Statement  
Sequoia National Forest



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

April 17, 2009

Chris Sanders  
Team Leader  
Travel Management Project  
Sequoia National Forest  
1839 South Newcomb Street  
Porterville, CA 93257

Subject: Draft Environmental Impact Statement for Sequoia National Forest  
Motorized Travel Management, Kern and Tulare Counties, CA  
(CEQ#2009025)

Dear Mr. Sanders:

The U. S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. Our detailed comments are enclosed.

EPA commends the Forest Service for its efforts to address the many challenges inherent in developing a balanced, Public Motorized Travel Management Plan that responds to recreational and resource management demands. We acknowledge that the Travel Management Plan process is a positive step in addressing resource impacts from motorized uses. The permanent prohibition of cross country travel off designated routes and the switch from unmanaged to managed motorized recreational use will result in significant environmental benefits. Of special note are the extensive field surveys and inventory of existing unauthorized routes and the decision not to designate routes within the four special interest areas, one Research Natural Area, and the recently burned Plute Mountain area.

We have rated the DEIS as Environmental Concerns - Insufficient Information (EC-2) (see enclosed "Summary of Rating Definitions") due to our concerns regarding the scope of the travel management planning process, and the addition to the National Forest Transportation System of existing unauthorized routes in watersheds with significant soil and water resource impairment, or located in Critical Root Areas. Furthermore, we are concerned with the continued use of up to 55 routes that may intersect potential naturally occurring asbestos (NOA). Additional information is necessary to fully assess the seasonal

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closures, mitigation for potential impacts on fish, and monitoring and enforcement commitments.

We urge consideration of an alternative which does not include routes within the Condor Road Areas or located in watersheds with a high risk of cumulative watershed effects. Site-specific analysis and, where warranted, laboratory testing for the presence of NOA should be conducted as soon as feasible. We recommend use of routes which may intersect potential naturally occurring asbestos be minimized or restricted until the presence or absence of NOA is confirmed.

EPA is aware of the decision by the Pacific Southwest Region of the Forest Service to limit the scope of the travel management planning process to prohibition of motorized vehicle travel off designated routes, addition of unauthorized roads and trails to the National Forest Transportation System (NFTS) so they may be designated for motor vehicle use, and changes in vehicle class and season of use. The rationale for the limited scope of this process is schedule constraints and limited funding and resources.

We acknowledge the constraints of funding and resources; nevertheless, we had hoped the Forest Service would take this opportunity to review and rationalize the NFTS, pursuant to Travel Management Rule direction to identify the minimum road system needed (16 CFR Part 212 Subpart A); to address known road-related resource impairments and use conflicts of both the existing NFTS and unauthorized user-created system; and to align the transportation system with maintenance and enforcement capabilities. We note a similar request has been made by Senator Feinstein (see attached letter).

Route designations are only part of what is needed to reduce the ongoing adverse impacts to water quality and other resources from the NFTS. We continue to believe a more holistic approach to travel management planning, whereby route designations are guided by travel analysis, known locations of resource impairment, and in/or determination of the minimum road system needed, would better serve the long-term interests of the public, Forest Service, and National Forest resources.

We appreciate the opportunity to review this DEIS. When the DEIS is released for public review, please send one hard copy and one CD-ROM to the address above (mail code: CED-2). If you have any questions, please contact me at (415) 972-3521, or contact Laura Fujii, the lead reviewer for this project. Laura can be reached at (415) 972-3852 or [fujii.laura@epa.gov](mailto:fujii.laura@epa.gov).

Sincerely,



Kathleen M. Gordon, Manager  
Environmental Review Office  
Communities and Ecosystems Division

# Motorized Travel Management Final Environmental Impact Statement Sequoia National Forest

EPA DETAILED DEIS COMMENTS SEQUOIA NATIONAL FOREST MOTORIZED TRAVEL  
MANAGEMENT, KERN & TULARE COUNTIES, CAL. APRIL 17, 2005

## Scope of the Alternatives Analysis

*Provide information on the minimum Forest road system needed and how this information was used to formulate the alternatives.* The scope of this action includes prohibition of motorized vehicle travel off designated routes, the addition of unauthorized user-created roads and trails to the National Forest Transportation System (NFTS) so they may be designated for motor vehicle use, and changes to vehicle class and season of use. The draft environmental impact statement (DEIS) also states that unauthorized routes not included in this proposal are not precluded from future consideration for addition to the NFTS and inclusion on the Motor Vehicle Use Map (MVUM)(p. 5). We believe a holistic approach to travel management planning, whereby route designations are guided by travel analysis, known locations of resource impairment, and prior determination of the minimum road system needed, would best serve the long-term interests of the public, Forest Service, and National Forest resources.

### *Recommendations.*

The final environmental impact statement (FEIS) should describe the information that was used to formulate the motorized travel management alternatives, and the relationship of that information to the requirement to identify the minimum road system needed for safe and efficient travel and administration of National Forest System lands (36 CFR Part 212 Subpart A, Section 212.5(b)). The FEIS should describe how the minimum road system needed will be identified pursuant to the requirements of the Travel Management Rule (36 CFR Part 212 Subpart A).

The FEIS should describe the factors that would be used in the consideration of future additions of unauthorized routes. We recommend that such factors include travel analysis and identification of the minimum road system needed.

*Expand the scope of the action to include current NFTS roads and trails with known impacts.* The current estimate of annual deferred road and trail maintenance is approximately \$100,517,090.00 for the Sequoia National Forest (Forest) (p. 3-45). EPA is concerned with the Forest Service's ability to adequately address known road and trail-related resource impairments, given the acknowledged lack of maintenance funds and this proposal to add to the NFTS additional miles of roads and trails known to contribute to soil and water resource impairment.

### *Recommendation:*

We recommend the Forest expand the scope of this action to consider, for seasonal or permanent closure to public motorized use, current NFTS roads and trails with known resource impacts.

#### **Water Resource Concerns**

*Avoid designation of routes in watersheds with high risk of cumulative watershed effects.* All of the action alternatives would add routes to the NPTS for motorized use in watersheds which are already over the cumulative watershed effects threshold or have an extreme, high, or moderate potential for cumulative watershed effects (Table M-4<sup>1</sup>, pps. 235-237). Furthermore, thirty-two routes that would be added to the NPTS have been identified as existing and potential sources for sediment delivery (p. 221). The action alternatives add existing unauthorized routes that have 2 to 9 stream crossings in need of water quality protection (Table M-4, Appendix C). EPA is concerned with the addition of existing, unauthorized roads and trails known to have soil and water resource impairment, especially in watersheds that are already at risk of cumulative watershed effects.

#### **Recommendations:**

Avoid designation of routes for motorized use in watersheds with a high risk of cumulative watershed effects, and routes with identified resource impairment.

If the preferred alternative includes the addition of unauthorized routes in watersheds at moderate to extreme risk of cumulative watershed effects, we recommend that restoration or abatement of impaired unauthorized routes in the at-risk watersheds be included as mitigation.

*Implement proven, protective seasonal closures. Provide information on wet weather conditions and dates, season of use implementation criteria, and environmental impacts of wet weather use.* The action alternatives would establish a season of use for routes that would be added to the NPTS. The period of use and the number of miles subject to seasonal use differ significantly between alternatives.<sup>2</sup> The DEIS does not describe the criteria used to trigger season of use implementation, nor whether other existing NPTS roads and trails would be subject to the same use periods, nor does it describe winter or wet weather conditions or whether wet weather use of existing NPTS and unauthorized roads and trails results in significant environmental impacts.

#### **Recommendations:**

EPA recommends implementation of a proven, protective season of use. We advocate the expanded use of seasonal closures as a means to avoid and minimize adverse resource effects of roads, trails, and motorized use. The FEIS should clearly state whether the established season of use would be implemented on other NPTS roads and trails. The FEIS should provide information on winter and wet weather conditions and, if present, any significant environmental impacts caused by current wet weather road and trail use.

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<sup>1</sup> Alternative 1 Proposed Action: three season of use periods with a range of 5/1 to 11/15 for 48.8 miles, p. 37; Alternative 2 Increase in Motorized Recreation Experience and Diversity: 4/15 to 12/5 for 211.9 miles, p. 41; Alternative 3 Minimize Impacts to Natural Resources and Roadless Areas: 4/15 to 12/31 for 84.3 miles, p. 30.

#### **Routes within Condor Roost Areas**

***Close roads and trails within one-half mile of condor roost sites.*** Alternative 1 Proposed Action would continue to allow use of 13.7 miles of routes within the Condor Roost Areas, approximately 50% of the Condor Roost polygon and 7% of condor essential habitat (pps. 31, 461). Other action alternatives would allow use of 13.7 miles (Alternative 3, p. 43) or 1.7 miles (Alternative 4, p. 51).

