Subject: Report and recommendations on the results of a Bureau of Land Management data call for information on NEPA records associated with certain Special Recreation Permits

Date: 12/18/2005

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Introduction

The purpose of this document is to determine whether a Bureau of Land Management (BLM) proposal to establish a categorical exclusion (CX) as defined by the National Environmental Policy Act (NEPA) for routine authorization of Special Recreation Permits (SRPs) can be supported. The proposed CX, if established, will affect how some day and overnight use SRPs are evaluated and issued under NEPA. The types of SRPs that will be affected are those which can meet the following criteria.

> Proposed 516 DM citation 11.9(H)(1):
> *Issuance of Special Recreation Permits for day use or overnight use up to 7 consecutive nights that impact no more than 3 contiguous acres; and/or for recreational activities in travel management areas or networks that are designated in an approved land use plan.*

To make an informed determination of the efficacy of the proposed SRP CX, key questions (listed below) were posed, and data relevant to answering these questions were collected through a stratified random sample of SRPs initiated or actively administered by the BLM from 2000 to 2005.

- What type of NEPA document preparation process was used to enable the issuance of the identified SRP?
- What type of SRP was issued? Commercial use, organized group or competitive event?
- Was the SRP for day or overnight use? If overnight use, how many nights were permitted?
- Did the overnight use occur in a staging area? If so, how large (in acres) was the area?
- Was the SRP activity in a designated travel management area or network?
- Were there significant individual or cumulative impacts in the NEPA analysis for the project? If yes, were the significant individual or cumulative impacts mitigated?
- Were there any unexpected impacts? If there were unanticipated impacts, what were they?
- How were the results validated?
- Was the NEPA analysis process challenged and if so was the NEPA analysis upheld?

This report describes the administrative process and methods used to construct and manage the data call, and to compile and analyze the data received. Findings relevant to answering the questions listed above are presented in tabular and text format. These findings are subsequently discussed in a business framework. The discussion concludes with a recommended action for the proposed SRP CX ("516 DM citation 11.9(H)(1)").

Background

The BLM currently issues an estimated 3,500 special recreational permits on public lands annually. Approximately 1,500 permits are re-issued each year. The permits granted include SRPs for commercial recreation operations, competitive events, and organized group activities. Example activities that would be covered by the proposed SRP CX include, but are not limited to: an organized group of bird watchers going to a specific area for the day, a scout trip, an orienteering competition, competitive dog trials, organized hunting camp, commercial sales event, organized fun runs/walks for life, and endurance horse racing.

Data Call Administrative Process

An interdisciplinary team of subject matter experts in the BLM's Washington Office (WO) identified the information needed to determine whether the proposed SRP CX is adequate for certain kinds of special recreation activities on Department of the Interior (DOI) BLM-administered lands. Existing sources of relevant information were assessed. The BLM Recreation Management Information System (RMIS) located on a central server at the Denver Federal Center in Denver, Colorado, was identified as the best source of SRP information. RMIS contains SRP records spanning a five year period from October 1, 2000 through September 30, 2005 this data is in digital format.

A BLM statistician specializing in the biophysical applied sciences (biometrician) drew a sample from the SRP parent population containing 8,063 RMIS records to create a stratified random sample of SRP activity by state administrative area, see Table 1. The criteria used to create the sampling scheme are described in the next section.

WO staff created a database format for the associated NEPA compliance process data call and drafted data entry instructions for completion of a customized Microsoft Excel worksheet containing 21 fields. The formal data call was issued on November 8, 2005 through a BLM Instruction Memorandum (IM-2006-031). Data requested in the IM included identifying the type of NEPA procedure used, the type of permit issued, permit parameters, and whether there were predicted or actual individual and/or cumulative impacts associated with the authorized SRP activity. BLM staff was identified in the IM to answer respondent questions and to receive data.

