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INTERACTIVE ENVIRONMENTAL IMPACT COMPUTER SYSTEM (EICS). USER MA--ETC(U)
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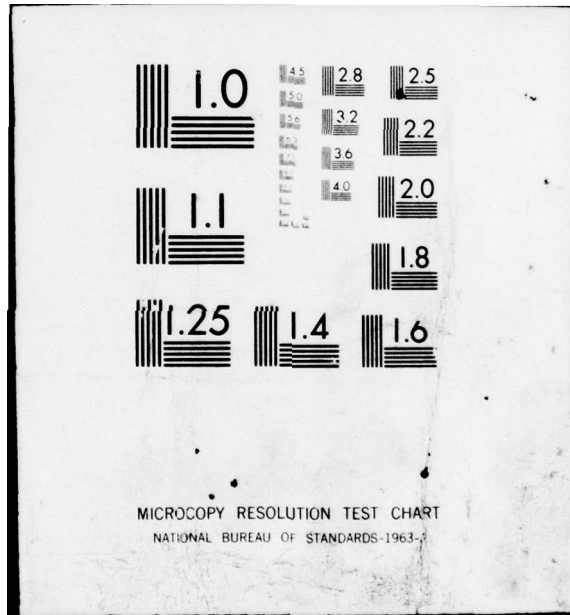
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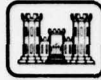


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TECHNICAL REPORT N-80
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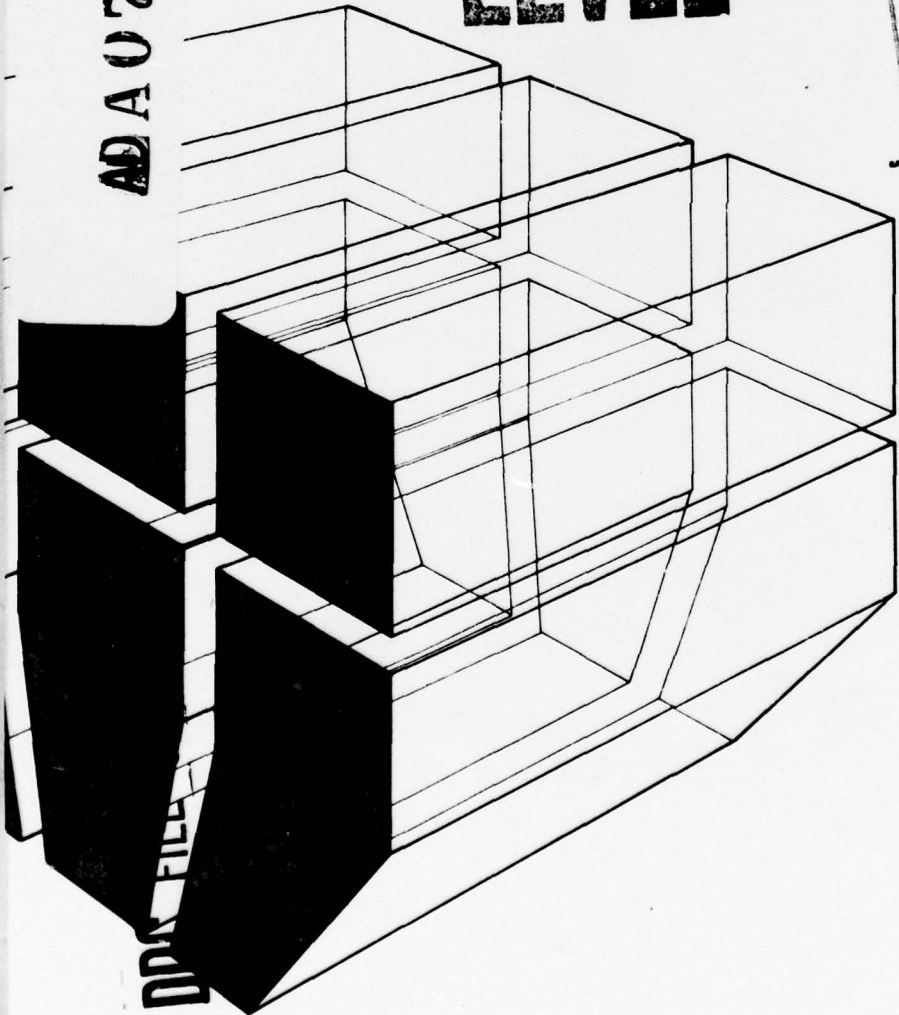
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INTERACTIVE ENVIRONMENTAL IMPACT COMPUTER
SYSTEM (EICS) USER MANUAL

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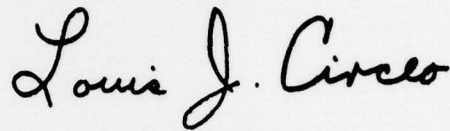


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THIS REPORT DESCRIBES A COMPUTER-BASED SYSTEM WHICH IS IN THE PROCESS OF BEING TRANSFERRED TO AN OPERATING AGENCY FOR PRODUCTION USE, TRAINING, AND MAINTENANCE. HOWEVER, UNTIL THE PROCESS IS COMPLETED CERL HAS BEEN AUTHORIZED TO WORK WITH DOD USERS IN EXTENDING THE FIELD TESTING OF THE SYSTEM. THIS ARRANGEMENT PROVIDES FOR CERL STAFF ASSISTANCE TO THE USER ON A COST REIMBURSABLE BASIS AND ON A STAFF AVAILABLE BASIS. THE DETAILS FOR MAKING SUCH AN ARRANGEMENT ARE DESCRIBED IN THE REPORT.

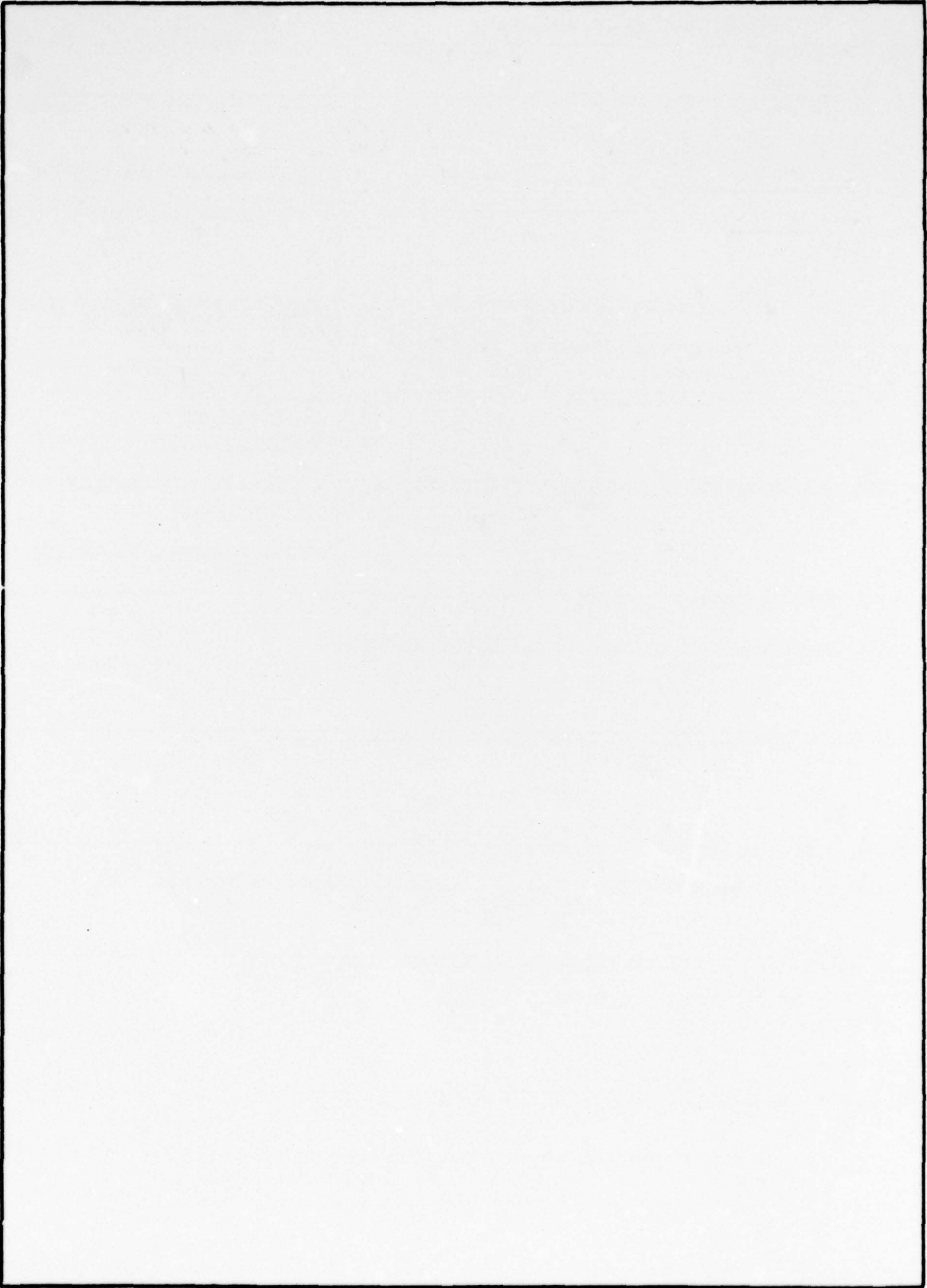
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LOUIS J. CIRCEO
Colonel, Corps of Engineers
Commander and Director