#### ***Recommendation:***

We recommend closure of roads and trails within one-half mile of condor roost sites pursuant to the principles of the 1990 Mediated Settlement Agreement between the Forest Service and concerned citizens, which provides direction for the management of the California condor prior to the Condor Recovery Plan (pps. 423 to 452), and U.S. Fish and Wildlife Service direction, if applicable.

#### **Naturally Occurring Asbestos**

***Conduct site-specific analysis and laboratory testing. Minimize unauthorized use until confirmation of presence or absence of NOA.*** We commend the Forest for choosing not to add existing unauthorized routes to the NPTS that may intersect potential naturally occurring asbestos (NOA) terrain. However, we are concerned with the continued use of up to 55 (44 current NPTS, 9 unauthorized) routes that may intersect potential NOA (p. 164). Disturbance of rocks and soils that contain NOA can result in the release of asbestos fibers to the air and exposure to the public. Asbestos is a known human carcinogen and represents a potential human health risk for those exposed while using roads or trails where it occurs.

#### ***Recommendation:***

Site-specific analysis and, where warranted, laboratory testing for the presence of NOA should be conducted as soon as feasible, as described in the DEIS (p. 156). We recommend minimal or restricted use of routes which may intersect potential NOA until the presence or absence of NOA is confirmed.

#### **Sensitive Habitats**

***Describe and implement mitigation measures specific to protection of fens and sensitive habitat adjacent to designated routes.*** The project area contains five field-confirmed fens and ten highly likely fens (p. 81). Of these, 3 fens (144 acres) are within 100 feet of existing unauthorized routes proposed for addition to the NPTS. While Appendix C describes Best Management Practices for maintenance of hydrologic function where routes are adjacent to fens, it does not provide specific measures to protect fens or other sensitive habitat from direct encroachment or other potential impacts resulting from easy access.

#### ***Recommendation:***

Describe and implement mitigation measures specific to the protection of fens and sensitive habitat adjacent to designated routes. For instance, include educational material with the Motor Vehicle Use Map on the ecological importance and

sensitivity of these habitats, and prohibit off-road parking and camping in undesignated areas.

*Select a preferred alternative which avoids and minimizes adverse effects to threatened, endangered, and sensitive species and their habitat.* There are 91 rare plant occurrences (Sensitive Species, Watch List Species) within 100 feet of existing motorized roads proposed for addition to the NFTS. The action alternatives would also include between 182 and 185 miles of motorized routes in Riparian Conservation Areas (p. 437).

***Recommendation:***

Select a preferred alternative which avoids and minimizes adverse effects to threatened, endangered, and sensitive species and their habitat.

**Monitoring and Enforcement**

*Develop, describe, and implement a Travel Management Plan Monitoring and Enforcement Strategy.* It is important that wildlife protection, vegetation management, and other natural goals be achieved in addition to the potential adverse effects of the Motorized Travel Management Plan. Effective enforcement is especially critical given the proposal to designate trails with existing resource concerns requiring notification prior to use (p. 19). We believe the public and decision makers would benefit if a strategy is developed that includes specific information on funding, monitoring and enforcement criteria, thresholds, and priorities.

***Recommendations:***

We recommend development of a detailed Travel Management Plan Monitoring and Enforcement Strategy. Such a Strategy should include specific information on the monitoring and enforcement program, priorities, focus areas (e.g., season, specific locations), personnel needs, costs, and funding sources. We recommend the FEIS demonstrate that the proposed monitoring and enforcement strategy is adequate to assure that motorized vehicle use will not violate (a) restrictions or exacerbate already identified road-related resource problems. We recommend the Monitoring and Enforcement Strategy be periodically updated (e.g., annually or biennially).

**Climate Change**

*Address climate change and its potential effects on proposed route designations.* A number of studies specific to California have indicated the potential for significant environmental impacts as a result of changing temperatures and precipitation.<sup>2</sup> Climate change effects and the need to adapt to climate change are emerging issues which should be considered in this action. According to the Government Accountability Office (GAO) report entitled, "Climate Change: Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources" (August 2007), federal land and water resources are vulnerable to a wide range of effects from climate change, some of which

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<sup>2</sup> For example: Our Changing Climate: Assessing the Risks to California, A Summary Report from the California Climate Change Center, July 2006; Climate Change and California Water Resources, Brandy, Aft & Co. Committee on Water Policy & Wildlife, California State Assembly, March 2007.

are already occurring. Roads and their use contribute to species stress through habitat fragmentation, increased disturbance, introduction of competing invasive species, and increased fire risk; which may further exacerbate species' ability to adapt to the changing climate.

***Recommendations:***

The FEIS should include a discussion of climate change and its potential effects on the Forest as they relate to the route designation decision and final National Forest transportation system. Of specific interest are potential cumulative effects of climate change and the NFTS on the connectivity of wildlife and threatened and endangered species habitat, air quality, water quality, fire management, invasive species management, and road maintenance.

We recommend the discussion include a short summary of applicable climate change studies, including their findings on potential environmental effects and their recommendations for climate change adaptation and mitigation measures.

**Full Disclosure and Procedural Comments**

***Commit to route-specific environmental analysis for user-created route additions.*** (1) Since National Forest System lands are used in part by motor vehicle travel, has resulted in unplanned motorized trails unauthorized for motorized use. These trails were generally developed without environmental analysis or public involvement and may be poorly located and cause unacceptable impacts (p. 4). EPA is concerned with the addition of unauthorized, user-created trails to the NFTS which may not have undergone site-specific environmental analysis or public involvement.

***Recommendation:***

The FEIS should state how the Forest will ensure specific user-created routes are adequately evaluated pursuant to NEPA requirements. Where prior site-specific environmental analysis has not occurred, we recommend the FEIS specify the manner and criteria by which specific user-created routes would be analyzed prior to the Forest's addition to the NFTS or its designation for public motorized use.

Motorized Travel Management Final Environmental Impact Statement  
Sequoia National Forest



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March 25, 2009

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**Subject: Draft Environmental Impact Statement (DEIS)  
Sequoia National Forest Motorized Travel Management Project**

Dear Mr. Sanders:

The California Department of Fish and Game has reviewed the information prepared by the United States Forest Service, Sequoia National Forest (Forest) for the above Travel Management Project (Project). Approval of the Project would allow the Forest to regulate unmanaged cross-country motor vehicle travel by the public, provide diverse motor vehicle access to dispersed recreation opportunities, and address resource, right of way, and lack of use concerns on approximately 502 miles of existing roads and trails currently open to public motor vehicle use and approximately 582 miles of existing unauthorized routes covering 530,988 acres. The preferred action alternative (Alternative 3) was designed with the goal of maximizing motorized recreational opportunities and includes the following:

- Prohibits cross-country motorized travel;
- Adds 34.8 miles of unauthorized routes as trails;
- Adds 5.0 miles of unauthorized routes as roads;
- Changes vehicle class and/or season of use on 224.0 miles of National Forest Transportation System (NFTS) roads and trails;
- Makes 25.4 miles of NFTS roads and trails unavailable for public motor vehicle use; and

*Conserving California's Wildlife Since 1870*

Chris Sanders, Team Leader

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- Allows public motor vehicle use on 13.7 miles of routes and made 4.1 miles of NFTS routes unavailable to public motor vehicle use within condor roost areas.

The Department believes the Project as proposed, including the preferred Alternative 3, will result in significant impacts to wildlife resources. Our specific comments follow:

**Great Gray Owl:** The DEIS states that great gray owl (*Strix nebulosa*) (GGO) do not occur within the Project area and will not be further discussed. There is nothing in the DEIS indicating that GGOs have been surveyed for on Forest land on which to base the determination that they do not occur there. According to our GGO database and the California Natural Diversity Database (CNDDDB), there are four GGO sightings in the vicinity of the Project area. One sighting is within the Project area near Dry Meadow and the intersection of 23S16 and 24S83. The other three sightings, including a nest site, are located less than 10 miles from the northern portion of the Project area, one near Camp Nelson and two near Troy Meadow. Because the GGO is known to occur within the Project area and its immediate vicinity and because the GGO is listed as endangered under the California Endangered Species Act (CESA) and known to be very limited in population, the Department recommends that the Forest include the GGO in its biological resources evaluation and include appropriate mitigation measures to reduce potential Project-related impacts (similar to those described in the DEIS for California spotted owl). Our suggested mitigation measures follow:

- Do not add unauthorized routes to the NFTS within ¼ mile of meadows or meadow complexes totaling 10 acres or more.
- Prohibit use of existing road and trails within ¼ mile of meadows or meadow complexes totaling 10 acres or more until a complete two year GGO protocol survey has been completed using the methodology described by Beck and Winter (2000), or;
- Establish a Limited Operating Period between March 1 through September 30 on all routes, roads, and trails within ¼ mile of meadow edges or from known nest sites. The Department has determined that this time period encompasses the initiation or nesting through the time that young disperse from nest stands.