Field office staff entered the required data in their assigned Excel spreadsheet. Source materials to complete the data call included BLM land use plans and associated NEPA documents, tiered BLM "determination of NEPA adequacy" reports, CX review checklists, Findings of No Significant Impact, management decision documents, and internal reports. In a few instances where interagency planning or management of SRPs occurred, Forest Service land use plans were used as source materials.

Data Call Administrative Process

In early November 2005, the data call biometrician obtained a copy of the RMIS database from the BLM server in Denver and simulated, through trial runs, an estimate of the number of SRPs necessary to produce a sample capable of generating acceptable inference results (CI=95%) for decision making. Each state's administrative area (State) was considered a stratum and allocated a portion of the sample depending upon the number of SRPs issued in that State. A strictly proportional allocation of samples by State was deemed inappropriate because states that issue a lot of SRPs would disproportionately represent the BLM. For example, in Table 1 all ten SRPs available for the Eastern States were included, while only 4.3 percent (100 of the 2,318) of the Nevada SRPs were included.

It was anticipated that about 50 percent of the SRPs in the data base qualified under the proposed CX language, so the sample size was increased two-fold to insure enough data would ultimately be available. Table 1 summarizes the number of SRPs issued by State, the selected sample size for each State, and the percent contribution of the available SRPs requested of each State.

Each State listed in Table 1 was provided with its own worksheet containing a random sample of their predetermined portion of SRPs issued from October 1, 2000 through September 30, 2005. The first five fields for each record were pre-populated by extracting the appropriate inputs from the RMIS (parent) data base. The extracted information was: State, Field Office Name, BLM Organization Code, SRP administrative number, and the name of the SRP project.

Every field (column) header contained coding information to avoid ambiguity when data were entered. Instructions were provided to support the data entry process. Data entry choices were limited to: explicit information about each SRP; one of a small choice of coded options; a single metric; or a "yes", "no", or not applicable response. Only 1 of the 26 fields required a narrative response that could generate dissimilar data entries. A narrative was necessary to answer the following question:

Table 1: Sampling Plan			
State	# of SRPs in RMIS database	# SRPs in sampling plan (sample size)	% total SRPs available by State
Alaska	211	40	19.0
Arizona	447	40	8.9
California	1,207	80	6.6
Colorado	895	60	8.7
Eastern States	10	10	100.0
Idaho	207	40	19.3
Montana	265	40	15.1
Nevada	2,318	100	4.3
New Mexico	351	40	11.4
Oregon/Wash.	834	60	7.2
Utah	930	60	6.5
Wyoming	388	40	10.3
Totals	8,063	610	7.6

- Were actual impacts the same as predicted impacts? If not, what were the unanticipated impacts?

Results of the Data Call

Table 2: Informative Records Generated by the Data Call				
State	**Target sample size**	**Informative records provided**	**Deleted records**	**Inadequate records (% of State sample size)**
Alaska	40	36	4	10.0
Arizona	40	40	0	0.0
California	80	78	2	2.5
Colorado	60	59	1	1.7
Eastern States	10	10	0	0.0
Idaho	40	39	1	2.5
Montana	40	40	0	0.0
New Mexico	40	34	6	15.0
Nevada	100	62	38	38.0
Oregon/Wash.	60	53	7	11.7
Utah	60	59	1	1.7
Wyoming	40	38	2	5.0
Total	**610**	**548**	**62**	**N/A**

The data call response rate was excellent. The number of informative records generated by each State appears in Table 2. The high percentage of inadequate records indicated in Nevada is primarily due to a high rate of organized event applications for weddings in the Red Rocks National Conservation Area in Nevada. The permits were frequently cancelled by the applicant(s) so there were no actual environmental impacts to be compared to predicted impacts; in other words no useful NEPA process data could be generated.

Data Cleaning and Validation

The original uncorrected data were kept for the administrative record. These data, however, contained multiple errors that were either fixed before the data were analyzed or the project was rejected as inadequate for the NEPA compliance review process. After extensive error-checking and follow-up with field personnel responsible for problem data entries, a majority of these errors were corrected. Where the CX team could not resolve data discrepancies such as records missing data and/or logic errors the records were excluded from the analyses. Sixty-two projects were rejected for the reasons shown in Table 3.