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER 14 CERL-TR-N-88	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (And Subtitle) 6 Interactive Environmental Impact Computer System (EICS) User Manual	5. TYPE OF REPORT & PERIOD COVERED 9 FINAL <i>Report</i>	6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) 10 Robert/Baran R. D./Webster	8. CONTRACT OR GRANT NUMBER(s)	
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. ARMY CONSTRUCTION ENGINEERING RESEARCH LABORATORY P.O. Box 4005, Champaign, IL 61820	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 16 4A762720A896-01-002 17	
11. CONTROLLING OFFICE NAME AND ADDRESS	12. REPORT DATE 11 September 1979	13. NUMBER OF PAGES 24
14. MONITORING AGENCY NAME & ADDRESS (If different from Controlling Office) 12 27	15. SECURITY CLASS. (of this report) Unclassified	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Copies are obtainable from National Technical Information Service Springfield, VA 22151		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) environmental impact statements computer applications		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report describes the Environmental Impact Computer System (EICS) and provides instructions for obtaining and using output for the current interactive version of the system. It is recommended that the instructions be used to obtain the most efficient use of the system.		

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FOREWORD

This project was performed for the Directorate of Military Programs, Office of the Chief of Engineers (OCE), under Project 4A762720A896, "Environmental Quality for Construction and Operation of Military Facilities"; Task 01, "Environmental Quality Management for Military Facilities"; Work Unit 002, "Development of Environmental Technical Information System." The applicable QCR is 1.03.006. Mr. V. Gottschalk, DAEN-MPE, was the OCE Technical Monitor.

This research was made possible through the efforts and support of OCE personnel, consultants from the University of Illinois, and scientists and engineers of the Environmental Division (EN), U.S. Army Construction Engineering Research Laboratory (CERL).

Administrative support and counsel were provided by Dr. R. K. Jain, Chief of EN. COL L. J. Circeo is Commander and Director of CERL, and Dr. L. R. Shaffer is Technical Director.

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INTERACTIVE ENVIRONMENTAL IMPACT COMPUTER SYSTEM (EICS) USER MANUAL

1 INTRODUCTION

Background

The 1969 passage of the National Environmental Policy Act (NEPA),¹ which was intended to insure that the environmental impacts caused by new Federal projects or actions are examined as closely as other technical and economic considerations, placed new responsibilities on Army planners. To respond to these new responsibilities,² the U.S. Army Construction Engineering Research Laboratory (CERL) developed the Environmental Technical Information System (ETIS).³ ETIS is a computerized system that provides information useful in preparing environmental impact assessments and statements (EIAs/EISs). Three major subsystems are currently available: the Environmental Impact Computer System (EICS);⁴ the Computer-Aided Environmental Legislative Data System (CELDS);⁵ and the Economic Impact Forecast System (EIFS).⁶ EIFS

¹National Environmental Policy Act of 1969, 83 Stat 852, 42 USC 4321, et seq. (January 1970).

²Environmental Protection and Enhancement, AR 200-1 (Department of the Army, 7 December 1973).

³R. D. Webster, R. L. Welsh, and R. K. Jain, *Development of the Environmental Technical Information System*, Interim Report E-52/ADA009668 (U.S. Army Construction Engineering Research Laboratory [CERL], April 1975).

⁴L. V. Urban, H. E. Balbach, R. K. Jain, E. W. Novak, and R. E. Riggins, *Computer-Aided Environmental Impact Analysis for Construction Activities—User Manual*, Technical Report E-50/ADA008988 (CERL, March 1975); E. W. Novak and R. E. Riggins, *Computer-Aided Environmental Impact Analysis for Mission Change, Operations and Maintenance, and Training—User Manual*, Technical Report E-85/ADA022698 (CERL, February 1976); *Attribute Descriptor Package*, Technical Report E-86/ADA024303 (CERL, March 1976); S. E. Thomas, R. A. Mitchell, R. E. Riggins, J. J. Fittipaldi, and E. W. Novak, *Computer-Aided Environmental Impact Analysis for Industrial, Procurement, and Research, Development, Test, and Evaluation Activities—User Manual*, Technical Report N-43/ADA056997 (CERL, May 1978).

⁵J. van Weringh, J. Patzer, R. Welsh, and R. Webster, *Computer-Aided Environmental Legislative Data System (CELDS) User Manual*, Technical Report N-56/ADA061126 (CERL, September 1978).

⁶*The Economic Impact Forecast System—Description and User's Instructions*, DA PAM 200-2 (Department of the Army, December 1976).

and CELDS are available to field and headquarters personnel either through CERL or via direct use on an interactive basis. The original version of EICS was oriented toward batch operation, in which the system user sent input and received output by mail. However, user acceptance of the Interactive EIFS and CELDS made the advantage of an interactive EICS apparent, and reprogramming of EICS was begun.

Objective

The objective of this report is to provide DA environmental personnel with the information needed to use the interactive EICS.

Approach

The same matrix format used in the original batch version of EICS was used for the interactive version. User output was broken into smaller units, filtering mechanisms were made interactive, and the system was implemented into the existing ETIS shell.

Chapter 1 discusses the background of EICS and the objectives of this report. Chapter 2 discusses the use of EICS output. Chapter 3 discusses the procedures to obtain EICS output interactively, and Chapter 4 contains the conclusions and recommendations.

Mode of Technology Transfer

The information in this report will be issued as a DA Pamphlet in the 200 series and as the module called EICS in the remote terminal ADP system entitled Environmental Technical Information System (ETIS).

2 EICS DESCRIPTION AND EXAMPLE

System Description

EICS enables a user to determine how an Army action may affect various aspects of the environment. System documentation includes assistance in addressing these effects in an EIA/EIS. Output is provided in matrix format. The matrix describes the complex relationships between the two basic elements of EICS: Functional Areas and Environmental Technical Specialties.

EICS considers nine broad areas (Functional Areas) of Army military activities: Construction; Mission Change; Operations and Maintenance; Training; Industrial; Research, Development, Test, and Evaluation; Procurement; Real Estate; and Decision/Policy-Making.

