

APPENDIX D

Evaluation Of Significant Impacts And Recommended Impact Methodology

by NEPA Design Group

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Introduction. The topic of this appendix is the National Environmental Policy Act's (NEPA's) requirement (including direction in the CFR, court cases, BLM handbooks, etc.) that environmental impact statements (EISs) document a complete and objective evaluation of significant environmental impacts, including a logical and coherent record (impact methodology) of how they were derived. This requirement is not permissive, but a procedural requirement of all federal agencies. The requirement is that EISs provide a full and fair discussion of significant environmental impacts that inform decisionmakers and the public of reasonable alternatives which would avoid or minimize adverse impacts, or enhance the quality of the human environment. The requirement is to focus on significant environmental issues and EISs that are concise, clear, and to the point, and supported by evidence that the federal agency has made the necessary environmental analyzes.

This appendix has five parts. The first part is a collection of legal references demonstrating the requirement for an evaluation and documentation of significant impacts supported by an analytical record of their determination (i.e., documented impact analyses and methodologies). The second part is a list of variables found in the DEIS that, if addressed in a comprehensive way, are the potential basis for an impact methodology to address significant

impacts. The third part is NEPA Design Group's translation of NEPA's procedural requirements into a impact methodology model. The fourth part is NEPA Design Group's summary evaluation of whether the DEIS provides decisionmakers and the public with a complete and objective evaluation of significant environmental impacts. This section is supported by numerous site specific examples located elsewhere in NEPA Design Group's comments to BLM (e.g., tables 4A, 4B, 4C, 4D, NDG's Appendix G, etc.). The fifth and last part is NEPA Design Group's recommendation to BLM of a specific impact methodology for use in a supplemental DEIS.

1. Legal requirements for significant impacts and impact methodologies.
2. References to significance and impact methodologies in the DEIS.
3. NEPS's basic impact methodology model.
4. Evaluation of DEIS.
5. Recommended impact methodology.

I. LEGAL REQUIREMENTS. There are legal requirements that support the purpose of an EIS as it relates to identifying significant impacts. An EIS is intended to provide decisionmakers and the public with a complete and objective evaluation of significant environmental impacts, both beneficial and adverse, resulting from a proposed action and

all reasonable alternatives. Except for the court cases, the following legal requirements are quotes:

1. BLM’s NEPA Handbook (Appendix A).
2. CEQ’s Procedural Regulations To Implement NEPA (Appendix B).
3. CEQ’s 40 Questions (Appendix C).
4. Court cases defining “Significance.”
5. EPA’s Scoping Comments.

BLM’s NEPA Handbook (Appendix A)

- *“The purpose of scoping, generally, is to focus the analysis on significant issues and reasonable alternative...”*
- *“The objectives of this Handbook are: to establish systematic practices for integrating the procedural requirements of NEPA into the planning and decisionmaking processes used by the BLM; to ensure a logical and coherent record of NEPA compliance within the BLM;...”*
- *“An EIS is intended to provide decisionmakers and the public with a complete and objective evaluation of significant environmental impacts, both beneficial and adverse, resulting from a proposed action and all reasonable alternatives.”*
- *“In some cases, impact thresholds may be identified (i.e., minimum or maximum levels of acceptable impact.”*
- *“Use the guidance in 40 CFR 1502.22 if, at any time during scoping or preparation of the EIS, it is determined that relevant information is incomplete or unavailable.”*
- *“The objective should be to find the most efficient method(s) of estimating potential impacts.”*
- *“When analyzing impacts, consider the effects of actions from the perspective of future generations in addition to considering their immediate effects. In other words, analyze short-term uses of the environment in terms of their effects on long-term productivity or resources and the irreversible and irretrievable commitments of resources resulting from those uses. To the extent possible, the analysis of impacts should be quantified. All impacts should be evaluated against the requirements in 40 CFR 1508.8, and 1508.27. Where there is incomplete or unavailable information for evaluating reasonably foreseeable significant adverse impacts, the procedures identified in 40 CFR 1502.22 must be followed.”*
- *“Comments on the draft EIS differ from public involvement earlier in the process because this is the*

first chance the public has to review and comment on the impact analysis and the agency’s preferred alternative and/or proposed action. Comments are addressed if they: are substantive and relate to inadequacies or inaccuracies in the analysis or methodologies used; identify new impacts or recommend reasonable new alternatives or mitigation measures; or involve substantive disagreements on interpretations of significance (see 40 CFR 1502.19, 1503.3, 1503.4, 1506.6, and 516 DM 4.17).”

- *“Comments which express a professional disagreement with the conclusions of the analysis or assert that the analysis is inadequate may or may not lead to changes in the EIS.”*
- *“Disagreements With Significance Determinations. Comments may directly or indirectly question determinations regarding the significance or severity of impacts.”*
- *“Affected Environment...Descriptions should be quantified, if possible, and they should be no longer than absolutely necessary to understand the impacts of the alternatives. It is not necessary or desirable to fully describe parts of the environment that would not be affected in a significant way, although they may be noted in an introduction. This section serves as a baseline showing conditions, including trends in those conditions, as they exist prior to the initiation of the proposed action or any alternative.”*
- *“Identify incomplete or unavailable information as defined in 40 CFR 1502.22 and describe efforts that were made to obtain it.”*
- *“Assumptions and Assessment Guidelines Describe assumptions and assessment guidelines used in analyzing the environmental consequences, either in a separate section or in the discussion of impacts. This information provides the reader with a basis for understanding and judging the reliability of the impact analysis. Identify any criteria, time-frames, rates of change, and other common data or ground rules for analysis which were used by team members in conducting the analysis. Clearly explain the methodology and assumptions used when information critical to the analysis was incomplete or unavailable (see 40 CFR 1502.22).”*
- *“Impacts of the Proposed Action and the Alternatives Analyze and describe the direct, indirect, and cumulative impacts on the quality of the human environment of the proposed action and each alternative analyzing in detail, including the no-action alternative.”*
- *“The magnitude of all impacts should be identified and the risks associated with such impacts assessed. The description of impacts should identify how short-term uses of the environment will affect long-range productivity of resources and identify any irreversible and irretrievable commitments of resources resulting from those uses.”*

- *“Clarity of expression, logical thought processes, and rationale explanations are far more important than length or format in the discussion of impacts. Subjective terms should be avoided. The analysis should lead to a pointed conclusion about the amount and degree of change (impact) caused by the proposed action and alternatives. To the extent possible, the level of certainty associated with such conclusions should be noted.”*
- *“Mitigation Measures. Analyze and describe any mitigation measures which could be implemented to avoid or reduce the projected impacts of the proposed action or alternatives.”*

CEQ’s Procedural Regulations To Implement NEPA (Appendix B)