Table 3: Inadequate SRPs in the Sample	
SRP Data Rejection Criteria	**# of projects**
Permit not used by applicant	38
Unable to resolve data discrepancies in time for the analyses	19
Permit cancelled due to permit violations	2
RMIS SRP project (as identified) did not match Field Office records	2
Duplicate record reported by Alaska Field Office	1
Total	**62**

Scope of Representation

The RMIS database contains information on all of the BLM SPRs issued since October 1, 2000. Therefore, by using a State-stratified random sample of the BLM's RMIS database of SRPs it was concluded that statements based on these data represent the range and scope of

special recreation activities permitted in the BLM. The following questions are relevant to determining whether the scope of activities proposed in the SRP CX is representative.

Table 4a: SRP Types	
Permit cClass	**% of Permits**
commercial use	72.0
organized group	12.3
special event	15.7
Total	100.0

- *What type of SRP was issued? Commercial use, organized group or competitive event?*
- *Was the SRP for day or overnight use? If overnight use, how many nights were permitted?*
- *Did the overnight use occur in a staging area? If so, how large (in acres) was the area?*
- *Was the SRP activity in a designated travel management area or network?*

Table 4b: Day Verses Overnight Use Permits	
Type of Activity	**% of Permits**
Day Use	66.7
Overnight Use	33.3
Total	100.0

Tables 4a and 4b provide inferred percentage answers to the first two questions listed above on the kinds of SRP activities permitted in the BLM. Answers to the remaining questions relating to length of overnight stay permits, staging area use and acres affected, and how many SRPs were for activities in designated travel management areas or networks are provided in Tables 4c, 4d, and 4e. These results are based on percent of the sample population which consisted of 548 records.

A majority of SRPs issued were commercial use permits and day use only permits. However, the variety of permit classes (Table 4a), types of permitted activities (Table 4b), length of stay for overnight use permits (Table 4c), size of staging areas (Table 4e), and use of established travel management areas and networks (Table 4d) are clearly representative of the activities and criteria identified in the proposed SRP CX.

Table 4c: Length of Overnight Stay Permits	
# of Overnights	**% of Sampled SRPs**
none (0)	1.2
1- 7	17.5
8-14	7.0
15-21	2.4
22+	5.1

Analytical Methodology

The Appendix contains a detailed description of the data analysis methods used and statistical findings relevant to tables 4-7. The data call sampling plan, data analyses/interpretation, and statistical confidence intervals for inferred results were independently peer reviewed by two independent statisticians. Their review comments have been incorporated into this administrative record.

Table 4d: Staging Area and Travel Network Use		Table 4e: Size of Staging Areas Used	
Proposed CX Use Criteria	**% of Sample**	**Size in Acres**	**% of Sampled SRPs**
Staging Area	45.1	0 - 1.0	30.1
		1.1 – 3.0	10.4
Travel Network	33.7	3.1 – 10.0	2.5
		11– 30	0.5
		30+	1.5

Basis for Proposed Changes to 516 DM part 11

The sampling plan described above and subsequent data call generated 548 records designed to serve as factual evidence to answer the key questions presented in the introduction. Inferred results for the entire RMIS database were calculated based on the 548 record samples. These results were the basis for answering the principle question that follows.

"Are certain activities associated with the issuance of SRPs found to have no significant individual or cumulative impacts?"

If the answer to this question is "yes" for SRPs that meet the proposed CX criteria, the factual data supports the proposed recreation CX. For the remainder of this section we examine this question in the context of NEPA.