Environmental considerations for each of these nine Functional Areas are classified into 13 Technical Specialties, broad categories which define and categorize environmental attributes*: Ecology, Health Science, Air Quality, Surface Water, Groundwater, Sociology, Economics, Earth Science, Land Use, Noise, Transportation, Aesthetics, and Energy and Resource Conservation. Intersections within the detailed matrix are identified with indicators of "need-to-consider" for the potential impact of an Army activity on an environmental attribute.

The Functional Areas are further broken down into basic Army activities and programs (BAAPs). These BAAPs are compared to the environmental attributes in each Technical Specialty, using a "need-to-consider" scale which indicates the probability of impact occurrence, rather than the potential magnitude of the impact. Keyed to the BAAPs are Ramification Remarks and Mitigation Statements. Ramification Remarks explain why the BAAPs were scored in the matrix as they were and typically address differing degrees of impact. The Mitigation Statements describe ways to decrease or avoid a specific impact.

The user has the option of obtaining output at *two levels*: review and detailed. The *review level* contains attributes that give an overview of the nature of potential impacts (see Figure 1). This level is used primarily to assist reviewers of completed EIAs and EISs and to aid in selecting the best environmental alternative from numerous alternative actions. The *detailed level*, which is generally used to help prepare major EISs, contains the more specific attributes of a Technical Specialty (Figure 1). *Controversial* attributes, which are presented at both levels, are attributes that are controversial in nature, whether or not the actual impact is scientifically significant.

To make the output more site-specific, the user completes an input form and answers a series of filter questions for each Technical Specialty. (The following example provides instructions for completing the current Mission Change input form.) This information is then either sent to CERL, where it is processed, or retrieved interactively by the user. (An operating agency has not been designated. CERL is providing limited usage as part of the R&D effort, until designation is complete.) Chapter 3 provides instructions for using and accessing EICS.

*Environmental variables or characteristics.

Ecology Review-Level Attributes

1. Natural Setting
2. Game Animals
3. Game Fish
4. Rare or Endangered Species
5. Increase in Undesirable Species

Ecology Detailed-Level Attributes

18. Food Webs
19. Productivity
20. Seasonal Aspect
21. Stratification
22. Successional Stage
23. Small Game Hunting
24. Waterfowl Hunting
25. Big Game Hunting
26. Bottom Life
27. Warm Water Fishing
28. Cold Water Fishing
29. Large Lake Fishing
30. Coastal Water Fishing
31. Shellfish
32. Deep-Sea Fishing
33. Disease Vectors
34. Noxious Weeds
35. Other Undesirable Species

Ecology Controversial Attributes

- 10.(41*) Impacts on Game Animals
- 11.(42*) Encroachment on Natural Habitat
- 11.(43*) Threatened Species

Figure 1. The EICS attribute levels.

Example

The following example has been developed so that the potential user can understand the simplicity of using EICS and determine the potential value of the output for a particular problem. The example, called "Modification of the Mission of the Sunny Point Military Ocean Terminal," addresses a real location and logical, but totally fictitious, actions. Sunny Point, which is located on the coastal plain in North Carolina, is being used as an Army shipping terminal. There currently is no active training at the site. With the help of EICS, two hypothetical alternatives will be investigated: (1) moving a small Army unit to Sunny Point for training in amphibious assaults and operations in the marshland areas, and (2) locating an Army logistics orientation school, which primarily involves classroom training, at Sunny Point.

Completion of the following steps will insure rapid access to and effective use of EICS.

a. *Obtain Essential User Manuals.* CERL points of contact are Dr. Harold Balbach or Dr. Edward Novak of the Environmental Division at Commercial (217) 352-6511 or FTS 958-7299, 7286, or 7011. Users will need the documents and user manuals to use the system effectively; they are available from National Technical Information Service, CERL or the operating agency will generally assess how extensively the EICS will be used for each project and will determine any necessary reimbursement for assistance.

b. *Specify EICS Functional Area Requirements.* After initial telephone conversations with CERL researchers and a general review of the EICS user manuals, the user will determine which Army Functional Areas (e.g., Construction, Training, Mission Change) should be accessed for his/her project. For example, in the case of the Sunny Point alternatives, the user has determined that the Mission Change Functional Area will best meet project needs.

c. *Complete EICS Functional Area Input Forms.* The EICS user manuals (CERL Technical Reports E-50, E-85, and N-43) provide instructions for completing the input forms. (The interactive procedure requests the same information in slightly different order and format; it is recommended that you use the input form to summarize your project even if your access will be entirely through the computer terminal.) For example, for the Sunny Point alternatives, the user chooses to complete two sets of Mission Change input forms from CERL TR E-85, one form for each of the alternatives (Figures 2a and 2b). The user completes the following portions of the Mission Change input forms:

1-3. The user completes the standard, self-explanatory information asked for. Note: if FTS access is possible, users should include both their commercial and FTS phone numbers. CERL cannot use Autovon.

4. The user labels the geographical site on which the activity will be performed with a number or a descriptive name.

5. This section, which contains the "BAAP Filtering Mechanism," varies slightly among Functional Areas. In the case of Mission Change, the user responds to three questions (called prefilter or program or subprogram questions) which are found in the User Manual (CERL Technical Report E-85). The first question

asks if this is a realignment of military forces (Answer A) or a change in support function only (Answer B). The second question is concerned with whether this realignment will increase military strength (Answer A), decrease strength (Answer B), or generate both increases or decreases (Answer C). The third question involves changes in support functions. The user determines if this change will require: (a) more support in the form of civilian employees, housing, etc., (b) less support in the form of civilian employees, housing, etc., or (c) more support in some areas and less support in others. Answering these questions accurately will allow EICS to determine which activities involved in a mission change should be examined by the user.

6A and 6B. In 6A, the user selects the environmental Technical Specialties for which he/she desires output, and then records the total number of specialties selected in part 6B. For example, the Sunny Point user has elected to receive output only from the Ecology Technical Specialty Area of EICS. (Interactive access allows retrieval of only one Technical Specialty at a time.)

7. A user who wants an explanation of the impacts on his/her matrix and ways to mitigate those impacts may request the Ramifications and Mitigations text (Figure 3). These statements are presently available only through CERL and are not available interactively.

8. The user elects to review both the detailed- and the review-level matrices.

9. Not on input form at this time.

10. Since the user has selected only the Ecology Technical Specialty from which to receive output, he/she need only answer the 14 Ecology filter questions to complete the input form (Figure 4). As shown in Figures 2a and 2b, answers to the filter questions for the two alternatives are significantly different.

d. *Request Output.* EICS output may be obtained either by (1) mailing the completed input form to CERL, or (2) obtaining output via remote terminal (see Chapter 3). If a remote terminal is used, completing the input form will decrease the time required for inputting the information.

e. *Receive Output.* If the user has mailed or phoned in the answers to the filter questions, he/she will receive output from CERL by mail within 1 to 2 weeks. However, using the interactive mode will enable the user to obtain output within minutes.