**California Condor:** Pages 11, 21, and 458 of the DEIS state that the Sequoia National Forest Land and Resource Management Plan (LMRP, USDA 1988) and the Mediated Settlement Agreement (MSA, USDA 1990) provide direction for the management of the California condor. Both the LMRP and the MSA identify several historic use areas that

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are to be managed for the benefit and protection of the condor and direct the Forest to manage these areas consistent with the California Condor Recovery Plan (USDI 1996), which among other needs specified that mortality factors in the natural environment should be minimized and habitat maintained for condor recovery. The MSA called for designating the condor historic use sites as Wildlife Habitat Management Areas and the closure of all roads (except those currently paved) and trails within 1/2 mile of condor roost sites, yet all Project alternatives allow for the continued use of routes, roads, and trails. Because the purpose of the MSA is to maintain and protect historic roost sites for future occupancy, the Department recommends that the MSA be adhered to and the Forest close all currently authorized and unauthorized unpaved roads and trails within 1/2 mile of known historic condor roost sites, except where necessary for existing access to private property whereby such access should be restricted to use by private property owners only. The Department does not concur that the continued use of the existing or adding unauthorized routes to the roads and trails system within California condor habitat can be remediated through the use of a non-significant Forest Plan amendment. Because the California condor is an endangered species under both the Federal Endangered Species Act and CESA, is also a State fully protected species, and most importantly is a species that exists only in critically low numbers, further protection is warranted.

Page 32 of the DEIS, number 1 Under Travel Management Within Condor Roost Areas, refers to routes listed in Table 2-1K, when it appears the routes are listed in Table 2-1L. The incorrect table references appear to occur on page 43 as well. The Forest should check these pages for accuracy.

**Rare Plants:** Page 75 of the DEIS provides a list of Forest sensitive and watch list plant species that are known to or potentially occur within the Project area. The CNRDB shows Kern Canyon clarkia (*Clarkia xanthana* ssp. *parviflora*) and Onyx Peak bedstraw (*Gallium angustifolium* ssp. *oryzense*) to occur within the Project area, but they were not included on this list. While Kern Canyon clarkia is on the California Native Plant Society watch list, the Onyx Peak bedstraw is classified as rare, threatened, or endangered in California and elsewhere and should be evaluated for inclusion in plant surveys (if they have not already been) and provided protection measures where necessary.

Table B-2, pages 79 and 80 of the DEIS lists plant species included in the analysis because of known occurrences within the Project area. Four of the species listed in Table B-2, Mojave laurel (*Desmodium mohavensis*), striped adobe-lily (*Fritillaria striata*), Twisselmann's nemadadus (*Nemadadus twisselmannii*), and Bakerfield cactus (*Opuntia basilaris* var. *breleasei*) are State listed under CESA. As such, the Department recommends the Forest impose vehicle restrictions during the growing

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seasons (which should be perpetual for the perennial Bakersfield cactus) for each plant on all routes, roads, and trails known to occur within 100 feet of a route, road, or trail to protect them from direct (stem breaking, crushing, etc.) and indirect (alteration of habitat through soil disturbance, compaction, hydrologic function, and introduction of invasive plant species) impacts.

#### General Comments

- Implementation of Alternative 3 would have the second highest impacts on botanical, cultural, hydrologic/soil, and visual resources, spread of noxious weeds, and forest/riparian/cultural biota, yet this is the alternative the Forest has chosen as the preferred alternative even though implementation of Alternatives 4 and 5, and even Alternative 1, would have less impact on these resources. The Department suggests that the forest implement an Alternative or a mix of Alternatives that would provide greater protection for natural resources.
- It is difficult to assess appropriate trails, roads, and routes to add to the NFTS or to eliminate from the NFTS based on the written descriptions. It would be helpful to have the evaluated issues depicted on maps, such as high erosion areas, riparian conservation areas and crossing locations, fisher conservation areas, spotted owl and northern goshawk Protected Activity Centers (PACs), Old Forest Emphasis Areas, etc.
- Page 3 of the DEIS states, "Unmanaged OHV use has resulted in unplanned roads and trails, erosion, watershed and habitat degradation, and impacts to cultural resource sites. Compaction and erosion are the primary effects of OHV use on soils. Riparian areas and aquatic-dependent species are particularly vulnerable to damage from OHV use..." It appears as though damage has already occurred, but it does not appear that the DEIS includes mitigation measures to rehabilitate, restore, or conserve already degraded environmental resources, although Appendix B includes Best Management Practices to lessen impacts from use of unauthorized trails and roads that are added to the NFTS. Appendix C includes mitigation measures that need to be completed prior to allowing public access to unauthorized routes proposed to be added to the NFTS and mentions following a standard road maintenance plan, but the maintenance plan is not included for review. Appendix C also provides a monitoring plan, but it only seems to apply to cultural resources and noxious weed issues and existing roads and trails will only be monitored if funding is available. Page 16 states the following regarding the existing trail and road system: "The system is in a deteriorating

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condition due to increased use and the continued deferral of maintenance and capital improvement needs." It is estimated that the current deferred maintenance of trails alone is almost \$8 million. It does not appear that monitoring and maintaining the existing roads and trail system is occurring to reduce impacts to environmental resources and there is no discussion regarding guaranteed funding to provide appropriate maintenance on the proposed trails and roads immediately or in the near future.

- Table 2-3J and 2-3K of the DEIS show routes with established seasons of use for the preferred alternative (Alternative 3). The Department recommends that routes, roads, and trails that may impact known salamander habitats, such as 23S42, 23S44, 23S45, 26S16, U01020, U01120, U01130, U01132, U01150, and U01167 should also be added to the list in Table 2-3K to protect them and their eggs during the wet season.
- To ensure that California spotted owl PACs and Home Range Core Areas remain available for successful foraging and reproduction, the Department recommends that all existing and proposed routes, roads, or trails within ¼ mile of PACs be prohibited from use during the nesting season as defined in the Forest Plan Management Standards and Guidelines as March 1 through August 31. All proposed alternatives should include an additional established season of use table for September through December 31.
- To ensure that northern goshawk PACs remain available for successful foraging and reproduction, the Department recommends that all existing and proposed routes, roads, and trails within ¼ mile of PACs be prohibited from use during the nesting season as defined in the Forest Plan Management Standards and Guidelines as February 15 through September 15. All proposed alternatives should include an additional established season of use table for September 16 through December 31.
- Page 165 of the DEIS discusses mass-wasting geo-hazards for Alternatives 1, 3, 4, and 5. The first paragraph states that Alternative 1 has four unauthorized routes with inactive geo-hazards, but then the next sentence contradicts that by stating that Alternatives 4 and 5 have no unauthorized routes with active or inactive geo-hazards. The language should be changed to reflect actual conditions and to ensure that the numbers in Table G-9 correspond to those in the written text.
- Mass-wasting geo-hazards can have direct effects on plant and aquatic species by burying or detaching plants and increasing sedimentation potential

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to waterways. The routes in each Alternative with active and inactive mass-wasting geo-hazards should be evaluated to determine if use of the routes has the potential to exacerbate the problem, such as those on friable soils or steep grades. If so, the Department suggest the Forest remove those routes, roads, and trails from use or at least close those portions of the routes, roads, or trails during the wet period (November through April) when soils are saturated and more likely to fail.

- Table H-39 (page 222) of the DEIS lists the routes that need stream crossings brought up to forest standards and guidelines. It is not clear if those listed are unauthorized routes only. Table T5 on page 22 of Appendix B lists unauthorized routes having stream crossings in need of repair or maintenance to bring them up to forest standards and guidelines. These two tables do not match and it is not clear if they should. The Forest should prohibit use of all stream crossings until they meet forest standards and guidelines.
- The preferred alternative (Alternative 3) has the second lowest ranking for cumulative watershed effects caused by use of existing and newly added unauthorized routes to the NFTS in hydrologically sensitive areas, indicating Alternative 3 is the second most harmful to watershed resources and therefore aquatic resources, yet this was chosen by the Forest as the preferred alternative even though Alternatives 4 and 5 provided much greater protection for watershed resources. The Department recommends that the Forest compromise on the benefits to recreation in favor of conserving or enhancing watershed biological resources.
- Pages 251 through 257 of the DEIS indicate that weed occurrences are primarily found along existing travel routes and vehicle use as well as road maintenance activities increase the probability of spreading weeds, which results in an increase in competition with native plants, loss of biodiversity, change in food base for wildlife, change in soil moisture patterns, decrease in range or forest productivity, and alterations to normal ecosystem function. The DEIS also states that the need for treatment for suppression available resources for treatment. The preferred alternative (Alternative 3) has the highest potential for the introduction of new weed species and the spread of existing infestations to uninfested areas, including areas within sensitive riparian habitat. The Department suggests that the Forest design the Project with the least amount of potential to increase weed infestations since the ability to eliminate existing infestations, never mind new occurrences, is not available.