- *“There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This process shall be termed scoping.”*
- *“Determine the scope and the significant issues to be analyzed in depth in the environmental impact statement.”*
- *Identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review, narrowing the discussion of these issues in the statement to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere.”*
- *“The primary purpose of an environmental impact statement is to serve as an action-forcing device to insure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government. It shall provide full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.”*
- *“Agencies shall focus on significant environmental issues and alternatives and shall reduce paperwork and the accumulation of extraneous background data. Statements shall be concise, clear, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses.”*
- *“Environmental impact statements shall be analytic rather than encyclopedic.”*
- *“Impacts shall be discussed in proportion to their significance. There shall be only brief discussion of other than significant issues.”*
- *“Sec. 1502.3 Statutory Requirements for EIS as required by sec. 102(2)(C) of NEPA — Significantly (Section 1508.27).”*
- *Sec. 1502.3 Statutory Requirements for EIS as required by sec. 102(2)(C) of NEPA — “Affecting (Sections. 1508.3, 1508.8).”*
- *“Sec. 1502.3 Statutory Requirements for EIS as required by sec. 102(2)(C) of NEPA — The quality of the human environment (Section 1508.14).”*
- *“Alternatives Including the Proposed Action. This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.”*
- *“the affected environment shall be succinctly described. The description shall be no longer than is necessary to understand the effects of the alternatives. Data and analyses shall be commensurate with the importance of the impact.”*
- *“Environmental consequences. This section forms the scientific and analytic basis for the comparisons under Sec. 1502.14. The discussion will include the environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, the relationship between short-term uses of man’s environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented.”*
- *“It shall include discussions of: (a) Direct effects and their significance (Sec. 1508.8).”*
- *“It shall include discussions of: (b) Indirect effects and their significance (Sec. 1508.8).”*
- *“The environmental effects of alternatives including the proposed action. The comparisons under Sec. 1502.14 will be based on this discussion.”*
- *“Means to mitigate adverse environmental impacts.”*
- *“a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment;”*
- *“a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment,”*
- *“Significantly” as used in NEPA requires considerations of both context and intensity:”*
- *“Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific*

action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.”

4. “Intensity. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.”

CEQ’s 40 Questions (Appendix C)

- ...“no action” is “no change” from current management direction or level of management intensity...the “no action” alternative may be thought of in terms of continuing with the present course of action until that action is changed. Consequently, projected impacts of alternative management schemes would be compared in the EIS to those impacts projected for the existing plan...This analysis provides a benchmark, enabling decisionmakers to compare the magnitude of environmental effects of the action alternatives.”
- “The “alternatives” section is the heart of the EIS. This section rigorously explores and objectively evaluates all reasonable alternatives including the proposed action. Section 1502.14. It should include relevant comparisons on environmental and other grounds. The “environmental consequences” section of the EIS discusses the specific environmental impacts or effects of each of the alternatives including the proposed action. Section 1502.16. In order to avoid duplication between these two sections, most of the “alternatives” section should be devoted to describing and comparing the alternatives.”
- “Discussion of the environmental impacts of these alternatives should be limited to a concise descriptive summary of such impacts in a comparative form, including charts or tables, thus sharply defining the issues and providing a clear basis for choice among options. Section 1502.14. The “environmental consequences” section should be devoted largely to a scientific analysis of the direct and indirect environmental effects of the proposed action and of each of the alternatives. It forms the analytic basis for the concise comparison in the “alternatives” section.”
- “Mitigation measures must be considered even for impacts that by themselves would not be considered “significant.” Once the proposal itself is considered as a whole to have significant effects, all of its specific effects on the environment (whether or not “significant”) must be considered, and mitigation measures must be developed where it is feasible to do so.”

- “Because the EIS is the most comprehensive environmental document, it is an ideal vehicle in which to lay out not only the full range of environmental impacts but also the full spectrum of appropriate mitigation.” However, to ensure that environmental effects of a proposed action are fairly assessed, the probability of the mitigation measures being implemented must also be discussed. Thus the EIS.”
- “The body of the EIS should be a succinct statement of all the information on environmental impacts and alternatives that the decisionmaker and the public need, in order to make the decision and to ascertain that every significant factor has been examined. The EIS must explain or summarize methodologies of research and modeling, and the results of research that may have been conducted to analyze impacts and alternatives.”
- “Lengthy technical discussions of modeling methodology, baseline studies, or other work are best reserved for the appendix.”
- “An agency is not under an obligation to issue a lengthy reiteration of its methodology for any portion of an EIS if the only comment addressing the methodology is a simple complaint that the EIS methodology is inadequate. But agencies must respond to comments, however brief, which are specific in their criticism of agency methodology. For example, if a commentator on an EIS said that an agency’s air quality dispersion analysis or methodology as inadequate, and the agency had included a discussion of that analysis in the EIS, little if anything need be added in response to such a comment. However, if the commentator said that the dispersion analysis was inadequate because of its use of a certain computational technique, or that a dispersion analysis was inadequately explained because computational techniques were not included or referenced, then the agency would have to respond in a substantive and meaningful way to such a comment.”
- “The reasonable alternative mitigation measures and monitoring programs should have been addressed in the draft and final EIS.”

Court Cases Defining “Significance.”

A.Hanley v. Kleindienst, 471 F.2d 823 (2d Cir. 1972), cert. denied, 412 U.S. 908 (1973)

FACTS: Challenge to a General Services Administration (GSA) EA for construction of a jail and other facilities in New York City. GSA issued an EA which described a number of environmental impacts and concluded that the project was not an action significantly affecting the quality of the human environment.

FINDINGS: 1. Determination of whether an EIS was required turns on meaning of "significantly." Almost every major federal action, no matter how limited in scope, has some adverse effect on the human environment. Congress could have decided that every major federal action should be the subject of an EIS, but by adding "significantly" Congress required that the agency find a greater environmental impact would occur than from "any major federal action."

2. CEQ guidelines suggest that an EIS should be prepared where the impacts are controversial, referring not to the amount of public opposition, but to where there is a substantial dispute as to the size, nature, or effect of the major federal action.

3. Court said that in deciding whether a major federal action will "significantly" affect the environment, an agency should be required to review the proposed action in light of the extent to which the action will cause adverse environmental effects in excess of those created by existing uses in the area affected by it, and the absolute quantitative adverse environmental effects of the action itself, including the cumulative harm that results.

4. Agencies in doubtful cases will prepare EISs rather than risk the delay and expense of protracted litigation on what is "significant."

5. Agencies must affirmatively develop a reviewable environmental record for the purposes of a threshold determination under § 102(2)(C). Before a threshold determination of significance is made, the agency must give notice to the public of the proposed major federal action and an opportunity to submit relevant facts which might bear upon the agency's threshold decision.

B. Hiram Clarke Civic Club v. Lynn, 476 F.2d 421 (5th Cir. 1973)

FACTS: Plaintiffs challenged a proposed low and moderate income apartment project in Houston, Texas, arguing that the Department of Housing and Urban Development (HUD) was barred from funding the project because the agency had failed to prepare an EIS.

FINDINGS: The court concluded that HUD was not required to file an EIS covering the proposed apartment project. According to the court, the plaintiffs "have raised no environmental factors, either beneficial or adverse, that were not considered by HUD before it concluded that this apartment project would produce no significant environmental impact." *Id.* at 426.

Having made that ruling, the court went on to address the plaintiffs' claim that HUD's determination of "significance" improperly focused only on adverse environmental impacts, contrary to the CEQ Guidelines:

"[Plaintiffs] argue that NEPA requires that an agency file an environmental impact statement if any significant environmental effects, whether adverse or beneficial, are forecast. Thus, they argue, by considering only adverse effects HUD in effect did but one-half the proper investigation. We think this contention raises serious questions about the adequacy of the investigatory basis underlying the HUD decision not to file an environmental impact statement." *Id.* at 426-27 (emphasis in original).

Without amplification or example, the court expressed its view that "[a] close reading of Section 102(2)(C) in its entirety discloses that Congress was not only concerned with just adverse effects but with all potential environmental effects that affect the quality of the human environment." *Id.* at 427 (emphasis in original). Despite this, the court agreed that the project in question was not a major federal action significantly affecting the quality of the human environment.

C. Douglas County v. Babbitt, 48 F.3d 1495 (9th Cir. 1995), cert. denied, 116 S. Ct. 698 (1996)

FACTS: Plaintiffs challenged the Secretary of the Interior's decision under the Endangered Species Act (ESA) to designate critical habitat for a threatened or endangered species without complying with NEPA.