INPUT FORM NUMBER 2 - MISSION CHANGE FUNCTIONAL AREA A

1. PROJECT NAME: Unit Training

2. INSTALLATION: _____

3. RESPONDENT'S NAME: _____
 ADDRESS: _____ TEL. NO. _____

4. ENVIRONMENTAL INFORMATION FOR SITE: _____

5. BAAP FILTERING MECHANISM ANSWERS:

1	2	3
A	A	A

7. PRINT RAM-MIT TEXT: X

8. DETAIL OR REVIEW LEVEL? Detailed

6d. NUMBER OF TECHNICAL SPECIALTIES: 1

- 6a. TECHNICAL SPECIALTIES REQUESTED:
- ECOLOGY X
 - ENV. HEALTH _____
 - AIR QUALITY _____
 - SURFACE WATER _____
 - GROUND WATER _____
 - SOCIOLOGY _____
 - ECONOMICS _____
 - EARTH SCIENCE _____
 - LAND USE _____

10. ANSWERS TO FILTER QUESTIONS ABOUT THIS SITE

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ECOLOGY	/	/	/	3	/	/	2	2	/	/	/	/	7	/	/
ENV. HEALTH															
AIR QUALITY															
SURFACE WATER															
GROUND WATER															
SOCIOLOGY															

INPUT FORM NUMBER 2 - MISSION CHANGE FUNCTIONAL AREA B

1. PROJECT NAME: Logistics Orientation

2. INSTALLATION: _____

3. RESPONDENT'S NAME: _____
 ADDRESS: _____ TEL. NO. _____

4. ENVIRONMENTAL INFORMATION FOR SITE: _____

5. BAAP FILTERING MECHANISM ANSWERS:

1	2	3
A	B	C

7. PRINT RAM-MIT TEXT: X

8. DETAIL OR REVIEW LEVEL? Detailed

6d. NUMBER OF TECHNICAL SPECIALTIES: 1

- 6a. TECHNICAL SPECIALTIES REQUESTED:
- ECOLOGY X
 - ENV. HEALTH _____
 - AIR QUALITY _____
 - SURFACE WATER _____
 - GROUND WATER _____
 - SOCIOLOGY _____
 - ECONOMICS _____
 - EARTH SCIENCE _____
 - LAND USE _____
 - NOISE _____
 - TRANSPORTATION _____
 - AESTHETICS _____
 - ENG. & RES. CONS _____

10. ANSWERS TO FILTER QUESTIONS ABOUT THIS SITE

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ECOLOGY	2	2	2	1	4	3	3	3	3	/	/	/	3	3	
ENV. HEALTH															
AIR QUALITY															
SURFACE WATER															
GROUND WATER															
SOCIOLOGY															
ECONOMICS															
EARTH SCIENCE															
LAND USE															
NOISE															
TRANSPORTATION															
AESTHETICS															
ENG. & RES. CONS															

- a. For unit training alternative
- b. For logistics orientation alternative

Figure 2. EJCS input forms for the Sunny Point, NC, alternative actions.

- 2 1 2131
- 2141 /RAMIFICATIONS/
INCREASED NUMBERS OF TROOPS OR VEHICLES IN MOVEMENT, PARTICULARLY IN RELATIVELY REMOTE AREAS, WILL INCREASE THE LIKELIHOOD OF DESTRUCTION OF HERBACEOUS AND SHOUBRY VEGETATION WHICH PROVIDES HABITAT FOR NUMEROUS SMALL MAMMALS, BIRDS, AND REPTILES, AND WHICH INFLUENCES THE RATE AND QUALITY OF SURFACE RUNOFF. TROOP INCREASES OF 50% OR MORE ARE MOST IMPORTANT. PROBLEMS OF SANITATION AND LITTERING WILL ALSO INCREASE.
- 2142 /MITIGATIONS/
MOVEMENT SHOULD BE RESTRICTED TO DESIGNATED AND MARKED ROUTES AND AREAS. CONSIDERATION SHOULD BE GIVEN TO PERMANENT IMPROVEMENT OF HEAVILY-USED ROUTES. PROVISIONS FOR COLLECTION OF SANITARY AND SOLID WASTE SHOULD BE INCREASED PROPORTIONATELY.
- 2143 /RAMIFICATIONS/
OPENING NEW AREAS TO TROOP OPERATIONS WILL CAUSE IMPACTS ON THE ECOSYSTEM, PARTICULARLY WHERE THE AREA CHOSEN HAS BEEN RELATIVELY UNDEVELOPED. SOME VEGETATION WILL ALWAYS BE DESTROYED OR DAMAGED, AFFECTING ANIMALS BY REDUCING POTENTIAL SHELTER AND BEING ANIMALS CAN SHY OR RARE ANIMAL SPECIES WILL TEND TO LEAVE TERRITORIES INTO WHICH THEY MOVE. SMALLER ANIMALS MAY BE AFFECTED ONLY VERY SLOWLY OR MAY DIE. IMPACTS WILL BE PROPORTIONAL TO THE NUMBERS, FREQUENCY, AND DURATION OF SUCH NEW OPERATIONS.
- 2144 /MITIGATIONS/
SURVEY PROPOSED AREAS OF USAGE TO DETERMINE RELATIVE ECOLOGICAL VALUE. USE FIRST THOSE AREAS OF AVERAGE OR LOWER VALUE. NEW ROUTES SHOULD AVOID CRITICAL WATER ROUTES AND KNOWN HABITAT OF RARE OR ENDANGERED SPECIES.
- 2145 /RAMIFICATIONS/
CHANGING THE TIME OF TROOP OR VEHICLE MOVEMENT FROM DAY TO NIGHT WILL INTERRUPT NOCTURNAL ANIMALS WHICH ARE NOW FULLY INACTIVE DURING THE DAY, BUT MAY HELP ANIMALS WHICH ARE ACTIVE IN DARKNESS. CHANGING OPERATION TIME TO A DIFFERENT SEASON OR FOR PLANTS WHOSE FRUITS OR SEEDS RIPEN AT IMPORTANT ANIMAL REPRODUCTION TIMES IN RAINY CONDITIONS MAY INCREASE LIKELIHOOD OF REPRODUCTION DUE TO SOIL INSTABILITY, AND POSITION OF ITS EFFECTS WILL BE INCREASED AS WELL. OPERATIONS IN CRITICAL PERIODS OR DURING SEASONS CAN CAUSE RIPS AND SMALL ANIMALS TO FAIL TO MATE OR TO ABANDON THEIR NESTS OR YOUNG.
- 2146 /MITIGATIONS/
CHANGES IN TIME OF DAY RESULT IN SOME INAVOIDABLE IMPACTS. CHANGE OF SEASON SHOULD BE PLANNED TO AVOID ACTIVITIES IN THE CRITICAL PERIODS OF REPRODUCTIVE CYCLES. DETERMINATION OF CRITICAL PERIODS WILL REQUIRE CONSULTATION WITH LOCAL STATE CONSERVATION SERVICE, BOTANISTS, AND WILDLIFE BIOLOGISTS. SOIL CONSERVATION SERVICE PERSONNEL CAN DETERMINE WHICH SOILS MAY BE MOST READILY ERODED IN WET SEASON OPERATIONS.
- 2147 /RAMIFICATIONS/
INCREASED FREQUENCY OR DURATION OF GROUND OPERATIONS ACTIVITIES WILL INCREASE ALL EFFECTS DUE TO VEGETATION DESTRUCTION: THE ACTUAL LOSS OF VEGETATION PATTERNS. INCREASES OF 50% OR MORE ARE MOST IMPORTANT. PROBLEMS OF SANITATION AND LITTERING WILL ALSO INCREASE.
- 2148 /MITIGATIONS/
MOVEMENT SHOULD BE RESTRICTED TO DESIGNATED AND MARKED ROUTES AND AREAS. CONSIDERATION SHOULD BE GIVEN TO PERMANENT IMPROVEMENT OF HEAVILY-USED ROUTES. PROVISIONS FOR COLLECTION OF SANITARY AND SOLID WASTE SHOULD BE INCREASED PROPORTIONATELY.
- 2149 /RAMIFICATIONS/
REASONS WITH MUCH GREATER DESTRUCTIVE POWER WILL PRODUCE GREATER VEGETATION DESTRUCTION, WITH EFFECTS ON ANIMAL POPULATIONS DEPENDENT ON THAT VEGETATION FOR FOOD AND SHELTER. PARTICULARLY IMPORTANT SHOULD BE INTRODUCTION OF DYNAMITE, ROCKETS AND OTHER FIRE HAZARDS.
- 2150 /MITIGATIONS/
IMPACTS ARE GENERALLY UNAVOIDABLE.
- 2151 /RAMIFICATIONS/
CONVERSION TO IMPACT AREA OR FIRING RANGE STATUS OF AREAS THAT HAVE NOT PREVIOUSLY BEEN USED FOR THAT PURPOSE WILL PRODUCE IMPACTS RANGING FROM MINOR TO SEVERE. THE SEVERITY OF IMPACT WILL DEPEND ON THE PREVIOUS CONDITION OF THE AREA AND THE AMOUNTS AND KINDS OF WEAPONS USED. MOST EFFECTS WILL BE DUE TO VEGETATION (HABITAT) DESTRUCTION. SOME INCREASES IN INSECT PESTS COULD BE CAUSED BY LARGE CATERPILLARS LEFT UNFILLED AFTER SHELLING WHICH COLLECTOR DRAINING WATER. NOISE EFFECTS HAVE THE POTENTIAL TO DISTURB NESTING OR BREEDING OF ANIMALS AND BIRDS, AND MAY INFLUENCE SURFACE ANIMALS TO EMIGRATE. FIRE HAZARD AND EROSION EFFECTS WILL BE CONSIDERABLY GREATER.
- 2152 /MITIGATIONS/
SURVEY PROPOSED IMPACT AREAS TO DETERMINE RELATIVE ECOLOGICAL VALUE. USE PREFERENTIALLY THOSE AREAS OF AVERAGE OR LOWER VALUE. AVOID USE OF AREAS CLOSE TO KNOWN WATER BODIES, KNOWN HABITAT OF RARE OR ENDANGERED SPECIES, AND AREAS WITH CRITICAL SLOPE (AVERAGE GREATER THAN 7% SLOPE) GREATER THAN 75% OR UNSTABLE SOILS AS DETERMINED BY SOIL CONSERVATION SERVICE PERSONNEL.
- 2153 /RAMIFICATIONS/
CHANGING HEAVY WEAPONS FIRING TO A RAINY SEASON WILL INCREASE EROSION POTENTIAL, AS WELL AS THE SEDIMENT LOAD IN STREAMS THAT DOES OCCUPY, AFFECTING AQUATIC LIFE IN WATER BODIES. REPEATED BOMBING CHANGING THE FIRING TO AN EXTREMELY DRY SEASON WILL INCREASE FIRE DANGER. CHANGING TIME OF FIRING FROM ANIMAL OR BIRD BREEDING OR NESTING SEASON WILL DISTURB THE PRODUCTION OF YOUNG AND, BY DESTROYING ACTUAL OR POTENTIAL FOOD PLANTS, CAN STRAIN THE ENVIRONMENT'S ABILITY TO SUSTAIN THESE YOUNG ANIMALS.
- 2154 /MITIGATIONS/
CHANGE OF FIRING TIMES TO WET OR DRY SEASONS WILL PRODUCE PERMANENT CHANGE, WHICH IS GENERALLY UNAVOIDABLE. TEMPORARY CHANGES SHOULD BE MADE TO AVOID SUCH SEASONS AS MUCH AS POSSIBLE. CHANGE TO WET SEASONS FIRING MAY REQUIRE AVOIDANCE OF AREAS WITH CRITICAL SLOPE OR UNSTABLE SOILS AS INDICATED BY SOIL CONSERVATION SERVICE. LOCAL STATE, OR FEDERAL FORESTERS, BOTANISTS, AND WILDLIFE BIOLOGISTS SHOULD BE CONSULTED TO DETERMINE CRITICAL REPRODUCTIVE PERIODS TO BE AVOIDED. IF INCREASED WEAPONS USAGE (HEAVILY USED) RESULTS IN INCREASED FREQUENCY OR DURATION OF FIRING, IMPACTS WILL BE EQUIVALENT.
- 2155 /RAMIFICATIONS/
INCREASED FREQUENCY OR DURATION OF GROUND OPERATIONS ACTIVITIES WILL INCREASE ALL EFFECTS DUE TO VEGETATION DESTRUCTION: THE ACTUAL LOSS OF VEGETATION, DESTRUCTION OF FOOD AND HABITAT, AND DISTURBANCE OF SURFACE WATER PATTERNS. INCREASES OF 50% OR MORE ARE MOST IMPORTANT.
- 2156 /MITIGATIONS/
SOME DEGREE OF IMPACT IS GENERALLY UNAVOIDABLE.