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- Page 234 of the DEIS: The Department questions whether the preferred alternative (Alternative 3) is the appropriate alternative since it has the greatest impacts on the analyzed resources, would create the greatest conflict with non-motorized recreation experiences, and would have the greatest impact on foothill communities and urban areas since a greater number of roads and trails open to all vehicles are designated in Wildland Urban Interfaces than in any of the other alternatives.
- Deer – The Department suggests that the Forest prohibit use of routes, trails, and roads within deer winter range and key areas for an appropriate period of time during deer use to increase habitat effectiveness, deer abundance and distribution, and reproductive success.
- Late-Successional Habitat (LSH) – Existing and additional routes, roads, and trails would impact from 45 percent to 50 percent of existing LSH, depending on alternative. Impacts include fragmentation, disturbances from noise, and removal of potentially vital LSH elements such as snags, understory vegetation, down logged, large trees, etc., for maintenance activities and human protection along routes, roads, and trails. The Plute fire affected 18,063 acres of LSH, contributing to the 23 percent of LSH impacted by past and future projects. This means that species dependent on LSH (i.e., American marten, pacific fisher, spotted owl, northern goshawk, etc.) have approximately 25 percent of LSH to rely upon for food, shelter, and reproduction. The Department considers this to be a significant impact and the Forest should analyze its Project to reduce these impacts by the greatest amount feasible.
- Pacific Fisher – Routes, roads, and trails should be prohibited from use in the fisher conservation areas, especially in areas with a 40 percent or greater chance of fisher den detections or where road densities are at values of 2.0 miles per square mile or greater (found to be the greatest negative cumulative effect on fisher habitat) to prevent impacts from human disturbances, fragmentation, and removal of vegetation that may reduce their prey base.
- Page 138 of the DEIS states that none of the alternatives propose routes for addition to the NFTS. However, because Critical Aquatic Refuges (CARs) are established for known locations of threatened, endangered, or sensitive species, highly vulnerable populations of native animal species, or localized populations of rare native aquatic- or riparian-dependent animal species, the Department suggests that existing roads and trails that intersect CARs be

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closed to all motorized use or that the Forest at least impose limited operation periods during breeding, growing, or active times (i.e., salamanders) depending on potentially affected species.

- Page 466, trail U01148, which is proposed for addition in Alternative 1 and the preferred alternative (Alternative 3), should be prohibited from use for the protection of bats using Greenhorn Cave or the cave entrance should be barred to exclude humans yet continue to allow use by R5 sensitive bats.

The Department hopes that the Forest will consider our above suggestions to improve protection to the various resources supported within the Project area. If you have any questions about the comments please contact Lisa Gymer, Environmental Scientist, at (559) 243-4014, extension 238, or lgymer@dfg.ca.gov.

Sincerely,



Jeffrey R. Single, Ph.D.  
Regional Manager

cc: Day Grube  
United States Fish and  
Wildlife Service  
2800 Cottage Way Rm-W26C5  
Sacramento, California 95825

cc: Department of Fish and Game  
Kevin O'Connor  
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Motorized Travel Management Final Environmental Impact Statement  
Sequoia National Forest

PLANNING DEPARTMENT

TED JAMES, AICP, Director

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RESOURCE MANAGEMENT AGENCY

DAVID PRICE III, RMA DIRECTOR  
Community & Economic Development Department  
Engineering & Survey Services Department  
Environmental Health Services Department  
Planning Department  
Roads Department

(Signature of David Price)

March 30, 2005

Chris Sanders  
Sequoia National Forest  
1829 So. Newcomb Street  
Porterville, CA 93257

RE: Sequoia National Forest Motorized Travel Management Draft Environmental Impact Statement

Dear Mr. Sanders:

This correspondence is submitted in response to the request for review and comment on the Draft Environmental Impact Statement (DEIS) for proposed changes to the National Forest Transportation System (NFTS) in the Kern River and Western Divide Range Districts of the Sequoia National Forest. The Travel Management project area covers 350,000 acres and is made up of four sections: the Greenhorn Mountains Area, Buckenridge Mountain Area, Piute Mountains Area and Los Angeles Area, all adjacent and within Kern County. Since 2002, the Kern County Board of Supervisors has been on record with the USFS Forest Service as requesting coordinating and participating agency status on all matters that affect lands within Kern County and businesses that rely on public lands with the Planning Department designated as the reviewing department. This review and comment is also consistent with the Final Travel Management Rule (November 9, 2005) (36 CFR Part 295) section 212.53 which requires coordination with appropriate Federal, State, county and other local governmental entities when designating National Forest System roads and trails.

Section 3.14 Social and Economic Resources of the DEIS states that "Kings, San Luis Obispo and Fresno counties were among the top five California counties for visits per capita to the SGNF, however, rates of visitation in these counties were at least 50 percent less than the rate of visitation for residents of Kern and Tulare counties. While important relationships exist in these counties and other communities adjacent to the SGNF, Kern and Tulare counties are the focus of the description of the affected environment and are used to model effects." This supports the importance of recreational uses of the National Forest to the economy of Kern County. Motorized access to various areas of the Forest is an important part of that use.

The DEIS includes Alternative 1 Proposed Action that includes changes to the existing NFTS and additions to the NFTS for a total of 122.2 miles. The response to comments from recreational users to increase access and improved recreation opportunities. Alternative 3, Increase in Motorcycle Recreation Experience and Diversity was designed and increases the total to 123.4 miles. While not the preferred alternative there is insufficient unclear or arbitrary determinations or guidance in the document that should be corrected. These impacts are summarized in the Summary (p-v) the Summary of Environmental Consequences (Table 8-5) provides a numerical comparison of Alternatives. Each resource area is ranked through a score of 1 to 5 for impacts. The rankings of Alternative 1 and Alternative 3 which reflect descriptions in the chapter place Alternative 3 as slightly more impactful than Alternative 1. For the analysis in each chapter is supported by site specific information and other on-site statements, such as the following: "... Alternatives 1 and 3 are similar, though alternative 3, which is geared towards motorized recreation and provides more route mileage than alternative 1, would have a somewhat greater impact on the species considered in this analysis." (pg. 468). More miles of designated routes does not necessarily mean that impacts increase.

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A DEIS is required to be site specific and not rely on generalized, arbitrary statements without supportive facts. A full analysis of the specific routes and characteristics should be conducted and evaluated appropriately.

As required by NEPA the Forest Service conducted public scoping, workshops and received over 3000 comments. The CEQA/NEPA regulations requires that a public hearing be conducted when there is substantial environmental controversy concerning the proposal and substantial interest in holding a public hearing (43 CFR 1500.5 (c)). Supervisor McQuestion, whose First District includes the Sequoia National Forest, has requested that the comment period be extended by 45 days to provide time for a county sponsored public workshop in response to constituent requests. While the timeline for completion of the DEIS is April 2009, the 45 day extension of time would be appropriate to provide for thoughtful and constructive public comment that will result in a fully informed decision. Deadlines, while important, should not be maintained at the expense of enhanced public participation.

It is requested that the Planning Department be provided with all public notices, reports, maps and materials related to this action. Please send all materials to the attention of Lorcel Oviatt, Division Chief, at the letterhead address. The Kern County Planning Department appreciates the opportunity to work with the Sequoia National Forest on enhancing recreational opportunities including motorized travel.

Sincerely,  
  
Lorcel T. Oviatt, AICP  
Division Chief

cc: Chairman McQuestion  
Ted James, Planning Director  
Tina Terrell - Forest Supervisor  
County Counsel  
Blue Ribbon Coalition  
Stewards of the Sequoia

Motorized Travel Management Final Environmental Impact Statement  
Sequoia National Forest

PLANNING DEPARTMENT

TED JAMES, AICP, Director

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RESOURCE MANAGEMENT AGENCY

DAVID PRICE II, RMA DIRECTOR  
Community & Economic Development Department  
Engineering & Survey Services Department  
Environmental Health Services Department  
Planning Department  
Roads Department

April 20, 2009

FAX: (559) 781-4744

Tina Terrell, Forest Supervisor  
Sequoia National Forest  
1839 So. Newcomb Street  
Porterville, CA 93257

RE: Additional Public Meetings (April 29 and April 30)  
Management of Lake Isabella  
Sequoia National Forest Motorized Travel Management Draft Environmental Impact Statement

Dear Ms. Terrell,

In our common letter of March 30, 2009, the Kern County Planning Department requested a 25-day extension of time to allow for the possibility for a county sponsored public workshop in response to constituent requests. While the 25-day extension of time is appreciated, it did not provide the necessary time to conduct another public workshop.

We appreciate the two informational workshops on April 29 and April 30 that have been scheduled on the Lake Isabella portion of the plan. However, the decision to not allow public comment is unfortunate and seems counterproductive to assuring the community is fully involved in the decision-making process.

The recreational and wildlife benefits of Lake Isabella and the Sequoia National Forest are important to all the citizens of Kern County. Expanded public participation can result in better planning and community ownership of the plan. We encourage you to reconsider your decision and allow public comment at the two workshops.