FINDINGS: Holding that NEPA does not apply to such designations, the court found that ESA procedures have displaced NEPA requirements and that ESA furthers the goals of NEPA without requiring an EIS. Apart from its interpretation of ESA, the court also concluded that "NEPA procedures do not apply to federal actions that do nothing to alter the natural physical environment." 48 F.3d at 1505. To clarify this point, the court held that

"If the purpose of NEPA is to protect the physical environment, and the purpose of preparing an EIS is to alert agencies and the public to potential adverse consequences to the land, sea or air, then an EIS is unnecessary when the action at issue does not alter the natural, untouched physical environment at all."

D. Catron County Board of Commissioners v. U.S. Fish and Wildlife Service, 75 F.3d 1429 (10th Cir. 1996)

FACTS: Similar to Douglas County, plaintiffs challenged a critical habitat designation that had been made without compliance with NEPA.

FINDINGS: The court specifically referenced and disagreed with the Douglas County decision from the 9th Circuit and held that ESA procedures did not displace NEPA requirements, that there were "actual impact flows from the critical habitat designation," and that compliance with NEPA will further the goals of ESA.

With respect to its factual conclusion that there could be impacts from the critical habitat designation, the court reiterated plaintiffs' claim that the proposed designation "will prevent continued governmental flood control efforts, thereby significantly affecting nearby farms and ranches, other privately owned land, local economies and public roadways and bridges." The court characterized these impacts as "immediate and the consequences could be disastrous." Further, the court stated that:

"While the protection of species through preservation of habitat may be an environmentally beneficial goal, Secretarial action under ESA is not inevitably beneficial or immune to improvement by compliance with NEPA procedure...The short- and long-term effects of the proposed governmental action (and

even the governmental action prohibited under the ESA designation) are often unknown or, more importantly, initially thought to be beneficial, but after closer analysis determined to be environmentally harmful."

E. Friends of Fiery Gizzard v. Farmers Home Administration, 61 F.3d 501 (6th Cir. 1995)

FACTS: The Farmers Home Administration had prepared an EA for the funding of a water impoundment and treatment project in Tracy City, Tennessee. On the basis of the EA, the agency concluded that the project would have no significant environmental impacts. However, the agency also concluded that "[t]he project will have a positive impact on the living environment of the residents of the area" because they would be "provided with a dependable, sanitary water supply." Id. at 503, quoting the environmental assessment. Plaintiffs sued, claiming that the existence of "significant" beneficial impacts required the preparation of an EIS.

FINDINGS: Affirming the lower court decision, the court held that if an agency reasonably concludes on the basis of an environmental assessment that the project will have no significant adverse environmental consequences, an EIS is not required. Id. at 504-505. The court based its conclusion on its reading of NEPA and the CEQ regulations.

1. One of the central purposes of NEPA is to "promote efforts which will stimulate the health and welfare of man" (citing U.S.C. § 4321). The health and welfare of the residents of Tracy City will not be "stimulated" by the delays and costs associated with the preparation of an EIS "that would not even arguably be required were it not for the project's positive impact on health and welfare." Id. at 505.

2. The CEQ regulations implementing NEPA direct federal agencies to make the NEPA process more useful to decisionmakers and the public, to reduce paperwork and the accumulation of extraneous background data, and to emphasize real environmental issues and alternatives (citing 40 CFR § 1500.2(b)). "It was in keeping with this philosophy that the environmental assessment process was devised to screen projects where the preparation of an expensive and time-consuming environmental impact statement would serve no useful purpose."

3. However, the court did differentiate between projects where the only "significant" impacts were beneficial ones (the Fiery Gizzard case) and projects where there were "significant" beneficial and adverse impacts, that "on balance" the impacts were beneficial:

"This is not to say, of course, that the benefits of the project would justify a finding of no significant impact if the project would also produce significant adverse effects. Where such adverse effects can be predicted, and the agency is in the position of having to balance the adverse effects against the projected benefits, the matter must, under NEPA, be decided in light of an environmental impact statement."

F. Kleppe v. Sierra Club, 427 U.S. 390, S. Ct. 2718, 49 L. Ed. 2d 576, 590 n. 21 (1976).

The only role for a court is to insure that the agency has taken a 'hard look' at environmental consequences; it cannot 'interject itself within the area of discretion of the executive as to the choice of the action to be taken.

EPA's Scoping Comments Regarding The Hellgate RAMP/DEIS (Appendix I)

On February 10, 1994 the U. S. Environmental Protection Agency, Region 10, provided scoping comments to the BLM Medford District Office on the Hellgate RAMP/DEIS. Quotes of portions of its 18 page comment letter follow (see Appendix I for a copy of the full letter).

Cover Letter. *The Environmental Protection Agency has reviewed the Federal Register Notice of intent (NOI) to prepare an Environmental Impact Statement (EIS) for the proposed Wild and Scenic Rogue River's Hellgate Recreation Area Management Plan in Josephine County, Oregon. Our review of the NOI was conducted in accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act."*

Detailed scoping comments are enclosed regarding issues that we believe are significant and should be evaluated in the draft EIS. Our experience has shown that when these environmental concerns are thoroughly evaluated, the EIS is a more meaningful document.

Introduction To Scoping Comments. *The following comments are designed to provide a scope of issues, consistent with EPA's concerns, that will help in the creation of*

management plan environmental impact statements (EISs).

EPA intends for the following issues to be a basis for the full public disclosure of all foreseeable direct, indirect, and cumulative environmental impacts of a given management plan. Clear, in-depth analysis of all relevant issues is a requirement for the preparation of an management plan.

When issued EPA will review this management plan in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and the Clean Air Act. Specifically, Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts associated with all federal draft and final EISs.

Indirect Effects. *The Council of Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA state that the environmental consequences section of an EIS should include: “Indirect effects and their significance (40 CFR 1502.16(b)).” Indirect effects are defined as “...caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.” (40 CFR 1508.(b)) The CEQ regulations also indicate that the EIS should include the “means to mitigate adverse environmental effects.” (40 CFR 1502.16(h)) This provision applies to indirect effects as well as direct effects.*

II. DEIS REFERENCES. The DEIS documented abundant references to elements which are related to impact analysis. These elements could have been used to develop a coherent standard impact methodology for the

Hellgate RAMP/DEIS interdisciplinary team. For example, the glossary and environmental consequences chapter has numerous references to elements of an impact methodology. However, there are also many sections in the environmental consequences that have no identified impact methodology elements. The problem is that the decisionmaker and the public are not informed as to how all the pieces fit into an understandable impact methodology. The primary need is for the DEIS to provide full and fair discussion of significant environmental impacts that inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment (40 CFR 1502.1). The following references are not all-encompassing, but are listed for illustrative purposes.

Glossary

Allocation (carrying capacity) (page 273).
Analysis file (page 274).
Baseline (page 274).
Carrying Capacity (page 276).
Cumulative effect (page 277).
Desired future condition (page 277).
Economic impact area (page 278).
Effects (page 278).
Direct and Indirect Effects (page 278).
Environmental analysis (page 278).
Environmental impact (page 278).
Goal (page 279).
Impact (page 280).
Indicator (used in numerous places in text, but not defined in glossary).
Interdisciplinary team (page 280).
Issue (page 280). *A subject or question of widespread public discussion or interest regarding management of a geographic area, usually identified during scoping and addressed in alternative design. Issues can be unresolved questions about management actions and/or resource use that may have significant or unacceptable environmental impacts.*
Long term (10 years) (page 280). *The period starting 10 years beyond implementation of the revised Hellgate Recreation Area Management Plan.*
Mitigating Measures (page 281). *Actions to avoid, minimize, reduce, eliminate, or rectify adverse impacts of management practices.*
Monitoring/evaluation (page 281).
Noise standards (page 281).
Objectives (page 282).
Plan amendment (page 284).