Figure 3. Ramification and mitigation remarks for ecology/mission change functional area matrices.

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2244 /P/ARTICIPATIONS/
 INCREASED LOADS ON SEWAGE SYSTEMS THAT DO NOT PRESENTLY HAVE TERTIARY TREATMENT WILL INCREASE THE LIVELIHOOD OR SEVERITY OF CONTAMINATION OF GROUND OR SURFACE WATER, STREAMS, OR LAKES, WITH RESULTING DISTURBANCE TO AQUATIC ECOSYSTEMS. INCREASED LOADS ON ALL TYPES OF SEWAGE SYSTEMS WILL INCREASE CHANCES OF NUTRITIONAL IMBALANCE IN RECEIVING WATER BODIES, WITH RESULTANT EUTROPHICATION, ALGAL BLOOMS, ETC.

/MITIGATIONS/
 IMPACTS OF CONTAMINATION WILL BE UNAVOIDABLE WHERE PRESENT TREATMENT IS NOT TERTIARY. CONVERSION TO TERTIARY TREATMENT MAY BE NECESSARY AND IS HIGHLY RECOMMENDED WHERE INCREASED LOAD PRODUCES EXCEEDING THE CAPACITY OF A PRESENT PRIMARY OR SECONDARY SYSTEM. IMPACTS OF NUTRITIONAL IMBALANCE ARE UNAVOIDABLE WITH ALL TREATMENT SYSTEMS IN WHICH DISCHARGE INTO NATURAL WATER BODIES OCCURS.

2245 /P/ARTICIPATIONS/
 INCREASED VOLUMES OF REFUSE TO BE DISPOSED IN DUMPS OR LANDFILLS WILL INCREASE THE INCIDENCE OF ANIMAL PESTS ATTRACTED TO REFUSE, SUCH AS RATS, MICE, RACCOONS, SKUNKS, BEARS, SNAKES, AND INSECTS, AS WELL AS UNDESIRABLE WEEDS WHICH THRIVE ON DISTURBED SOIL.

/MITIGATIONS/
 IN REFUSE LOAD SHOULD BE HANDLED BY APPROVED SANITARY LANDFILL COVERED WITH NATIVE GRASSES WITHIN 7 DAYS IN SPRING OR SUMMER AND WITHIN 3 WEEKS IN AUTUMN OR WINTER.

2246 /P/ARTICIPATIONS/
 DECREASE IN REFUSE DISPOSAL WILL HAVE A NEGATIVE EFFECT ON THOSE ANIMALS WHICH FIND SHELTER AND FOOD AVAILABLE IN DUMPS OR NEAR LANDFILLS, SUCH AS RODENTS, RACCOONS, SKUNKS, BEARS, AND SNAKES. ALTHOUGH THESE ANIMALS ARE OFTEN CONSIDERED PESTS BY MAN, THEY ARE ALSO PART OF FOOD WEBS IN NATURE.

2247 /P/ARTICIPATIONS/
 IMPACTS RESULTING FROM REDUCED REFUSE DISPOSAL ARE UNAVOIDABLE IN TERMS OF HUMAN VALUES, MOST OF THESE IMPACTS ARE POSITIVE.