The Kern County Planning Department appreciates the opportunity to work with the Sequoia National Forest on enhancing recreational opportunities including motorized travel.

Sincerely,  
  
Lorinda H. Owen, AICP  
Division Chief

cc: Chairman Mr. Quisenberry  
Ted James, Planning Director  
Tina Terrell - Forest Supervisor  
County Council  
Blue Ribbon Committee  
Stewards of the Sequoia

Motorized Travel Management Final Environmental Impact Statement  
Sequoia National Forest



**Kernville Chamber of Commerce**

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March 24, 2003

Chris Sanders, Team Leader  
Travel Management Project  
1839 South Newcomb Street  
Fowlerville, CA 93257

Re: Travel Management DEIS

To Whom It May Concern:

The Kernville Chamber of Commerce, its officers, directors and employees have been keeping all the motorized forest trails, routes and areas open to the public for all forms of recreation.

Undoubtedly, the Kern River Valley is economically dependent upon tourism. It remains our major industry. Residents don't come to the valley to view from a distance, Lake Isabella, Kern River, or the hundreds of multiple use trails. They come here with their families to experience off roading, mountain biking, handicrafts, skiing, hunting, and camping by the lake along with fishing, boating and swimming. Many seek isolated, quiet places away from the "rat race" of big cities. They use the trails to see and experience that which one cannot will see in the asphalt of a busy highway. If access to these places is not easy or is not allowed via every form of recreation, they will vacation elsewhere.

The economy of our nation is currently had enough without adding to the devastation. Many of these families cannot afford to take expensive vacations but they can afford to go camping for a week or two alongside the lake or the river or trail riding in the mountains via 4 X 4, ATV or dirt bikes. They enjoy the area because of the world class multiple use trail system and easy access to their destination.

Permanent residents have the right to the enjoyment of these areas, also. For many, that is the reason they are here and if they own their own business they need the tourists. If there are no tourists, businesses close. If businesses close, people relocate to other areas and the towns slowly dwindle.

The Travel Management plan was proposed by Sequoia National Forest restrict motorized use, motorized access, motorized vehicles, and motorized trail funding. We would like to point out that people who enjoy motorized recreation spend millions of dollars in our community each year.

The Multiple Use Act of 1964 mandates that Forests "shall be allocated and managed in a manner that will best meet the needs of the American people". To meet the needs of the American people, do not close any of the trails and routes in the Sequoia Forest to multiple use. We support the comments submitted by DOR/A as well as Stewards of the Sequoia and we demand the forest service continue to allow all traditional vehicular access to the lakeside at all water levels surrounding the lake.

Respectfully,

Cheryl Borthick  
President  
Kernville Chamber of Commerce

CSWj

Co. Congressman Kevin McCarthy, Senator Roy Ashburn, Assemblymember Jean Fuller, Kern County Board of Supervisors,  
Chris Horgan, Stewards of the Sequoia

The following individuals  
provided written comment on the  
Draft Environmental Impact  
Statement (this list does not  
include those who submitted form  
letters):

**INDIVIDUALS**

PEARL ADAM  
MIKE ADAMS  
RALPH ADAMS  
JON AICHELE  
GEORGE & FRANCES ALDERSON  
LAURA M ALFORD  
JAMES ALLEN  
ROGER ALMKLOV  
DAVE BARR  
CHRISSIE BEAVIS  
JOHN BECKER  
PAUL AND JUDY BECKET  
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MARILYN BENOIT  
RON BENOIT  
RON & JUDY BENOIT  
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MARK GAY MAN  
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SHAWN GILBERT  
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BOB AND BETTY NEWMAN  
PHILIP, LYNELL, MATT, &  
HOLLY NEWMARCH  
EVA & GORDAN NIPP  
LARRY OKUMOTO  
NEIL OLSEN  
CARL ORTON  
BILL OWEN

MABEL OWN  
PAT PAPASERGIA  
VELQUITA PAYNE  
JOHN PERRY  
EDWARD POUNDS  
MICHAEL PRICE  
JOSH PRUITT  
IAN REED  
JACK ROBBINS  
ART ROBINSON  
CHARLES AND NANCY ROBINSON  
DAVID LAUGHING HORSE ROBINSON  
DOUG ROBINSON  
JAMES & LIZ ROBINSON  
KENNETH ROE  
JAMIE ROMANO  
RUDY ROSEN  
ED ROYCE  
EDWIN B ROYCE  
MATT RULLA  
CAROL RUTLEDGE  
JOE AND JADE SACKETT  
DION SALFEN  
SHERYL SAWATSKY  
RON SCHILLER  
LOUIS SCHWARTZ  
SANDIE SCHWARTZ  
MEREDITH SHAIMES  
JESSICA SHAW  
RICHARD SHIREY  
STEVE SIMPSON  
DENNIS SIZEMORE  
JIM SMITH  
JODY SMITH  
LONNIE SMITH  
PATTY SORENSEN  
HAROLD SPRAYBERRY  
JULIE & DAVID SPRAYBERRY  
JOAN STAIR  
THERESA STAMP  
GREGORY AND TAMARA STARCZAK  
HAL STECKBAUER  
MARTA STERN  
ERIK STORSTEEN  
RYAN TAYLOR  
ROSS TERMIN  
GEORGETTE THEOTIG

LEON THOMAS  
BONNIE THOMPSON  
SPENCER & DEBRA  
THOMPSON  
RAY THURM  
JILL THURMAN  
RAY THURN  
ARLENE TIBBITTS  
JOHN TIMMER  
JOC TORRES  
DANIEL TRAN  
GARY & PATTY TUGGLE  
GARY J ULRICH  
ARTHUR UNGER  
LORRAINE UNGER  
GARY VAN ARSDALE  
SHANNON VON GREENTHNER  
KATHI & CHRIS VON  
GUENTHNER  
TYSON VON GUENTHNER  
JUDY AND BOB WALKER  
MARILYN WALTER  
MARILYN WALTER  
TROY AND MARETH  
WATTERS  
GAIL WECHSLER  
IRA WEINY  
MAX WENZEL  
MORGAN C WHITELEY  
DAVID WHITTAKER  
PETER WIECHERS  
JOSEPH & DIANE M  
WILLIAMS  
KARENE WILLIAMS  
WINIFRED WILLIAMS  
JIM WILSON  
JOHN WINKLER  
NORMAN WOLFF  
MIKE WUBBELS  
CLAY YOUREE  
COLBY ZETHRAEUS  
RICK ZWART

## Interested/Affected Organizations

- BAKERSFIELD TRAILBLAZERS
- BLUE RIBBON COALITION
- CALIFORNIA ASSOCIATION OF 4 WHEEL DRIVE CLUB
- CALIFORNIA NATIVE PLANT SOCIETY
- CALIFORNIA OFF-ROAD VEHICLE ASSOCIATION
- FISH AND GAME HABITAT CLUB
- HIGH DESERT MULTIPLE USE COALITION
- KERNVILLE CHAMBER OF COMMERCE
- KERN COUNTY BOARD OF TRADE
- KERN RIVER VALLEY CHAMBER OF COMMERCE
- SEQUOIA FORESTKEEPER
- THE WILDERNESS SOCIETY
- SOUTHERN CALIFORNIA TRAILS
- STEWARDS OF THE SEQUOIA
- STEWARDS OF THE SIERRA
- TROUT UNLIMITED

***Appendix H***  
***Non-Intensive Inventory Strategy***

## **Non-Intensive Inventory Strategy for the Addition of Motor Vehicle Routes and Areas at Lake Isabella to the Sequoia National Forest Transportation System**

### **I. Background and Purpose**

Lake Isabella is an artificial reservoir located in the Sequoia National Forest, Kern River Ranger District. As designed, Lake Isabella has a maximum storage capacity of 568,000 acre feet of water. However, storage of the reservoir varies according to snowpack and the demands of hydropower and agriculture. During periods of low storage, residents and visitors often drive to the water's edge. This use was significantly curtailed by the Army Corps of Engineers in its *Isabella Lake Master Plan* (1979). However, the Forest Service subsequently deferred its development of a plan to manage motor vehicle uses at Lake Isabella due to public concerns following its management acquisition in 1991. The forest's current travel management planning efforts include alternatives addressing motor vehicle use within the reservoir.

In its travel management planning efforts, the Sequoia National Forest is considering possible effects to historic properties under the procedures of the Pacific Southwest Region's programmatic agreement: *Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region, U.S.D.A. Forest Service, Intermountain Region's Humboldt-Toiyabe National Forest, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Designating Motor Vehicle Routes and Managing Motorized Recreation on the National Forests in California* (2006) (**Motorized Recreation PA**). Unfortunately, the Motorized Recreation PA's strategy for considering the effects to historic properties associated with route designation and travel management undertakings (Appendix C) is not well suited for reservoirs where accessibility is constrained by high water levels during much of the year. The Sequoia National Forest has prepared this non-intensive strategy pursuant to stipulation III.C.5 of the Motorized Recreation PA to provide for the use of reconnaissance level identification efforts within the Lake Isabella Area of Potential Effects (APE) to: (1) meet the requirements of the National Environmental Policy Act and Section 106 of the National Historic Preservation Act associated with its NEPA decision; and (2) provide for subsequent intensive inventories and implementation of historic property treatment measures as possible and as needed over a four year period as outlined below. This strategy would apply to defined areas between existing recreation areas around the periphery of Lake Isabella and the water's edge as it recedes during drawdown periods (see attached map for locations).