Planning issue (page 284).
 RMP (page 286). *The revised Hellgate Recreation Area Management Plan will amend and/or tier to the BLM Medford District RMP.*
 Short term (page 287). The time period during which the revised Hellgate Recreation Area Management Plan will be implemented; assumed to be 10 years.
 Socioeconomic impacts (page 287).
 Standard (page 288). *Criteria for measuring fulfillment of goals.*
 Threshold (page 289). *Factors that limit use over time or space, including ecological or resource, physical or space, facility, or social constraints — all of which can fluctuate as social and environmental factors change.*

Environmental Consequences, Chapter 4

1. Natural Scenic Qualities. *Visitor satisfaction is the issue and the indicator. The standard is if the majority of visitors perceived the scenic resource as high quality* (page 189 of DEIS).
2. Fisheries. *Fall chinook have increased over the decades and represent one of the healthiest fisheries in Oregon, if not the world. They are an indicator species in the fisheries analysis of environmental effects* (page 189 of DEIS).
3. Recreation. *The range and quality of available recreational opportunities is the issue and the indicator. The standard is the maintained existence of these recreational opportunities* (page 189 of DEIS).
4. Environmental Effects. *Standards, guidelines, and mitigation measures are intended to keep the extent and duration of these effects within acceptable levels, but adverse effects cannot be completely eliminated* (page 190 of DEIS).
5. Effects on Air Resources — no identified impact methodology (e.g., issue, indicator, and standard) (pages 191 to 192 of DEIS).
6. Effects On Fire — no identified impact methodology (e.g., issue, indicator, and standard) (pages 192 to 193 of DEIS).
7. Effects On Soils — no identified impact methodology (e.g., issue, indicator, and standard) (pages 194 to 196 of DEIS).
8. Effects On Soils — Alternative D — *Although erosion sensitive areas would be identified for special mitigation...*(page 195 of DEIS).
9. Effects On Water — no identified impact methodology (e.g., issue, indicator, and standard) (pages 196 - 197 of DEIS).
10. Effects on Riparian Areas, Wetlands, and Flood Plains — no identified impact methodology (e.g., issue, indicator, and standard) (pages 198 of DEIS).
11. Effects On Fisheries — *Impact indicators include disturbance to redds, eggs, fry, or spawning behavior.* (page 198 of DEIS).
12. Effects On Fisheries — *Impact indicators are used to determine the degree of adverse effects on the fall chinook population.* (page 198 of DEIS).
13. Effects On Wildlife — no identified impact methodology (e.g., issue, indicator, and standard) (page 200 - 206 of DEIS).
14. Effects On Wildlife — General Effects Associated With Recreation — *Data for historical populations of wildlife and disturbance effects caused by recreation on the Hellgate Recreation Area are incomplete or unavailable (40 CFR 1502.22).*(page 200 of DEIS).
15. Effects On Wildlife — Summary of Effects Associated with Recreation — *Since all alternatives allow for recreational disturbance, the key to determining potential impacts is the specific threshold at which disturbance results in wildlife losses. Thresholds for wildlife utilizing the Hellgate Recreation Area have not been identified.*(page 206 of DEIS).
16. Effects On Scenery — Visitors' Perceptions and Satisfaction — *Visitor satisfaction is the issue and the indicator. The standard is if the majority of visitors perceived the scenic quality as high quality.* (page 206 of DEIS).
17. Effects On Motorized Boaters — *The environmental consequences that follows address the impact indicator of the recreational opportunities of motorized tour boat passengers.* (page 206 of DEIS).
18. Effects On Motorized Boaters — Alternative A — *Alternative A has a 36 percent decrease in the per day limits of motorized tour boat trips in the Hellgate Reach when compared to the baseline year 1991.* (page 206 of DEIS).
19. Effects On Nonmotorized Boat Floaters — *The environmental consequences that follow address five impact indicators of the recreational opportunities of nonmotorized floaters.* (page 207 of DEIS).
20. Effects On Nonmotorized Boat Floaters — Alternative A — *Trip Satisfaction. Trip satisfaction for nonmotorized floaters during the summer months in the Dunn Reach is the impact indicator. The standard is if the majority (51 percent or more) of the floaters have an excellent, perfect, very good, or good trip experience...* (page 207 of DEIS).
21. Effects On Nonmotorized Boat Floaters — Alternative A — *Trip Satisfaction. Alternative A also has a large decrease (approximately 30 percent) in the allowed motorized tour boat trips per day in the Dunn Reach from the baseline year...* (page 208 of DEIS).
22. Effects On Nonmotorized Boat Floaters — Alternative A — *Conflicts with Jet Boats. On-river use conflicts between jet boaters and floaters during the summer months in the Dunn Reach is the issue. The projected trips per day and the annual trips of motorized tour boat trips in the Dunn Reach are the impact indicators...* (page 208 of DEIS).
23. Effects On Nonmotorized Boat Floaters — Alternative A — *Trips per Day. The projected motorized tour boat trips per day in the Dunn Reach measured against the number authorized in July and August of 1991 is the standard...* (page 208 of DEIS).