/P/ARTICIPATIONS/
 CONSTRUCTION OF NEW FACILITIES WILL PRODUCE THOSE PROBLEMS REVIEWED UNDER THE CONSTRUCTION FUNCTIONAL AREA. THESE INCLUDE SUCH ITEMS AS NEARBY STREAMS OR LAKES, AND ACCIDENTAL DISTURBANCE DUE TO OCCURRENCE OF SURFACE DRAINAGE OR FLOODING, VIBRATION, AND ACCOMPANYING DESTRUCTION OF VEGETATION, AND SPOILING OF FISH AND WILDLIFE HABITATS. THESE ARE NOT UNUSUAL AND, SINCE THEY OCCUR IN AREAS AT THE EDGE OF CLEARINGS, ENCROACHMENT ON TERRITORY OF RARE OR ENDANGERED SPECIES, INTRODUCTION OF WEEDS, AND INCREASE IN ANIMAL PESTS, THESE IMPACTS ARE LESS LIKELY OR OF LESSER IMPORTANCE IN MANY CASES, WHERE SUCH CONSTRUCTION IS TO OCCUR IN ALREADY-DISTURBED AREAS.

/MITIGATIONS/
 MITIGATIONS FOR PARTICULAR CONSTRUCTION ACTIVITIES CAN BE FOUND UNDER THE CONSTRUCTION FUNCTIONAL AREA. CONSTRUCTION SHOULD BE RESTRICTED IF POSSIBLE TO AREAS WHICH HAVE ALREADY BEEN DISTURBED. PREVIOUSLY UNDISTURBED AREAS SHOULD BE SURVEYED TO DETERMINE RELATIVE ECOLOGICAL VALUE. USE FIRST THOSE AREAS OF AVERAGE OR LOWER VALUE.

2248 /P/ARTICIPATIONS/
 DEMOLITION OF FACILITIES MAY RESULT IN A FEW TEMPORARY EFFECTS SUCH AS UNUSUAL DEBRIS, INCREASED SEDIMENT LOADS IN NEARBY STREAMS DUE TO EROSION EFFECTS, AND INTRODUCTION OF OR INCREASE IN WEEDY PLANTS OR ANIMAL PESTS.

/MITIGATIONS/
 DEBRIS SHOULD BE CLEARED AS IT ACCUMULATES, AND DISTURBED SOIL REPLANTED WITH GRASS COVER WITHIN 7 DAYS EVEN IF ALL WORK HAS NOT BEEN COMPLETED. DISTURBED AREAS ADJACENT TO WATER BODIES SHOULD UTILIZE SEDIMENT CONTROL MEASURES DURING DEMOLITION.

Figure 3. (cont'd).

1. Do any changes in military function involve changes in field training as opposed to classroom training?
 - (1) Yes
 - (2) No
2. Does this mission change involve any new construction?
 - (1) Yes
 - (2) No
3. Will any areas be used that have not previously been employed for training or support activities?
 - (1) Yes
 - (2) No
4. Which of the following statements best describes any areas which have previously been used for training or support activities and in which the intensity of these activities will increase?
 - (1) Extensively modified by construction, grading, paving, landscaping, etc.
 - (2) Regularly used by men, vehicles, and/or weaponry for field training for more than 20 days per year during at least two of the last five years.
 - (3) Infrequently and lightly used by men, vehicles, and/or weaponry for field training. Average usage for each of the last 10 years has been 10 days or less.
 - (4) No increase.
5. Measuring distances downstream or downslope, how far are any newly used areas, or any existing areas in which intensity of field activities or support use will increase, from the nearest perennial stream or permanent, year-round lake, pond, or freshwater marsh with permanent open water? (If more than one area is involved, choose the shortest measured distance from any area.)
 - (1) Less than 300 meters (about 100 ft)
 - (2) 300 to 1000 meters (about 6/10 mile)
 - (3) Greater than 1000 meters
 - (4) No new areas and no increase
6. Measuring distances downstream or downslope, is any newly used area, or any area having increased field activity or support use less than 2500 meters (about 1.5 miles) from the nearest year-round stream, pond, or small lake?
 - (1) Yes
 - (2) No
 - (3) No new areas and no increase
7. Measuring distances downstream or downslope, is any newly used area, or increased field activity or support use less than 8000 meters (about 5 miles) from any body of water known to support trout or salmon at any time of the year?
 - (1) Yes
 - (2) No
 - (3) No new areas and no increase
8. Measuring distances downstream or downslope, is any newly used area, or any area having increased field activity or support use less than 8000 meters (about 5 miles) from a large, deep freshwater lake having a surface area of more than 50 sq km (about 12,000 acres) and a depth of more than 50 meters (about 160 ft)?
 - (1) Yes
 - (2) No
 - (3) No new areas and no increase
9. Measuring distances downstream or downslope, is any newly used area, or any area having increased field activity or support use less than 8000 meters (about 5 miles) from any ocean beach, estuary, salt marsh, or tidal flat?
 - (1) Yes
 - (2) No
 - (3) No new areas and no increase
10. Is hunting upland game (birds and small mammals) permitted by law at any time in any area which touches the installation's perimeter or is hunting for these species permitted anywhere on the installation?
 - (1) Yes
 - (2) No
11. Is hunting big game (deer, bear, elk, etc.) permitted by law in any area within 2500 meters (about 1.5 miles) of the installation's perimeter, or is hunting for these species allowed anywhere on the installation?
 - (1) Yes
 - (2) No

Figure 4. Ecology filter questions for the mission change functional area of EICS.

12. Are migratory waterfowl (ducks and geese) hunted in any area within 2500 meters (about 1.5 miles) of the installation's perimeter, or may they be hunted at any time on the installation, or are they known to congregate in groups of more than one dozen at any time of year within the area described here?

- (1) Yes
- (2) No

13. Which of the following responses best characterizes any area in which activities associated with mission change may take place, and which has not previously been used for training or support activities?

- (1) Tundra-type grasses, sedges, mosses, and dwarf shrubs
- (2) Sparse but relatively undisturbed desert-type shrubs and grasses
- (3) Ground cover or mostly lawn grasses, mowed several times per year, or a majority of area occupied by buildings, or area is presently paved or graveled

- (4) Ground cover mostly of tall grasses or weeds
- (5) Frequent but scattered shrubs or small trees (less than 10 cm or 4 in. in diameter)
- (6) Continuous cover of shrubs or of larger trees (more than 10 cm or 4 in.)
- (7) Most typical plants are marsh grasses, reeds, cattails, etc.
- (8) Relatively recently farmed, grazed, or otherwise disturbed, having more than 25 percent bare soil
- (9) No new areas

14. How far is any newly or occupied area from regularly used buildings, bivouac areas, maintenance yards, firing points, airfields, drop zones, etc.? (If more than one area is involved, choose the shortest measured distance from any area.)

- (1) Less than 1000 meters (about 6/10 mile)
- (2) More than 1000 meters
- (3) No new areas

Figure 4. (cont'd).

For example, the Sunny Point user receives the impact matrices shown in Figures 5 and 6. The Sunny Point logistics orientation review level matrix is used as the example in Chapter 3. These matrices have decoded lists of basic Army activities on the vertical axis and environmental attributes (in this case, from the Ecology Technical Specialty) on the horizontal axis. The numbers in the right-hand column of the matrix relate directly to the numbers in the Ramifications and Mitigations text shown in Figure 4. In this example, we have separated the Review-Level outputs (Figure 5) from the Detailed-Level outputs (Figure 5) to show the striking difference between them. A matrix has also been included (Figures 5a and 5b) for which no filter questions were answered. Note that the unfiltered matrices (Figures 5a and 6a) differ in many ways from the filtered matrices in presenting impacts needing consideration. The projected environmental impact of unit training on the ecology of Sunny Point (Figures 5b and 6b) is far more severe than that of the logistics orientation training (Figures 5c and 6c). Also, the Review-Level matrices in Figure 5 are much more general and brief than the detailed matrices in Figure 6. This level of output is primarily designed for reviewing EISs and for rapidly determining the best environmental alternatives.