### **II. Non-Intensive Survey Strategy**

A. Procedures for identifying those routes and areas (APE) addressed by this strategy:

1. The Forest's Travel Management Interdisciplinary Team will identify, using comments from the public and Forest staff, those areas around the reservoir where traditional public motor vehicle use is unlikely to impact cultural, biological or other resources.
2. The Forest HRM shall define the Area of Potential Effect (APE) for those lakeshore routes and areas identified by the IDT team.
3. A map shall be prepared for attachment to this strategy depicting the above identified routes and areas (see Appendix).

B. Identification Methods

1. Existing information about the location of historic properties (cultural resources) and possible effects of motor vehicle use within the Lake Isabella APE will be compiled based on a literature review (e.g., archaeological, ethnographic, and historical sources), heritage program files (e.g., recorded cultural resource sites, site location maps, historical archives), and other pertinent information sources.
2. Previous surveys within the APE will be evaluated to determine if they meet the Motorized Recreation PA's inventory requirements.
3. Intensive inventory survey and/or reconnaissance level identification efforts will be conducted within the APE. Reconnaissance level identification efforts for planning purposes include existing information (II.B.1) and information from previous surveys (II.B.2) and satisfy the Motorized Recreation PA's identification requirements for this undertaking's Lake Isabella APE.
4. Areas in the APE that are inaccessible during high water periods will be intensively inventoried when exposed during drawdown periods. The forest will develop a priority inventory strategy based on potential risk of impacts to cultural resources (i.e., correlation of motor vehicle use levels with predicted cultural resource site sensitivity). High risk areas will be surveyed for cultural resources to the degree possible each year as necessary until completed.
5. All of the Lake Isabella APE should be inventoried within 4 years of the date this strategy is executed. The forest shall report its progress each year as part of its reporting requirements under the Motorized Recreation PA (or Regional PA). At the end of this four year period, those portions of designated open areas that are not inventoried (e.g. because of water levels) will be closed to motor vehicle use by Forest Order.

6. Intensive survey of routes and areas located above the high water line may be deferred until a use-analysis of these routes and areas is completed. Those routes and areas that are identified as receiving moderate or high usage shall then receive intensive survey within 6 months of the completion of the use-analysis. Surveys in areas that receive light use may be deferred (Appendix C, Motorized Recreation PA).

### III. Standard Protection Measures (Appendix B, Travel Management PA)

The Travel Management PA provides a variety of standard protection measures for historic properties designed to minimize surface disturbance. For historic properties located below Lake Isabella's high water line, fluctuating water levels, wave action, and sediment deposition over a nearly 60 year period has had a major impact on historic properties. Additionally, many of the routes and areas located above high water line around the periphery of the lake have been in use since the creation of the reservoir in 1953. Under the Motorized Recreation PA and this non-intensive strategy, protection measures are geared towards treating, avoiding, or minimizing the effects of motor vehicle use (Motorized Recreation PA, Appendix B "Standard Resource Protection Measures) and not mitigating the effects of water fluctuation. Cultural resource inventories establish a baseline that will then be used to identify motor vehicle effects, identify or design protection measures, and measure effectiveness of protection measures.

- A. During the 4 year period of intensive surveys, 25% of the previously identified sites located within the APE shall be relocated and monitored to assess potential impacts of motor vehicle use.
- B. Monitoring requirements after the 4 year intensive inventory period will be identified in consultation with the SHPO.
- C. The Standard Resource Protection Measures (SRPMs) of the Travel Management PA (Appendix B) shall be used as necessary to protect *at risk* historic properties that may be affected by motor vehicle usage.
- D. Those SRPMs prescribed during this 4 year period shall be annually monitored for effectiveness.
- E. If SRPMs cannot provide appropriate protection, that route or area shall be subject to the provisions of 36 CFR 800.

### IV. Post-Planning and Implementation Procedures

The Forest shall provide the funding and staff time necessary to perform all phased Section 106 or associated implementation activities including deferred survey, monitoring, historic property treatment and protection, effects assessment and documentation recommended by the HRM as a condition of the undertaking's approval.

- A. If the recommended work is not completed within required time periods, the forest shall notify and consult with Region 5 and the SHPO on appropriate actions needed to complete the work within an agreed upon time period, or failing to do so, shall comply with 36 CFR 800.
- B. Information from project inventory, monitoring or evaluation shall be used to assess the effectiveness of this non-intensive strategy. The results shall be reported in the Forest's Motorized Recreation PA annual report (or Regional PA or Sierra PA).

## V. Other Procedures

### A. Reporting

- 1. The historic property, archaeological survey report, and annual report documentation standards of the Motorized Recreation PA shall be followed.
- 2. All activities covered by this non-intensive inventory strategy shall be documented in the Forest's Motorized Recreation PA's annual report (or, Regional PA or Sierra PA).

### B. Strategy Modifications

- 1. Based on new information, assessments and recommendations made, the protection measures and other procedures laid out in this non-intensive survey strategy may be modified by mutual agreement of the SHPO and Forest Supervisor.
- 2. This interim protocol shall remain in effect for 5 years unless otherwise terminated by either the SHPO or Forest Supervisor. If terminated, the forest shall consult with the SHPO on compliance needs under 36 CFR 800.

This Non-Intensive Inventory Strategy for the Addition of Motor Vehicle Routes and Areas at Lake Isabella to the Sequoia National Forest Transportation System has been reviewed and approved in accordance with stipulation III.C.5 of the Motorized Recreation PA (2006).

***Appendix I***  
***Public Uses White Paper***

**USDA Forest Service  
Sequoia National Forest**

**Public Uses (Roads) White Paper  
Forest Engineer  
September 2009**

## **TOPIC**

- Forest road management and maintenance strategies to meet public and Forest Service access and resource protection needs using limited funding sources.
- Impact of adding unauthorized roads under the Travel Management Rule

## **INTRODUCTION**

The definition of a forest road is “Any road wholly or partially within, or adjacent to, and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System is a “Forest Road” (Title 23, Section 101 of the United States Code). The Sequoia National Forest (NF) road network facilitates forest management, provides access to diverse recreational opportunities, and contributes to the rural transportation infrastructure of interspersed private lands. At the same time, agency and public awareness of the environmental costs and risks associated with forest roads and attendant activities is increasing. As the agency’s emphasis has shifted from commodity production to ecosystem health, the forest road system needs to be analyzed, managed and maintained to minimize environmental impacts and reduce costs, while providing sufficient access for public and agency needs. This paper will provide background information and management strategies being employed to meet these objectives.

## **SEQUOIA NATIONAL FOREST ROAD SYSTEM**

State and county roads stretch across the Sequoia NF and serve large tracts of federal land. Some of these county roads are also designated as Forest Highways, making them eligible under the Federal Lands Highway Program for disaster relief and major renovation funds. Examples are Western Divide Highway and Parker Pass Road. Sequoia National Forest System (NFS) Roads, under Forest Service jurisdiction, branch off from these state and county roads as arterial, collector and local roads.

National Forest System (NFS) roads are not public roads in the same sense as roads that are under the jurisdiction of State and county road agencies. NFS roads are not intended to meet the transportation needs of the public at large. Instead, they are authorized only for the use and administration of national forest lands. Although generally open and available for public use, that use is at the discretion of the Secretary of Agriculture. Through authorities delegated by the Secretary, the Forest Service may restrict or control traffic to meet specific management direction.

NFS roads are categorized using the following system:

**Maintenance Level (ML) 5:** Roads that provide a high degree of user comfort and convenience. Normally double lane paved facilities, or aggregate surface with dust abatement. This is the highest standard of maintenance. These roads are open only to highway legal traffic under state law.

**Maintenance Level 4:** Roads that provide a moderate degree of user comfort and convenience at moderate speeds. Most are double lane aggregate surfaced. Some may be single lane. Some may be chip sealed or dust abated. These roads are open only to highway legal traffic under state law.

**Maintenance Level 3:** Roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Typically these roads are low speed, single lane with turnouts and native or aggregate surfacing. These roads are open only to highway legal traffic under state law.

**Maintenance Level 2:** Roads open for use by high-clearance vehicles. Passenger car traffic is allowed but discouraged. Use by the public is unrestricted, and is generally focused on access to privately-owned lands or recreation sites, or permitted activities (grazing, woodcutting, etc.). The Forest Service uses these roads extensively for administrative purposes. Non-traffic generated maintenance is minimal. They are roads with roughly graded, native surface traveled ways and are open to all vehicles including OHVs under state law unless designated otherwise.