24. Effects On Nonmotorized Boat Floaters — Alternative A — *Trips per Day*. Alternative A has a 30 percent decrease in the limits for trips per day of motorized tour boats in the Dunn Reach when compared to the baseline year... (page 208 of DEIS).
25. Effects On Nonmotorized Boat Floaters — Alternative A — *Annual Trips*. An indicator and standard were identified. (page 208 of DEIS).
26. Effects On Nonmotorized Boat Floaters — Alternative A — *Annual Trips*. A standard is identified. (page 209 of DEIS).
27. Effects On Nonmotorized Boat Floaters — Alternative A — *Carrying Capacity*. An issue, indicator, standard, and carrying capacity were identified. (page 209 of DEIS).
28. Effects On Nonmotorized Boat Floaters — Alternative A — *Limits/Lottery System*. An issue, indicator and standard were identified. (pages 209 - 210 of DEIS).
29. Effects On Nonmotorized Boat Floaters — Alternative A — *Permits and Fees for Private Use*. An issue, indicator and standard were identified. (page 210 of DEIS).
30. Effects On Boat Anglers — Impact indicators and a standard were identified. (pages 214 - 217 of DEIS).
31. Effects On Bank Anglers — Impact indicators and a standard were identified. (pages 217 - 220 of DEIS).
32. Effects On Campers — no identified impact methodology (e.g., issue, indicator, and standard). (pages 220 - 222 of DEIS).
33. Effects On Trail Users — no identified impact methodology (e.g., issue, indicator, and standard). (pages 222 - 223 of DEIS).
34. Effects on Other Recreational Users — no identified impact methodology (e.g., issue, indicator, and standard). (pages 223 - 225 of DEIS).
35. Effects on Visitor Services — no identified impact methodology (e.g., issue, indicator, and standard). (page 225 of DEIS).
36. Effects on Visitor Services — *...and mitigating measures would minimize effects*. (pages 225 of DEIS).
37. Effects on Visitor Services — *However, the traffic would be monitored if traffic increases*. (page 225 of DEIS).
38. Effects on Boating Safety — *The effect methodologies used to estimate effects on boating safety from different management alternatives was derived from the boating safety section of the affected environment (WRC 1995)*. (ages 226 of DEIS).
39. Effects on Boating Safety — *The environmental consequences that follows address one modeled effect indicator, which is safety risk*. (page 226 of DEIS).
40. Effects on Visitor Use — *The 1991 numbers are the base from which the projections were calculated*. (page 227 of DEIS).
41. Effects On Law Enforcement and Emergency Services — no identified impact methodology (e.g., issue, indicator, and standard). (page 227 of DEIS).
42. Effects On Law Enforcement and Emergency Services — Alternative E — *It also establishes carrying capacities for each use that, when reached, trigger more active management mechanism to control use to within manageable limits*. (pages 227 of DEIS).
43. Effects On Outfitter Services — no identified impact methodology (e.g., issue, indicator, and standard). (pages 227 - 228 of DEIS).
44. Effects On Landowners — no identified impact methodology (e.g., issue, indicator, and standard). (pages 228 - 229 of DEIS).
45. Effects On LandOwners — *The environmental consequences that follow address the three indicators for landowners (York, Rowland, and Salley 1994)*. (page 228 of DEIS).
46. Effects On LandOwners — *Sight of River Users. Visual intrusion of float craft would be limited to carrying capacity*. (page 229 of DEIS).
47. Effects On Sound — *The effect methodologies used to estimate*. (page 230 of DEIS).
48. Effects on Transportation — *The flow capacity (highest peak hourly traffic rate) for the Merlin-Galice Road was the indicator used to identify transportation effects (see Table 4-8)*. (page 230 of DEIS).
49. Effects on Transportation — *A maximum total of 2,800 vehicles, peak capacity per hour, in both directions under ideal conditions was adopted as the capacity standard for the Merlin-Galice Road (Highway Capacity Manual)*. (page 231 of DEIS).
50. Effects On Management Costs — no identified impact methodology (e.g., issue, indicator, and standard). (pages 233 - 235 of DEIS).
51. Effects on Management Costs — *“The effect methodologies used to estimate effects on management costs of different management alternatives was derived from the management cost section of the affected environment...”* (page 233 of DEIS).
52. Effects on Management Costs — *“The environmental consequences that follow address four important effect indicators for changes in management costs (see Table 4-11)”* (page 233 of DEIS).
53. Effects on Management Costs — Alternative A — *Change in Services Provided by the Government. “...would reduce monitoring...”* (page 233 of DEIS).
54. Effects on Management Costs — Alternative C — *Change in Services Provided by the Government. “Fall chinook activities would be monitored.”* (page 234 of DEIS).
55. Effects on Management Costs — Alternative E — *Change in Services Provided by the Government. “...would reduce monitoring...”* (page 235 of DEIS).
56. Effects on Gross Revenue — no identified impact methodology (e.g., issue, indicator, and standard). (page 236 of DEIS).

In summary, there is no lack of DEIS references to elements which are related to impact analysis (e.g., 29 glossary citations and 56 examples identified from chapter 4). These elements could have been used to develop a coherent standard impact methodology for the Hellgate RAMP/DEIS interdisciplinary team. However, the problem is that the decisionmaker and the public were not informed as to how all the pieces fit into an impact methodology. The primary need is for the DEIS to provide full and fair discussion of significant environmental impacts that inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment (40 CFR 1502.1). Overall, the DEIS references did not meet this standard.

III. BASIC IMPACT METHODOLOGY MODEL FROM NEPA

The basic impact methodology model is derived from NEPA and from sections described in CEQ's implementing regulations (Appendix B). The requirement is for EISs to be analytic rather than encyclopedic.

- 40 CFR 1501.7 Scoping
- 40 CFR 1502.14 Alternatives including the proposed action
- 40 CFR 1502.15 Affected environment
- 40 CFR 1502.16 Environmental consequences
- 40 CFR 1502.22 Incomplete or unavailable information
- 40 CFR 1508.3 Affecting
- 40 CFR 1508.8 Effects
- 40 CFR 1508.14 Human environment
- 40 CFR 1508.27 Significantly

Step 1. Scoping And Documenting Significant Planning Issues. The standard impact methodology of identifying impacts starts first with the documented significant

issues identified during scoping. Although informative, there need be no documentation in later chapters of an EIS that does not relate to the significant issues identified during scoping. In fact, other documentation is usually not needed and not helpful to the decisionmaker and public in understanding the significant environmental impacts resulting from the alternatives.

An exception would be "clearing the air" statements about process issues and concerns or other legal disclosures and requirements. The reasons for documenting this kind of information should be provided.

Step 2a. Alternatives Including The Proposed Action Designed And Documented Around Significant Planning Issues. The second step of the basic impact methodology model is to design a range of reasonable alternatives around the significant planning issues identified during scoping. The alternatives section is the heart of the environmental impact statement. The no action alternative is the baseline to which the other alternatives are compared. The requirement is to design the alternatives to sharply reflect the issues and provide a clear basis for choice among options by the decisionmaker and the public.

Step 2b. Alternatives Including The Proposed Action Compared And Documented By Impact. A second additional, and just as important, requirement of the alternatives section in the EIS is to present the significant environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. This portion of the alternatives section of an EIS is based on the information and analysis which is later developed in the sections on the

affected environment and environmental consequences sections of the EIS.

Step 2c. Alternatives Including The Proposed Action Considers And Documents Mitigation Measures. The alternatives section should also include appropriate mitigation measures not already included in the design of the proposed action or alternatives.

Step 3a. Affected Environment — Description of Existing Conditions Being Significantly Affected. The third step of the basic impact methodology model is to document the affected conditions being impacted by the alternatives in some significant way. The EIS succinctly describes the environment of the area(s) to be affected or created by the alternatives under consideration. The affected environment is the baseline for comparing the effects of the alternatives. The descriptions should be no longer than is necessary to understand the effects of the alternatives. Data and analyses in a statement should be commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced. Useless bulk should be avoided and EISs should concentrate effort and attention on important issues. Verbose descriptions of the affected environment are themselves no measure of the adequacy of an EIS.

Although informative, there need be no documentation in the affected environment section of an EIS that does not relate to the significant issues identified during scoping (unless new significant issues and impacts beyond those identified during scoping are identified during the analytical analysis process), and the significant impacts identified in the environmental consequences section. In fact, other documentation is usually not needed and not helpful to the decisionmaker and public

in understanding the significant environmental impacts resulting from the alternatives.

Step 3b. Affected Environment -- Incomplete Or Unavailable Information. A second additional, and just as important, requirement of the affected environment section in the EIS is to always make it clear when there is any incomplete or unavailable information relating to any reasonably foreseeable significant adverse effects on the human environment. If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives, and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the EIS.

However, if the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the federal agency shall include within the affected environment section a statement that such information is incomplete or unavailable. The next step in the environmental consequences section will address the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment.

Step 4a. Environmental Consequence -- Identifying And Documenting Significant Impacts The fourth and last step of the basic impact methodology model is to identify the significant environmental consequences of the alternatives. There are several statutory requirements for an EIS to identify significant impacts that are derived directly from NEPA.

- *102(2)(C) of NEPA — Significantly (Section 1508.27)*
- *102(2)(C) of NEPA — Affecting (Sections. 1508.3, 1508.8)*
- *102(2)(C) of NEPA — The quality of the human environment (Section 1508.14)*

The environmental consequences section forms the scientific and analytic basis of the EIS. Any direct, indirect, and cumulative effects from the alternatives and their significance must be analyzed and documented. The discussion will also include the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented. The baseline for the comparison of the impacts resulting from the different alternatives is the "affected environment." In bullet summary, the following types of significant environmental impacts must be analyzed and documented as applicable.