The key to efficient matrix analysis is developing a systematic means of focusing on the primary impacting activities and the most often impacted attributes (and associated problems) as quickly as possible; the user should not analyze every intersection in detail. The first step in a preliminary analysis is always to confirm the existence of the impacting activities and the environmental attributes for the site being studied. Chapter 4 of CERL Technical Report N-43 contains instructions for matrix analysis and application of EICS analyses to the environmental assessment process. These instructions supersede those of CERL Technical Report E-50.

f. Environmental Impact/Problem Confirmation and Measurement. Once the impacts are initially identified, they must be confirmed and explained in as specific and/or quantitative terms as possible. Therefore, the user may need to acquire installation-specific information by performing field surveys and preparing scopes of work for architect/engineer consulting firms. When the major potential impacts are identified, the user can employ EIFS and CELDS when appropriate.

g. EIA/EIS Preparation. Once the environmental impact analysis and information acquisition is complete, the user is ready to prepare an EIA or EIS.

••MATRIX••

		attributes																																				
		1	2	3	4	5	6	7	9	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3	3	4	4	4					
		1	2	3	4	5	6	7	9	0	1	2	3	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	3	4	5	1	2	3			
b	131	C																																	2131	r		
a	133	A	A	A																																2133	a	
a	135	C	B	A																																2135	m	
p	136	C	C																																	2136	s	
s	141	C																																		2141	/	
	144	A	A	A	C																															2143	m	
	147	C	B	A																																2147	1	
	148																																			2148	t	
	151	C	C	C	C	C	C																													2151	s	
	161	B																																		2161		
	163	A	A	A	B	C	C																													2163		
	165	C																																		2131		
	167	C	B	A																																2135		
	168	C	C																																	2136		
	171	C	C	C																																2171		
	173	B	B																																	2173		
	177	C	B																																	2177		
	179	C	B																																	2179		
	182	C	A																																	2182		
	183	C																																		2179		
	193	C	C																																	2193		
	244																																				2244	
	245	C	B																																		2245	
	255	C																																			2255	
	291	C	B																																		2291	
	292																																				2292	

a. Unmodified matrix (for comparative purposes).

		attributes																																				
		1	2	3	4	5	6	7	9	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3	3	4	4	4					
		1	2	3	4	5	6	7	9	0	1	2	3	5	6	7	8	9	0	1	2	3	4	5	6	7	0	1	3	4	5	1	2	3				
b	131	C	B	C	C																															2131	r	
a	133	C	C	C	C	C																														2133	a	
a	135	B	B	A	C	C																															2135	m
p	136	B	B	C	C	C																															2136	s
s	141	B	B	C	B	C																															2141	/
	145	B	B	C	C	C																															2145	m
	147	B	B	A	C																																2147	i
	148	B	B	C	C	C																															2148	t
	151	C	C	C	C	C	C																														2151	s
	161	B	B	C	B	C	C																														2161	
	163	C	C	C	C	C																															2163	
	165	B	B	A	C	C																															2131	
	167	B	B	A	C	C																															2135	
	168	B	B	C	C																																2136	
	171	C	C																																		2171	
	173	B	C	B																																	2173	
	177	C		C																																	2177	
	179	C	C																																		2179	
	182	C	C	A																																	2182	
	183	C	C																																		2179	
	193	C	C	C	C	C	C																														2193	
	244																																				2244	
	245	C	B																																		2245	
	255	C																																			2255	
	291	B	B																																		2291	

b. Unit training alternative matrix.

		attributes																																			
		1	2	4	5	6	7	9	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	4	4	4				
		1	2	4	5	6	7	9	3	8	9	2	4	6	7	8	9	0	1	3	5	2	3														
	244																																			2244	
	245	C	B																																	2245	
	255	C																																		2255	
	292																																			2292	

c. Logistics orientation alternative matrix.

Figure 6. EICS detailed-level matrices.

FUNCTIONAL AREA: mission change

TECHNICAL SPECIALTY: ecology

ATTRIBUTES

- | | |
|-----------------------------|-------------------------------------|
| 1 large mammals | 2 small mammals |
| 3 birds | 4 fish |
| 5 reptiles | 6 amphibians |
| 7 insects | 9 endangered animal species |
| 10 trees | 11 shrubs |
| 12 herbs | 13 algae |
| 15 lichens | 16 other plant species |
| 17 endangered plant species | 18 food webs |
| 19 productivity | 20 seasonal aspect |
| 21 stratification | 22 successional stage |
| 23 small game hunting | 24 waterfowl hunting |
| 25 big game hunting | 26 bottom life |
| 27 warm water fishing | 30 coastal water fishing |
| 31 shellfish | 33 disease vectors |
| 34 noxious weeds | 35 other undesirable species |
| 41 impacts on game animals | 42 encroachment on natural habitats |
| 43 threatened species | |
- preceeded attributes are CONTROVERSIAL

ACTIVITIES

- | | |
|--|---|
| 131 increase number of troops in movement | 133 conduct troop operations in new areas |
| 135 change time of troop movement | 136 incr freq/duration of troop movement |
| 141 change to more destructive weapons | 145 increase number of weapons fired |
| 147 change time of firing | 148 increase frequency/duration of firing |
| 151 incr stor/trans of hazardous weapons/mat | 161 change to more destructive vehicles |
| 163 operate vehicles in new areas | 165 increase number of vehicles |
| 167 change time of vehicle operations | 168 incr freq/duration of vehicle operation |
| 171 add fixed-winged aircraft | 173 add rotary-wing aircraft |
| 177 increase operational air space | 179 increase number of flights |
| 182 change time of flights | 183 increase frequency/duration of flights |
| 193 add airborne/airmobile operations | 244 increase sewer usage |
| 245 increase refuse disposal usage | 291 construct new facilities |

d. Decoded list of ecology attributes and mission change activities matrix.

Figure 6. (cont'd).

CERL Technical Report N-43 and DA Pamphlet 200-1⁷ address the process of responding to AR 200-1⁸ and the original Council on Environmental Quality (CEQ) requirements for document preparation.⁹

Recently issued CEQ regulations¹⁰ on implementing NEPA indicate some modifications to the EIS content suggested by earlier guidelines. Some of these modifications are simply a matter of re-ordering or re-emphasizing topics that preparers were previously required to address in EISs.

Other topics of consideration are more substantial. Since these additions are not addressed in CERL Technical Report N-43 and DA PAM 200-1, users must be sure not to overlook them when preparing an EIS. All such changes will be addressed in future issues of AR 200-1 and DA PAM 200-1, and in future EICS documentation. In the interim, CERL or your MACOM can provide guidance.

3 USER INSTRUCTIONS FOR INTERACTIVE EICS

If a user decides to access EICS after interactively entering ETIS, he/she need only transfer into the EICS program. The following paragraphs provide instructions for accessing ETIS (EICS, EIFS, and CELDS) information by remote terminal.

Once the user has acquired a log-in and a password from CERL's Environmental Division, he/she can access ETIS by remote terminal by following the directions in

⁷*Handbook for Environmental Impact Analysis*, DA PAM 200-1 (Department of the Army, April 1975).

⁸*Environmental Protection and Enhancement*, AR 200-1 (Department of the Army, 7 December 1973).

⁹Council on Environmental Quality, "Preparation of Environmental Impact Statements: Guidelines," *Federal Register*, Vol 38, No. 147, Part II (August 1, 1973), pp 20550-20562.