Evaluation of the NEPA processes used

- *What type of NEPA document preparation process was used to enable the issuance of the identified SRP?*

NEPA analysis processes are proscribed in three formats: CXs, environmental assessments (EAs), and environmental impact statements (EISs). The data show that 15.0% of the informative SRP records (Table 7) were issued through application of a broadly written CX citation 516DM2,5.4H(5) which says: *"Issuance of special recreation permits to individuals or organized groups for search and rescue training, orienteering or similar activities and for dog trials, endurance horse races or similar minor events."* The BLM believes that the proposed SRP CX eliminates ambiguity and clarifies circumstances where a CX can be applied to SRP authorizations and expressly limits the use of the proposed SRP CX to defined activities specified within the proposed CX language.

Table 5: Type of NEPA Action Used to Issue Special Recreation Permits (%)			
CX	**EA**	**EIS**	**Inadequate data**
12.9	67.0	6.0	14.1

Approximately 14 percent of the SRPs issued by the BLM were eliminated from the analyses performed for this report for the reasons stated in Table 3. An inferred majority of the BLM's SRPs (67%) were issued through EAs as shown in Table 5. CX supported SRPs were a distant second at nearly 13 percent. Six percent of the BLM's SRPs were issued after an EIS analysis process.

How many of these SRPs met the requirements of the proposed SRP CX criteria? Of the 8,063 SRPs issued in the past five fiscal years, we can reasonably infer that approximately 84 percent (CI95 = 81.1% - 86.6%) of the SRPs qualified to meet the proposed SRP CX activity criteria of:

    (1) seven or fewer overnights,
    (2) affects three or fewer contiguous acres when and where a staging area is involved, and/or
    (3) the SRP activities took place in an established travel management area or network.

This means that approximately 16% (CI95 = 12.8% – 18.4%) of all SRPs issued in this same period, regardless of the NEPA process used, do not meet the proposed CX SRP activity criteria.

- ***Were there significant individual or cumulative impacts in the NEPA analysis for the project? If yes, were the significant individual or cumulative impacts mitigated?***

The prime purpose of the data call and subsequent analyses was to determine the answer to the question above when the proposed action involves issuing an SRP. For BLM actions, the potential for a proposed action to have a significant impact is always tested by examining the DOI list of 12 "extraordinary circumstances" (516 DM 2, Appendix 2) regardless of the NEPA analysis format ultimately chosen. If any of the "extraordinary circumstances" are present, the CX analysis process may not be used. In the absence of "extraordinary circumstances" and evidence that a proposed action will not result in either an individual or cumulative significant affect on the environment, a CX, if available to support the proposed action, is typically the NEPA review process warranted and used.

Of the estimated 84% of the informative SRPs that meet the three proposed CX specific criteria identified in the last section, approximately 97.4% (CI95 = 95.8% - 98.3%) generated no significant impacts. Based on the data call results, it appears that the requirement to review the DOI list of extraordinary circumstances for every proposed SRP is sufficient to prevent proposed actions likely to have significant individual and/or cumulative impacts from being authorized through a CX. Of the 548 SRPs sampled for NEPA review effectiveness, none of the SRPs with predicted significant impacts were issued as CXs.

Where an "extraordinary circumstance" was identified or a predicted significant impact might have occurred, the appropriate NEPA analysis process was selected. Table 5 shows us that a large majority of the informative sampled SRP records (67%) were issued through the EA process (which culminates in a "Finding of No Significant Impact" [FONSI] or a "mitigated" FONSI). The number of informative SRP records with predicted individual or cumulative impacts processed as EAs was one percent or less, see Table 6.