- adverse
- beneficial
- short term
- long term
- direct
- indirect
- cumulative
- irreversible
- irretrievable

Step 4a. Environmental Consequence -- Incomplete Or Unavailable Information.

There is the requirement to always make it clear when there is any incomplete or unavailable information relating to any reasonably foreseeable significant adverse effects on the human environment. If the information relevant to reasonably foreseeable significant adverse impacts could not be obtained because the overall costs of obtaining it were exorbitant or the means to obtain it were not known, the federal agency shall include the following types of statements within the environmental consequences section:

1. that such information is incomplete or unavailable.

2. of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment.
3. summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment.
4. the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

The requirement of estimating significant adverse impacts based upon theoretical approaches or research methods generally accepted in the scientific community is crucial to the credibility of the environmental consequences section. Conclusionary statements do not help decisionmakers and the public understand the tradeoffs of significant environmental impacts, both beneficial and adverse. Bald statements of incomplete or unavailable data does not help either.

What does help toward the goal of an informed decisionmaker and informed public is to make it clear when there is any incomplete or unavailable information relating to any reasonably foreseeable significant adverse effects on the human environment and to estimate those effects by impact methodologies based on theoretical approaches or research methods generally accepted in the scientific

community. Pure conjecture is not within the rule of reason.

Step 4c. Environmental Consequence

Section Considers And Documents

Mitigation Measures. The means to mitigate adverse environmental impacts, if not covered in the alternatives section of the EIS, are to be considered and documented in the environmental consequences section.

Step 4c. Environmental Consequence

Section Includes Documentation Supporting

Analysis Conclusions. One of the NEPA's toughest standards is the requirement to provide the rationale supporting the analysis and conclusion of significant impacts and/or the absence of significant impacts. However, NEPA, CEQ regulations, BLM policy (i.e., NEPA Handbook), CEQ's 40 questions, and court cases are sources that clearly identify the requirement that the EIS describe some methodology(s) (i.e., the assumptions and assessment guidelines) used in analyzing the environmental consequences. This impact methodology information provides the decisionmaker and the public with a basis for understanding and judging the reliability of the impact analysis. These requirements do not demand or require a particular model or impact methodology to be used in estimating significant impacts. The federal agency is given the opportunity to develop impact methodologies to fit the specific on-the-ground conditions. The requirement is only to provide the assumptions and assessment guidelines/impact methodologies that were used to support the analysis and conclusion of significant impacts, and/or the absence of significant impacts. The following criteria are the standards.

- to ensure a logical and coherent record of NEPA compliance.
- to be analytic rather than encyclopedic.

- the analysis of impacts should be quantified to the extent possible.
- clarity of expression, logical thought processes, and rationale explanations.
- complete an objective evaluation of significant environmental impacts.
- find the most efficient method(s) of estimating potential impacts.
- substantive disagreements on interpretations of significance need a response.

A recommended impact methodology (i.e., assumptions and assessment guidelines/impact methodologies) used to support the analysis and conclusion of significant impacts and/or the absence of significant impacts is provided in Part V, "Recommended Impact Methodology."

IV. EVALUATION OF DEIS

Does the Hellgate RAMP/DEIS meet NEPA's requirement that EISs document a complete and objective evaluation of significant environmental impacts, including a logical and coherent record (impact methodology) of how they were derived (see Introduction)? Does the DEIS provide full and fair discussion of significant environmental impacts that inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment? NEPA Design Group's evaluation has two parts: 1. a example list of references improperly applying NEPA principles or not applying them at all, and 2. summary conclusions.

List of Reference Improperly Applying NEPA Principles. The following list of references is not all-encompassing, but is provided for illustrative purposes.

1. Effects on Air Resources — no identified impact methodology (e.g., issue, indicator, and standard). (pages 191 to 192 of DEIS).

2. Effects On Fire — no identified impact methodology (e.g., issue, indicator, and standard). (pages 192 to 193 of DEIS).
3. Effects On Soils — no identified impact methodology (e.g., issue, indicator, and standard). (pages 194 to 196 of DEIS).
4. Effects On Soils — Alternative A — *“Alternative A would cause slightly greater effects than Alternative C...”* (page 194 of DEIS).
5. Effects On Soils — Alternative B — *“Alternative B and the Preferred Alternative have similar effects...”* (page 194 of DEIS).
6. Effects On Soils — Alternative D — *“This proposal allows twice as many boating trips as Alternative B...”* (page 195 of DEIS).
7. Effects On Soils — Alternative D — *Although erosion sensitive areas would be identified for special mitigation...*(page 195 of DEIS).
8. Effects On Soils — Alternative E — *“The Preferred Alternative and Alternative B have similar effects...”* (page 195 of DEIS).
9. Effects On Soils — Recreation Developments — Alternative B — *“The effects resulting from Alternative B would cause greater effects than Alternatives...”* (page 195 of DEIS).
10. Effects On Soils — Recreation Developments — Alternative C — *“Alternative C and the Preferred Alternative would cause greater effects than Alternatives A or B, but less than Alternative D...”* (page 195 of DEIS).
11. Effects On Soils — Recreation Developments — Alternative E — *“The Preferred Alternative and Alternative C would cause greater effects than Alternatives A or B, but less than Alternative D...”* (page 196 of DEIS).
12. Effects On Water — Alternative A — *“Alternative A would cause slightly greater effects than Alternative C...”* (page 197 of DEIS).
13. Effects On Water — Alternative B — *“Alternative B and the Preferred Alternative have similar effects...”* (page 197 of DEIS).
14. Effects On Water — Alternative D — *“This proposal allows twice as many total boating trips as Alternative B or the Preferred Alternative...”* (page 197 of DEIS).
15. Effects On Water — Alternative E — *“The Preferred Alternative and Alternative B have similar effects as they allow the same number of boating trips...”* (page 197 of DEIS).
16. Effects On Fisheries — Boater and Visitor Use by Alternative — *This section includes analysis of each alternative by comparing each alternative projected at year 2007 to current management of 1991 levels.* (page 199 of DEIS).
17. Effects On Fisheries — Boater and Visitor Use by Alternative — Alternative B — *Intensity and duration of adverse effects to fisheries is expected to be the same as Alternative A.*(page 199 of DEIS).
18. Effects On Fisheries — Boater and Visitor Use by Alternative — Alternative C — *Intensity and duration of adverse effects for MTBs, private motorized boats, and boat angling would be expected to be less than Alternative A.* (page 199 of DEIS).
19. Effects On Fisheries — Boater and Visitor Use by Alternative — Alternative D — *Adverse cumulative effects to fisheries would be expected to be higher than Alternative A.* (page 199 of DEIS).
20. Effects On Fisheries — Boater and Visitor Use by Alternative — Alternative E — *Adverse cumulative effects to fisheries would be expected to be the same as Alternative A.* (page 199 of DEIS).
21. Effects On Wildlife — General Effects Associated With Recreation — *Tolerance levels have not been determined for wildlife species in the Hellgate Recreation Area. Data for historical populations of wildlife and disturbance effects caused by recreation on the Hellgate Recreation Area are incomplete or unavailable (40 CFR 1502.22).* (page 200 of DEIS).
22. Effects On Wildlife — Effects on Wildlife Common to All Alternatives — *Alternatives A-E do not propose to introduce new forms of recreation or new seasons of operation, but do differ in the projected number of water craft and visitor use days.* (page 200 of DEIS).
23. Effects On Wildlife — Threatened or Endangered Species — Bald Eagles — *Although the alternatives allow for different levels of disturbance from watercraft, it is not possible to say if these differences would be significant enough to result in different levels of impacts.*(page 202 of DEIS).
24. Effects On Wildlife — Special Status Species — Osprey — *Although the alternatives allow for different levels of disturbance from watercraft, it is not possible to say if these differences would be significant enough to result in different levels of impacts.*(page 203 of DEIS).
25. Effects On Wildlife — Special Status Species — Great Blue Heron — *Although the alternatives allow for different levels of disturbance from watercraft, it is not possible to say if these differences would be significant enough to result in different levels of impacts.* (page 204 of DEIS).
26. Effects On Wildlife — Summary of Effects Associated with Recreation — *However, it is impossible to quantify the potential impacts associated with the various alternatives. Although it can be easily predicted that increased recreation has the potential for resulting in increased disturbance, it is more difficult to predict how this would correspond to potential losses. Since all alternatives allow for recreational disturbance, the key to determining potential impacts is the specific threshold at which disturbance results in wildlife losses. Thresholds for wildlife utilizing the Hellgate Recreation Area have not been identified.* (page 206 of DEIS).
27. Effects On Motorized Boaters — Alternative A — *Alternative A has a 36 percent decrease in the per day limits of motorized tour boat trips in the Hellgate Reach when compared to the baseline year 1991.* (page 206 of DEIS).