**Maintenance Level 1:** These roads are closed year-round, but some intermittent use may be authorized. When closed, they must be physically closed with barricades, berms, gates, or other closure devices. When closed to vehicular traffic, they may be suitable and used for non-motorized uses, with custodial maintenance.

The current Sequoia NF transportation system encompasses 1,623.7 miles of roads in all maintenance levels (Table 1).

Table 1. Road Mileage on the Sequoia National Forest by Operational Maintenance Level.

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Maintenance Level	Miles
Level 1	196.3
Level 2	902.2
Level 3	303.5
Level 4	140.8
Level 5	80.9
<b>Total Miles:</b>	<b>1,623.7</b>

## ROAD MAINTENANCE TERMINOLOGY

Maintenance needs on NFS roads are categorized and quantified in several ways that must be understood to make sense of cost data and projected annual and deferred maintenance needs being reported at the national level. Common terms used in this paper are defined here.

**Traffic Generated & Non-Traffic Generated Maintenance:** Traffic generated maintenance needs are those associated with the use of a road, such as rutting of the roadbed caused by traffic during wet weather. In general, as use on a particular route increases, so does the traffic-generated maintenance needs. Non-Traffic generated maintenance is independent of the use of a road. For example, the growth of tree limbs and brush creates a maintenance need, but the growth is independent of the volume of traffic the road receives.

**Annual Maintenance:** This term refers to the expected annual maintenance required on roadways and roadsides based on the Maintenance Level assigned to the road. The actual amount of maintenance required depends on the amount of use the road has received, the condition of the surface, and the season of use. Annual maintenance estimates include many work items that are not done yearly, but are annualized. For example, the aggregate surfacing on a mile of level 3 road may last 25 years and cost \$100,000 to replace. This equates to a simple annualized cost of \$4,000 per mile.

**Deferred Maintenance:** This is work that can be deferred, without loss of road serviceability, until such time as the work can be economically or efficiently performed. Using the example above, if the surfacing is completely worn down, the deferred maintenance is \$100,000 per mile for replacement. Deferred maintenance needs can be reduced through a number of different actions and strategies, as discussed below.

**Safety & User Related Maintenance:** This term refers to activities that protect the public and agency employees and allow use of the road for the intended purpose. Examples include installation of warning devices (such as stop or bridge abutment signs); pothole patching on a level 5 road; maintaining surface and brush clearance for passenger car access to developed recreation sites; maintaining access for fire suppression initial attack equipment; or maintaining access for forest health project planning and implementation.

**Resource Protection Related Maintenance:** These activities preserve the road prism for its intended use and minimize erosion and sediment delivery to aquatic systems. Examples include ditch and culvert cleaning; maintaining rolling dips to prevent stream diversion; or surface blading to remove wheel ruts that concentrate runoff.

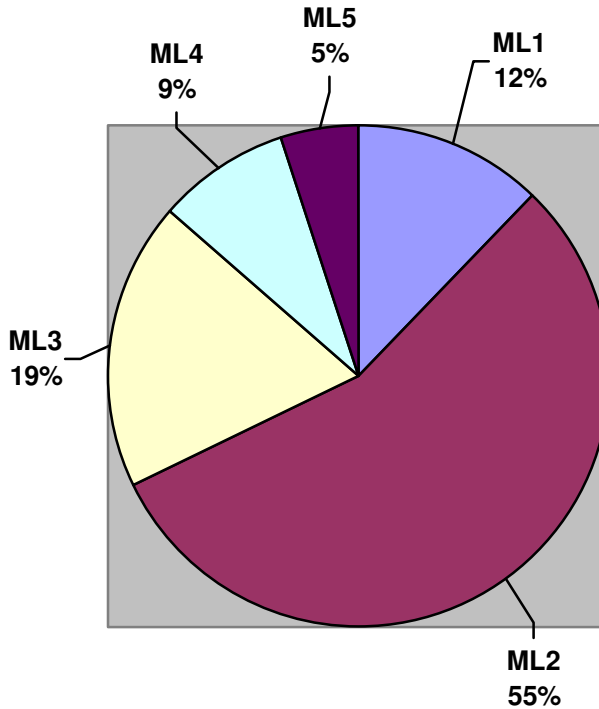
**Stormproofing & Aquatic Passage:** These projects reconstruct a road using various techniques to minimize chronic and storm related resource damage, reduce future maintenance costs, and restore aquatic passage at stream crossings. Stormproofing includes out-sloping the road surface to the maximum extent possible and eliminating associated inboard ditches and cross drains; installing larger culverts and/or lowering the grade through stream crossings to reduce fill volume and prevent diversion; installing rolling dips on moderate road grades to minimize road surface erosion; armoring fills with rock to reduce erosion should they be overtopped; or completely replacing earth fills with rock. Aquatic passage involves replacing a pipe culvert with an open bottom culvert or bridge to restore the natural stream bottom.

## **DEFERRED MAINTENANCE BACKLOG**

The Sequoia National Forest's transportation system has developed over the past 100 years, generally in response to public access and resource extraction needs. The current inventory shows over 1,623 miles of road, with 67% in ML's 1 and 2, and 33% in ML's 3, 4 and 5 (Figure 1). Road maintenance budgets have declined over the past decade, and the Forest's internal capability to maintain roads has been reduced with loss of maintenance personnel and equipment. The Sequoia 2006 Year-End Deferred Maintenance Report on I-Web reported a Sequoia NF deferred maintenance backlog of \$34.2 million and the need for an annual maintenance budget of \$3.3 million to cover all ML 1 – 5 roads on the system. The 2006 report was based partially on several years of deferred maintenance data collection on the ML 3-4-5 roads on the Sequoia, and partially on random samples of the ML 1-2 roads. Deferred maintenance data collection after 2006 has been solely based on the national random road sample. For these reasons, the 2006 report is much more representative of the Sequoia's actual deferred maintenance needs, although some of the costs are still high as discussed below.

**Figure 1**

**Sequoia NF Road Maintenance Levels Total System  
Miles 1623**



The random road sample and national estimates require some explanation. Since 2007, the deferred and annual maintenance figures for all roads have been generated using a national formula based on random sampling (less than 0.2% miles of system roads nationwide for 2009) and standard maintenance prescriptions. For several years ending in 2006, the random sample approach was used only on the ML 1-2 roads, while actual data was collected on a larger portion of the ML 3-4-5 roads. The random road sample approach is a useful tool for tracking national trends and producing auditable outputs, but was never intended for use at the forest level, nor is it considered to be statistically valid at this scale. The 2006 deferred maintenance cost figures for ML 4 and 5 roads (\$21.2 million) is a reasonably fair assessment of needs, since paved or chip sealed roads have clearly defined maintenance needs to preserve the surfacing and avoid rapid failure. Annual maintenance cost figures (1.2 million) for ML 4 and 5 roads are too high for the Sequoia due to lighter traffic volumes and winter snow cover extending the pavement life. Local estimates are closer to \$0.75 million. Maintenance level 2 and 3 road maintenance costs are even more overstated. These roads account for \$11.2 million

(33%) of the 2006 deferred maintenance and \$1.5 million (45%) of the annual maintenance needs; however these require far less maintenance expenditures to remain useable and protect natural resources. The nationally calculated cost figures for ML 2 and 3 roads are based on several assumptions:

- High cost aggregate surfacing should be replaced and maintained on most level 3 roads
- Culverts have fixed and relatively limited life spans
- ML 2 roads require high numbers of cross drain culverts
- Roadside vegetation and debris should be regularly removed from every road

These assumptions are not site-specific to the Sequoia NF, and do not apply to many of the Forest's roads. Given the conditions on the ground and current maintenance and environmental objectives, the maintenance figures for ML 2 and 3 roads are considered to be unreasonably high, which artificially inflates the Forest deferred backlog figure. More reasonable figures for the entire Sequoia ML 1 through ML 5 road system would be in the range of \$28 million deferred maintenance and \$2 million annual maintenance. While these figures may still appear high, they are slowly being reduced through a variety of activities that are part of a Forest-wide strategy.

## **FOREST STRATEGY FOR ROAD MAINTENANCE**

Sequoia NF line officers regularly make decisions about which roads to maintain or improve, and to what standard, in order to protect resources and minimize costs. These maintenance decisions, coupled with road projects such as stormproofing and decommissioning, reduce road maintenance needs and the deferred maintenance backlog. These actions are accomplished through carefully targeted maintenance planning, and aggressive pursuit of funding opportunities. The Forest has requested and received significant additional funding from several sources for road restoration and design projects since 2005. These actions have reduced annual road maintenance needs, allowing more regular maintenance funds to be focused on the deferred maintenance backlog.