When there were predicted significant impacts, which was common for commercial use SRPs on designated wild and scenic rivers, the EIS analysis process was always used. Table 6 shows that more than 32 percent of the SRPs issued had predicted significant

Table 6: Predicted Individual and Cumulative Impacts as a Percentage of the NEPA Process			
NEPA Process	Individual	Cumulative	Both Predicted
EA	0.8	1.0	1.7
EIS	32.3	29.4	43.8

individual impacts and more than 29 percent had predicted significant cumulative impacts. The column for "both predicted" types of impact is not additive since an SRP may have predicted significant individual and/or cumulative impacts. Sixteen of the SRPs sampled failed to meet the proposed SRP CX criteria (overnight use ≤ 7 nights, affect ≤ 3 contiguous acres, and/or occurred within an established travel management area or network) and had predicted individual and/or cumulative significant impact tests. All 16 involved EISs constructed to address proposed boating activities on wild and scenic river corridors. Significant individual impacts predicted included loss of riparian corridor vegetation, soil stability, and private access to the resource.

Significant cumulative impacts were generally associated with planned activities exceeding formally established carry capacities for recreation on the rivers, loss of natural soundscapes, and/or a reduction in quality of life for private landowners living in the river corridor.

Based on the described evidence relating to significant impacts, it appears that the BLM NEPA review process is working as it should and that predicted significant impacts are elevated to an appropriate level of review through established review checklists, administrative procedures, and policies. For example, the DOI and BLM CX review process insures that in the absence of extraordinary circumstances, 516 DM 2, Appendix 2, there are no individual or cumulative significant effects on the environment. If one or more of the extraordinary circumstances were present, a CX cannot be used for the NEPA analysis process. The proposed SRP CX is no exception.

- ***Were there any unexpected impacts? If there were unanticipated impacts, what were they and were they significant?***

Predicted adverse impacts were compared to actual impacts after the SRPs were used. Nine of the 548 SRPs issued and evaluated relative to NEPA processes used resulted in unanticipated impacts, although none of the unanticipated impacts were significant. The remaining eight SRPs addressed boating activities in designated wild and scenic river areas and all eight went through the EIS analysis process. Three of the river recreation SRPs had the unexpected result of causing "less impact" than was anticipated and none of the significant impacts occurred in wild and scenic river areas except for SRPs associated with commercial boating activities.

- ***How were the results validated?***

SRP activities and associated impacts were validated by either personal observation by the field staff associated with the project, field data collection through a monitoring program, systematic evaluation of information received a combination of methods, or in other ways (Table 7). A combination of methods is most frequently used (66.8% of the time) to validate SRP activity impacts.

- ***Was the NEPA analysis process challenged and if so was the NEPA analysis upheld?***

Nineteen of the EISs sampled were appealed on the basis of the NEPA analyses performed. All nineteen of the EISs and associated "records of decision" addressed commercial use permits for boating in designated wild and scenic river corridors. Fourteen of the nineteen EIS NEPA analysis process challenges were found to be invalid and the original BLM decisions were upheld by the Courts. The remaining five challenges are pending a decision in the appeals process.

Table 7: NEPA Review Results Validation						
NEPA	**Validation Method (%)**					
Percent	**Personal Observation**	**Field Data Collection**	**Professional Evaluation**	**Combination**	**Other**	**Total**
CX	1.91	0.36	3.78	8.42	0.55	15.02
EA	11.40	4.56	7.44	53.69	0.94	78.03
EIS	0.0	.22	2.04	4.69	0.0	6.95
Total	13.31	5.15	13.25	66.80	1.49	100.00

Summary of Data Call Findings

The purpose of the recreation program data call and subsequent analyses was to determine whether certain SRP activities associated with day and overnight use and recreational activities in designated travel management areas or networks are having either individual or cumulative adverse impacts on either the physical or human environment as determined through NEPA. Of the 6,404 estimated informative SRP records available, about 15 percent were conducted through CXs, 78 percent through the EA process, and about seven percent through EISs, see Table 7. None of the specific activities proposed in the SRP CX resulted in significant individual or cumulative effects. Predicted adverse impacts were compared to actual environmental impacts after the SRPs were used. Predicted insignificant and significant impacts either did not occur or were mitigated, except for commercial boating permits in wild and scenic river areas, see Table 6. These results were validated by either personal observation by the field staff associated with the project, field data collection through a monitoring program, or systematic evaluation of information received, a combination of the three, or another technique, see Table 7. Therefore, based on the evidence, the answer to the principle question below is "yes".