28. Effects On Boat Anglers — ? (pages 214 - 217 of DEIS).
29. Effects On Bank Anglers — ? (pages 217 - 220 of DEIS).
30. Effects On Campers — Alternative A — Alternative A was compared with the Preferred AI Effects On Campers at least three times. (page 220 of DEIS).
31. Effects On Campers — Alternative C — was compared with the Preferred Alternative three times. (page 220 of DEIS).
32. Effects on Other Recreational Users — Alternative A — was compared with the Preferred Alternative. (page 223 of DEIS).
33. Effects on Other Recreational Users — Alternative C — was compared with the Preferred Alternative. (page 224 of DEIS).
34. Effects on Other Recreational Users — Alternative D — was compared with the Preferred Alternative. (page 224 of DEIS).
35. Effects on Landowners — Alternative A — *Landowner Satisfaction. The overall effect on peaceful enjoyment is unknown.* (page 228 of DEIS).
36. Effects on Sound — Alternative A — Significance conclusion was based on comparison with Alternative B without documented effects. (page 230 of DEIS).
37. Effects on Sound — Alternative C — Significance conclusion was based on comparison with Alternative B without documented effects. (page 230 of DEIS).
38. Effects on Sound — Alternative D — Significance conclusion was based on comparison with Alternative B without documented effects. (page 230 of DEIS).
39. Effects on Sound — Preferred Alternative — Significance conclusion was based on comparison with Alternative B without documented effects. (page 230 of DEIS).
40. Effects on Transportation— Preferred Alternative —. (pages 230 of DEIS).
41. Effects on Environmental Justice — *The BLM could not discern from available data any use patterns or residential patterns related specifically to low-income or minority populations.* (pages 232 of DEIS).

Evaluation of DEIS

Does the Hellgate RAMP/DEIS meet NEPA's requirement that EISs document a complete and objective evaluation of significant environmental impacts, including a logical and coherent record (impact methodology) of how they were derived (see Introduction)? The evaluation results are a mixed bag, but mostly the deficiencies overwhelmingly outweigh the impact sections that satisfy NEPA's procedural requirements. Nine major problem areas are:

1. Not consistently implementing the purpose of an EIS as it relates to estimating significance.
2. Not consistently using the affected environment as the baseline for comparison of impacts.
3. Not consistently using a standard assumption about short term versus long term impacts.
4. Comparing alternatives instead of comparing impacts to the affected environment.
5. Not consistently using the concept of incomplete or unavailable information.
6. Not consistently applying mitigation.
7. Impacts identified without any conclusions about the significance of the effects.
8. Conclusionary statements about significance without rationale.
9. Not consistently applying monitoring.

There were some notable exceptions which will be covered.

The nine major problem areas follow.

1. Not consistently implementing the purpose of an EIS (40 CFR 1502.1) as it relates to **significance** — An EIS shall provide full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. Agencies shall focus on significant environmental issues and alternatives and shall reduce paperwork and the accumulation of extraneous background data. Statements shall be concise, clear, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses. This standard is not met as evidenced by the next eight problem areas.
2. Not consistently using the **affected environment section as the baseline for comparison of impacts**. The baseline for the comparison of impacts is the affected

environment. *“Affected Environment Page V-18 (required by 40 CRF 1502.10(f); also see 40 CFR 1502.15). This section should describe the components of the human environment including the physical, biological, social, and economic resources and conditions that would be affected by the alternatives considered. Descriptions should be quantified, if possible, and they should be no longer than absolutely necessary to understand the impacts of the alternatives. It is not necessary or desirable to fully describe parts of the environment that would not be affected in a significant way, although they may be noted in an introduction. This section serves as a baseline showing conditions, including trends in those conditions, as they exist prior to the initiation of the proposed action or any alternative.”* (See appendices A - E). There were many sections that did not use this principle.

3. Not consistently using a standard assumption about **short term versus long term** impacts. Short term was defined as, *“The time period during which the revised Hellgate Recreation Area Management Plan will be implemented; assumed to be 10 years.”* (Glossary, page 287 of DEIS). Long term was defined as, *“The period starting 10 years beyond implementation of the revised Hellgate Recreation Area Management Plan.”* (Glossary, page 280 of DEIS).

Many impacts sections identified no year as a baseline; many other impact sections used 1991 as the baseline year and projected to 2007 year. However, the socioeconomic section used 1997 as the baseline and projected to 2007. We think the management costs section used 1994 dollars projected for 2007.

No section projected long term effects as defined by the term’s definition in the glossary. There was no to little consideration concerning the effects of actions from the perspective of future generations in addition to considering

their immediate effects. An analysis of short-term uses of the environment in terms of their effects on long-term productivity or resources and the irreversible and irretrievable commitments of resources resulting from those uses was not seriously considered.

4. A major problem with much of the analysis in the environmental consequences section was **comparing alternatives** instead of comparing impacts to the baseline in the affected environment section, or even worst repeating descriptions of alternatives elements without identifying impacts. The confusion may have resulted from the two requirements of 40 CFS 1502.14, *Alternatives Including the Proposed Action*, and especially the second requirement. However, neither of the two requirements of developing the alternatives change the requirement of using the affected environment section as the baseline for comparing impacts in the environmental consequences section.

The first requirement of 40 CFS 1502.14, *Alternatives Including the Proposed Action*, is to design a range of reasonable alternatives around the significant planning issues identified during scoping. The alternatives section is the heart of the EIS. The requirement is to design the alternatives to sharply reflect the issues and provide a clear basis for choice among options by the decisionmaker and the public. The baseline for comparing alternatives is the no action and/or current management alternative which for the Hellgate RAMP/DEIS is Alternative B.

A second additional requirement of 40 CFS 1502.14, and just as important, is the requirement of the alternatives section in the EIS to present the significant environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. This portion of the alternatives section

of an EIS is based on the information and analysis which is developed in the sections on the affected environment and environmental consequences sections of the EIS. The baseline for comparing the effects in the environmental consequences section is the affected environment.