### Annual Maintenance

Road managers consider a number of factors in deciding when, where and on what to spend annual maintenance funds. Every road does not need or receive maintenance every year, nor is every type of maintenance task completed when a road is maintained. There is no expectation, either by Forest managers or the public that every mile of every Forest road will be passable every year. A description of the Sequoia NF transportation system by maintenance level follows.

**Maintenance Level 5:** These roads are mostly double lane paved that do require care every year and significant mission and safety related maintenance every 8 – 10 years. Important to note is these roads only make up 5% of the system. An example is the 44 mile long Sherman Pass Road located between Tulare County road M99 and J41

connecting the Kern River Canyon to Kennedy Meadows on county road J41. These roads receive relatively low traffic volumes with significantly fewer log trucks than in years past, and most are not driven in winter due to snow cover. This substantially reduces maintenance costs as heavy vehicles and winter use greatly accelerate asphalt deterioration, and generate increases in safety related costs. By the end of 2009, we will have contracted or completed major maintenance on 52 of 81 miles of level 5 roads in the last five years. Work accomplished includes completing full depth asphalt patching of bad areas, pothole patching, and chip sealing of some segments. This will extend the pavement life for up to 10 years. The remaining 29 miles are in fair to good condition. Drainage is fully maintained and sediment run-off is negligible on these roads.

**Maintenance Level 4:** These are mostly chipsealed roads with some asphalt sections that also require annual care and significant mission and safety related maintenance every 8 – 10 years. These roads make up 9% of the system. They generally service campgrounds, major trailheads, river accesses and administrative sites. These roads receive low traffic volumes and speeds. Some are not driven in winter due to facility seasonal closures and snow cover; those that are open in winter receive very low use. Many of these roads have received the critical maintenance necessary to preserve the surfacing. Examples include reconstruction of the Troy Meadow and Princess campgrounds and asphalt seal coats or chip seals currently funded at nine administrative sites. Drainage is fully maintained and sediment run-off is negligible.

**Maintenance Level 3:** These roads make up 19% of the system and the majority are in-sloped to a ditch, which reduces the probability that water will concentrate on the road and erode the surface. Since the mid 1990's, the traffic mix has shifted to predominately light administrative use and dispersed recreation. The maintenance objectives have shifted to drainage structure cleaning, debris removal, hazard tree removal and spot roadside brushing for safety. The road surfaces are generally hard, stable and bumpy, but are passable with most passenger cars having reasonable ground clearance. The majority of traffic on these roads is pickup trucks or sport utility vehicles, which offer even better ground clearance. These roads are graded only as necessary for proper drainage or for safety concerns such as severe wash boarding. This not only saves maintenance funds, but reduces fresh ground disturbance and reduces surface disturbance and the potential for sediment generation. We only plan to place or replace aggregate surfacing where needed for resource protection. From a road user perspective, the trip may take a little longer, but given the winding roads, steep drop offs, extremely light traffic volumes and beautiful country, this is probably a good thing.

The following summarizes the maintenance level 3 strategy and cost savings:

- **Aggregate Surfacing** – Applied only as needed for resource protection adjacent to major streams or in soft soils or for driver safety.
- **Grading/Ditch Cleaning** – Conducted as needed to restore surface drainage or abate safety hazards. In many areas where the surface is hard and stable, the roadbed would need to be ripped in order to loosen enough soil to grade a smooth

running surface. This ground disturbance could lead to an increase in sediment run-off until the road surface stabilizes, so roads with stable surfaces are generally not graded.

- **Culverts** – Check and clean as needed, with scheduled replacement of those that are deteriorated or of inadequate size. National standard for replacement life is 20 years; however, inspections indicate that most culverts on the Sequoia are 30 – 40 years old; many are still in good condition. Changing culvert lifespan directly affects calculated deferred maintenance costs.
- **Debris Removal** – Accomplished as required on all ML 4 – 5 and most ML 3 roads, but generally only as needed for specific projects on ML 2 roads. As an example, in fiscal year 2008 only 46 miles of ML 2 roads received maintenance.
- **Roadside Brushing** – Brushing needs depend on vegetation types and precipitation which decreases substantially from north to south and west to east across the Forest. The northern-most roads on the Sequoia NF with lower growing vegetation generally have higher brushing costs. Brushing is focused on areas with safety concerns (generally sight distance around curves). Force account crews assist with spot brushing, which is less expensive and more flexible than using contract crews.

**Maintenance Level 2:** These roads make up 55% of the system. The majority of these roads are only maintained as needed to support Forest projects or provide access to lookouts or recreation facilities; therefore, many may not see any maintenance for several years. In some cases, roads may become impassable due to rocks or down trees. When needed, maintenance activities typically consist of debris removal and roadside brushing. The amount of brushing required can be substantial, depending on location and the last time it was done. Spot aggregate surfacing is only used to stabilize soft areas. By designing a maintenance scheme focused on roads needed specifically for project or recreation access, we can effectively utilize our maintenance budget on the highest-priority needs.

**Maintenance Level 1:** These roads make up 12% of the system. Normal practice is to place these roads into self-maintaining hydrologic storage using a combination of water bars, rolling dips and pulling culverts. Closure device is either a gate or berm. No maintenance is typically performed except to check the closure device.

#### Change in Operational Maintenance Level

When roads no longer warrant or receive the type of use for which they were designed, the road manager may recommend that the road's maintenance level be reduced. For example, in many cases on the Forest, ML 3 roads support little traffic, and may be subject to rocks, woody debris, encroaching vegetation and uneven surfaces. Over the past decade a number of ML 3 roads have been reduced to ML 2, and drainage function (rather than passenger comfort) has become the primary objective. These roads are then

prioritized for maintenance with the rest of the ML 2 roads. Annual maintenance needs are reduced, and the dollar values assigned to these roads as part of the deferred maintenance backlog are also reduced.

### Stormproofing and Decommissioning

Stormproofing opportunities are typically evaluated on maintenance level 1 through 3 roads, to reduce the need for drainage maintenance and to prevent catastrophic soil loss during significant storm events. Approximately 26 miles of roads have been stormproofed using special funding sources. Stormproofing project environmental studies are being initiated on 9.3 miles of roads in the Deer Creek and Nobe Young drainages.

Decommissioning is typically analyzed at the watershed level through the appropriate project-level environmental documentation. It may be as simple as taking a naturally revegetated road with no erosion issues off the system, or it may involve major reconstruction to remove culverts and fills, followed by aggressive outsliping to restore the original hillside contour to the extent possible. All decommissioned roads and associated deferred and annual maintenance costs are removed from the transportation system corporate database. Since Fiscal Year 2001, the Sequoia NF has decommissioned 9.7 miles of NFS roads and 2.4 miles of unauthorized roads that were not needed and were causing or could potentially cause resource damage.

Both stormproofing and decommissioning opportunities on the Sequoia NF have been significantly limited by the designation of the Giant Sequoia National Monument in 2000 and the subsequent requirement to develop a monument management plan and transportation plan. Significant changes to the transportation system within the monument could not be pursued until a plan was in place. A Monument management plan was initially completed in December 2003 but was thrown out in court in 2006. A new management plan is currently being prepared. Once a new plan is in place, both stormproofing and decommissioning opportunities within the monument can be more aggressively pursued.

## **ADDING ROADS TO THE SYSTEM**

A logical question when proposing to add new roads to the transportation system is that of affordability. The ongoing efforts described in this paper are aimed at providing a sustainable transportation system to meet a range of access needs and protect natural resources. The unauthorized roads being proposed for addition to the system under the Travel Management EIS have for years provided access to dispersed recreation opportunities, and connections between NFS roads. These routes have not received Forest Service maintenance and most have not required it, due in large measure to being mostly short lengths located over generally gentle slopes with limited erosion potential. On-the-ground review of these routes indicates that only a few require drainage or repair work; most do not require maintenance for user access. Expected additional management

costs are (1) installation of road signs at less than \$200 each and (2) entry of data into the corporate INFRA database.

## **SUMMARY**

- Management of the Forest road system has changed from an emphasis on commodity extraction to resource protection.
- The Sequoia NF is working towards the minimum road system to meet agency and public uses.
- National maintenance cost models were not intended to be used at the Forest level
- The Forest road management program is focused on safety and resource protection while aggressively seeking to leverage maintenance funds through grants and special programs.
- Strategies to reduce annual maintenance costs include:
  - Prioritizing maintenance of ML 2 roads on project and recreation-related access needs
  - Downgrading maintenance levels where possible without compromising user needs.
  - Focusing on watershed level stormproofing and decommissioning to enhance resource protection and reduce future maintenance needs.
  - Leveraging other resources such as fire crews to accomplish road brushing so that both road maintenance and vegetation treatment requirements can be met.
  - Pursuing Off Highway Vehicle (OHV) grants through the State to help accomplish needed maintenance on ML 2 roads available for OHV use where that work would likely otherwise not be accomplished.
- Proposed road additions under the Travel Management EIS will have minimal impact on the road maintenance program.