> **"Are certain activities associated with the issuance of SRPs found to have no significant individual or cumulative impacts?"**

Therefore, the factual data generated by the November 2005 data call supports the proposed SRP CX.

Business Practices

Based on the factual evidence from the data provided in this report, it appears that the established permitting review process is sufficient to prevent significant individual and cumulative impacts that would warrant a higher level NEPA review; and when it is warranted the process identifies the need so that appropriate review takes place.

Additional NEPA review procedures are not warranted for the activities characterized in the proposed SRP CX. Therefore, the time spent in preparing and reviewing an EA or EIS for the activities in the proposed CX can be more efficiently spent in other ways.

Conclusions

Based on the factual evidence, adoption of the proposed SRP CX is recommended. The CX review process insures that the SRP activities proposed will result in no individual or cumulative significant adverse impacts on the human or natural environment; and eliminating the requirement for higher level NEPA review will improve SRP issuance efficiency.

Acknowledgement

Literature Cited

Effron, Bradley and Robert J. Tibshirani 1993. In Introduction to the Bootstrap. Chapman & Hall International Thomson Publishing New York. Pages 184-188.

Appendix: Analytical Methods and Statistical Findings

Data Analysis Process

A binary variable was created for each type of categorical response. So, a question that had three permissible responses, such as "yes", "no" or "NA" (not applicable), would result in three response variables, each one treated as a binary variable (0, 1).

Often only a subset of the SRPs meet criteria for inclusion into a table cell. This means that the number of SRPs within a domain of study in an analysis is known only from the sample and should be treated as a random variable. A domain of study is a subset of the population for which estimate are desired for some attribute(s) of interest. The formula to estimate the number of SRPs that meet a set of criteria within a stratum (State administrative area) is:

$$\hat{X}_h = \frac{\sum_{i=1}^{n_h} I_{hi}}{n_h} N_h ,$$

and the population estimate for the domain is simply the sum of the strata:

$$\hat{X} = \sum_{h=1}^{L} \hat{X}_h$$

where,

L = 12, the number of strata (BLM State Offices),
n_h is the sample size of SRPs in a stratum
N_h is the number of SRP in the data base for a stratum (State) and

$$I_{hi} = \begin{cases} 1 \text{ if the SRP is within the domain of study} \\ 0 \text{ otherwise} \end{cases}.$$

The number of SRPs in the domain of study that meet a set of criteria is computed as:

$$\hat{Y} = \sum_{h=1}^{L} N_h \bar{y}_h ,$$

where, the mean stratum response, $\bar{y}_h$, is

$$\bar{y}_h = \frac{\sum_{i=1}^{n_h} I_{hi} y_{hi}}{n_h} .$$

and

$$y_{hi} = \begin{cases} \textbf{1} \text{ if the SRP meets the criteria} \\ \textbf{0} \text{ otherwise} \end{cases}.$$

It can be noted that

$$\hat{Y}_h = N_h \bar{y}_h$$

which is the estimate of the stratum population.

Results are also presented as the number of SRPs that meet a set of criteria to the total number of valid SRPs in the domain. This is a ratio estimate since both the numerator and the denominator are random variables.

The ratio estimate is the population estimate for the number of SRPs that meet a set of criteria for a domain of study divided by the population estimate for the number of SRPs within the domain. It is:

$$\hat{R} = \frac{\hat{Y}}{\hat{X}}$$

A stratified bootstrap technique was used that has been bias-corrected and accelerated (bca) as described in Effron, Bradley and Robert J. Tibshirani 1993[1] . Bootstrap is a resampling technique where the number of SRPs in the sample for a stratum ,n_h, are drawn with replacement from results of the data call for each of the stratum (States). If this process is repeated many times-- 500 for this project--the bootstrap samples create an empirical distribution from which the confidence intervals can be derived.