5. The concept of **incomplete or unavailable information** (40 CFR 1502.22) was incorrectly used in many sections. Either the concept was not used at all, or if it was used, it went only to the point where a statement is documented that information is incomplete or unavailable. No attempt was made in the documentation about the criteria of making: a) a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment; b) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and c) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

6. The term, mitigation, is referenced, but only as it relates to the design of alternatives or generically somehow without specifics. A quote from the EPA follows. *"A comprehensive discussion of proposed mitigation for direct, indirect and cumulative impacts is required by the Council on Environmental (CEQ). Regulations for Implementing the Procedural Provisions of NEPA. The CEQ regulations state that an EIS should include the means to mitigate adverse*

environmental effects and disclose the effectiveness of mitigation measures in minimizing adverse effects (40 CFR 1508.7)." (see comments for pages 14 - 15 of Table 1., NDG's Specific Comments On Chapter 1, and Appendix I). There was no documentation to mitigate any impact identified in Chapter 4. This is theoretically possible if there were no reasonable mitigation measures identified to mitigate chapter 4 impacts, but highly unlikely. What is more likely is that the standard to consider the mitigation of adverse impacts was not applied.

7. There were numerous statements about impacts **without any conclusions about the significance** of the effect. Impacts that do not provide any discussion of significance do not inform decisionmakers and the public of what is important..

8. Conclusionary statements about significance without much or any rationale about why they were or were not significant (i.e., impact statements **without an impact methodology**) was a problem. Bald conclusions without an objective evaluation of significant environmental impacts, including a logical and coherent record (impact methodology) of how they were derived do not help the decisionmakers and the public understand the trade-offs of management actions.

9. Documentation of **monitoring** was modest to nonexistent. There were only three elements in Chapter 1 that had statements about monitoring -- cultural, fisheries, and wildlife and they were so brief as to be just question marks about their monitoring programs. There were other generic statements that monitoring will occur if needed in the future; and there were text sections that suggested monitoring for safety sites of concern, erosion sensitive areas, and traffic. There seemed to be a fear about the unknowns of the "budget" and the costs of monitoring rather than of understanding the

effects of management actions. The treatment of monitoring in the RAMP/DEIS clearly does not meet the standards of NEPA. The Hellgate RAMP/DEIS should include a discussion of monitoring for each resource that was determined to be significant through the scoping process. A properly designed monitoring plan will quantify how well the preferred alternative resolves the issues and concerns identified during scoping. A comprehensive monitoring plan will measure the effectiveness of the mitigation measures to control or minimize potential adverse effects. The RAMP/DEIS should include a discussion of how the three basic types of monitoring (i.e., implementation, effectiveness, and validation) will be used. A monitoring plan should include entities responsible, types of surveys, location and frequency of sampling, parameters to be monitored, indicator species, budget, procedures for using data or results in plan implementation, and availability of results to interested and affected groups. The RAMP/DEIS should describe a feedback mechanism that uses monitoring results to adjust standards and guidelines, best management practices, standard operating procedures, and monitoring intensity at first detection of adverse effects. Providing such a process for adjustment will ensure that mitigation will improve in the future and that unforeseen adverse effects are identified and minimized (see comments for pages 14 - 15 of Table 1., NDG's Specific Comments On Chapter 1, Introduction, and Appendix I).

There were several sections in the environmental consequences section generally meeting NEPA standards.

“Effects on Air Resources” does not use an explicit standard impact methodology that is documented for review by the decisionmaker and the public (pages 191 - 192). However, its method of analysis for documenting projecting air pollution impacts from increased visitor use

(issue) was reasonable. The indicator is the use of maximum average daily traffic projections to project air pollution from motor vehicles, and the standard is a comparison of neighboring Grants Pass and its pollution from a much higher level of motor vehicle use. This method works without explicitly defining an issue, indicator, and standard as the decisionmakers and public can readily understand the importance of the impacts and why they are not significant.

“Effects on Nonmotorized Boat Floaters” used a standard impact methodology that is documented for review by the decisionmaker and the public (pages 207 - 214). It is trackable and can be agreed with or disagreed with by the reader. It used the system of issue, impact indicator, standard (for most indicators) and baseline (affected environment) recommended in Appendix D. Its deficiency is the lack of documentation for the carrying capacity indicator's standard.

“Effects on Transportation” used a standard impact methodology that is documented for review by the decisionmaker and the public (pages 230 - 231). It is trackable and can be agreed with or disagreed with by the reader. It used the system of issue (not stated, but implied as increased visitor use and average daily traffic flow on the Merlin-Galice Road), indicator [(highest peak hourly traffic rate(HPHR))], standard (2,800 HPHR), and baseline (affected environment — 152 HPHR in 1991) recommended in Appendix D.

“Effects on Socioeconomics” used a standard impact methodology that is documented for review by the decisionmaker and the public (pages 231 - 232). It is trackable and can be agreed with or disagreed with by the reader. It used the system of issue (not stated, but implied as increased visitor use), indicator (not stated, but understood as employment and income), and baseline (affected environment —

employment and income in 1997) recommended in Appendix D. Its weakness was not identifying a standard and, therefore, not coming to any conclusions about significance.

V. RECOMMENDED IMPACT METHODOLOGY

The following is NEPA Design Group's recommended impact methodology which it feels could and should be used by all interdisciplinary team members. The recommended impact methodology is based upon significant planning issues identified during scoping and the agency's identification of the range of alternatives (see Part III, Basic Impact Methodology Model From NEPA). It is also based upon the concept of indicators and standards which will be addressed in this section. The most important concept of the impact methodology or "environmental consequences methodology" is that it uses the scientific method - it is not rocket science, but the process is logical, traceable, and subject to agency and public review. The methodology should identify the process to determine whether an impact is significant, or not, and the rationale (threshold) to support the significance determination.

An EIS is intended to provide decisionmakers and the public with a complete and objective evaluation of significant environmental impacts, both beneficial and adverse, resulting from a proposed action and all reasonable alternatives.

An EIS shall provide full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.

Environmental Consequences The five parts of the impact methodology are 1. issue, 2.

impact, 3. indicator, 4. standard, 5. significance determination.

Significant Issue A significant issue is a subject or question of widespread public discussion or interest regarding management of the Hellgate Recreation Area. The impact methodology of identifying significant impacts starts first with the definition of the significant issues during scoping.

Significant Impact A significant impact is a change in the environment which if beyond a certain threshold become important. The components of a significant impact are its indicator, standard, and conclusion.

Effects, impacts, and consequences are synonymous. Effects may be direct, indirect, or cumulative. Impact predictions are compared to identified standards (i.e., maximum/minimum level of effect) beyond which the impacts become significant).

Indicator An indicator is a variable, either singly or in combination with another variable, which is taken as indicative of the condition of the overall issue. An indicator is the specific variable by which impacts are described. A comprehensive description of the indicator(s) are the documented conditions (i.e., affected environment) being impacted by the alternatives in some significant way (see steps 3a and 3b of Part III, Basic Impact Methodology Model From NEPA). The indicators in the affected environment provide a benchmark or baseline for enabling decisionmakers and the public to compare the magnitude and time effects of the alternatives.

Standard A standard is a measurable aspect of an indicator. Setting standards is a judgmental process; however, the process is logical, traceable, and subject to agency and public review (i.e., the scientific method).

A standard is the level, point, or value above which something will take place, or below which it will not take place. A standard provides a base against which a particular condition and/or change can be judged as acceptable or not. Standards or thresholds can be used to determine whether a change in an indicator or impact is significant (either beneficial or adverse).

Significance Determination

A determination of significance requires a consideration of both context and intensity. To determine significance, impact predictions are compared to identified standards (i.e., maximum/minimum level of effect) beyond which the impacts become significant. The standard is the basis for identifying the conclusionary levels of an impact:

- significantly beneficial impact,
- beneficial impact,
- neutral impact,
- adverse impact, and
- significantly adverse impact.