¹⁰"NEPA: Implementation of Procedural Provisions; Final Regulations," *Federal Register*, Vol 43, No. 230 (November 29, 1978), pp 55978-56007.

CERL Technical Reports E-78¹¹ and N-2¹² (DA Pamphlet 200-2),¹³ and N-43.¹⁴ After acquiring a remote terminal and a telephone, the user should dial the system's number (217/333-1587, FTS 957-1587). If there is no answer, the entire system is down for maintenance. Upon hearing a steady tone, plug the phone into the terminal, making sure that the earpiece and the speaker are in the proper openings, and log into the system. After logging in with the correct name and password, the user will receive system messages. If the system indicates "NO DIRECTORY" or a similar designation, access to the ETIS is probably closed down and the user should try again later. If the system is in operation, output similar to that shown in Figure 7 will appear on the screen or terminal. (The text on the right-hand side of the figure is explanatory and is not part of the output.)

The user should keep several things in mind when using the system. The symbol <CR> used in some instructions means to depress the carriage return button. The instruction to type CTRL-d, means to simultaneously depress the button marked CTRL and the letter d. An input error can be corrected by typing CTRL-h (hitting the CTRL and h buttons simultaneously) if the return button has not yet been depressed. This procedure will back the carriage up one space each time it is repeated. This can be done as many times as necessary. Every symbol which has been backspaced over has been removed from the terminal memory. Therefore, if the first digit of a six-digit number has been mistyped, the user must depress CTRL-h six times and then retype all six digits. The corrected symbols will be overprinted on the paper. To stop a long listing, depress the button marked DEL (delete).

¹¹J. van Weringh, J. Patzer, R. Welsh, and R. Webster, *Computer-Aided Environmental Legislative Data System (CELDS) User Manual*, Technical Report N-56/ADA061126 (CERL, September 1978).

¹²R. D. Webster, R. A. Mitchell, R. L. Welsh, E. Shannon, and M. L. Anderson, *The Economic Impact Forecast System—Description and User Instructions*, Technical Report N-2/ADA027139 (CERL, June 1976).

¹³*The Economic Impact Forecast System—Description and User's Instructions*, DA PAM 200-2 (Department of the Army, December 1976).

¹⁴S. E. Thomas, R. A. Mitchell, R. E. Riggins, J. J. Fittipaldi, and E. W. Novak, *Computer-Aided Environmental Impact Analysis for Industrial, Procurement, and Research, Development, Test, and Evaluation Activities—User Manual*, Technical Report N-43/ADA056997 (CERL, May 1978).

GENERAL ACCESS TO THE ENVIRONMENTAL TECHNICAL INFORMATION SYSTEM (ETIS)

CSO Network Unix System
Login: novak
Password:
Last login Wed May 31 08:04:06 1978
% ETIS

The user gets a dial tone and logs in; in this case, the log-in is "Novak." He/she types in the password which will not appear on the printed page.

The system responds by saying when the last log-in was and enters a percent sign. The user now enters the letters "ETIS", and the system responds by saying "What Program?" The user then asks the system to list the programs by pressing the carriage return (CR) key without entering any characters.

Welcome to CERL's
Environmental Technical Information System

What program? (Type <cr> to see list)

Type:

1 or intro for introduction to Environmental Technical
Information System
2 or eics for the Environmental Impact Computer
System
3 or eics for the Computer-Aided Environmental
Legislative Data System
4 or eifs for the Economic Impact Forecast System
5 or aimod for the Air Model
6 or chis for the Clearinghouse Information System
7 or afeics for the Air Force Environmental Impact
Computer System
8 or blis for the Baseline Information System
! mail to see your mail
ctrl-d or bye to exit

The computer responds with a line of available subprograms under ETIS.

ACCESS TO EICS

What program? (Type <cr> to see list) 2

The user chooses to run EICS to retrieve the Review Level logistics orientation matrix. Therefore the user types "2". ("EICS" could also have been typed.)

Welcome to EICS

The user chooses to run EICS. Therefore, the user types "2". ("EICS" could also have been typed.)

Functional area (type CR to see list):

1 - construction
2 - mission change
3 - operation, maintenance, and repair
4 - training
5 - industrial
6 - procurement
7 - research, development, testing, and evaluation
8 - real estate

The user wishes to see the list of Functional Areas available in EICS; therefore, he/she depressed the carriage return. The system responds by listing the Functional Areas available.

Figure 7. Example EICS instructions and explanation.

functional area (type - to leave the program): 2

Since the user is interested in a mission change at Sunny Point, the key number 2 is depressed.

functional area chosen: mission change

The computer responds by indicating which Functional Area was chosen; in this case, Mission Change.

Technical specialty (type CR to see list):

The computer then needs to know what Technical Specialty the user is interested in. In this case the user depressed the carriage return key to see the list of Technical Specialties.

- 1 - ecology
- 2 - health science
- 3 - air quality
- 4 - surface water
- 5 - groundwater
- 6 - sociology
- 7 - economics
- 8 - earth science
- 9 - land use
- 10 - noise
- 11 - transportation
- 12 - aesthetics
- 13 - energy and resources

technical specialty (type CR to see list): 1
you have chosen ecology

Since the user is interested in the Ecology Technical Specialty he/she depresses the key number 1. The computer then explains that the user has chosen the Ecology Technical Specialty.

detail (type d) or review (type r): r

The user is now asked whether he/she wants detail or review level output. In this case the user then depressed r to indicate review level.

Program number (type '_' if none, CR to see list):
1 MISSION CHANGE RESPONSES

The next two requests for information from the user specify input of a "program number" and a "subprogram number." These two numbers are used to indicate responses to a set of programs, subprograms, or "prefilter" questions printed in the text of the User Manual. The input forms may call this section the "BAAP Filtering Mechanism." The user's responses are shown on p 10.

But how did these questions tie in with the interactive request for a program number? Since early publication of the Mission Change User Manual does not give any further help, the user depresses the return button to get a list of available programs. (The "BAAP Filter Questions" reduce the numbers of activities listed on the matrix with all activities listed; if he/she had pressed the hyphen, he/she would have been directed immediately to the QUESTION AND ANSWER session for Technical Specialty filter questions.)

program number (type '_' if none): 1

Since only one program exists, the user depresses the key number 1.

Figure 7. (cont'd).

subprogram number (type CR to see list)

- 1 1B - 3C
- 2 1B - 3A
- 3 1B - 3B
- 4 1A - 2A - 3A
- 5 1A - 2A - 3C
- 6 1A - 2B - 3B
- 7 1A - 2B - 3C
- 8 1A - 2C - 3A
- 9 1A - 2C - 3B
- 10 1A - 2C - 3C

subprogram number: 7

QUESTIONS AND ANSWERS SESSION:

Would you like to have some directions? Yes.

For a question set, enter all answers in string.
Separate each answer in the string by at least one space.
One answer for each question is assumed. A '?' in place
of an answer will produce that question's printout.
Answer with a 'd' if no choice of answers fits the question
or if a request is given to skip the question (as in RDT&E).

Enter 14 answer(s) to ecology question(s): 2 2 2 ? 4 3 3 3 3 1 1 1 3 3

4. Which of the following statements best describes any areas which have previously been used for training or support activities and in which the intensity of these activities will increase?

1. Extensively modified by construction, grading, paving, landscaping, etc.
2. Regularly used by men, vehicles, and/or weaponry for field training for more than 20 days per year during at least 2 of the last 5 years.
3. Infrequently and lightly used by men, vehicles, and/or weaponry for field training. Average usage for each of the last 10 years has been 10 days or less.
4. No increase

The computer now asks for a subprogram number, and again the user presses the carriage return. The computer prints a list of subprograms and the user finds that each subprogram lists question responses associated with it.

For the Mission Change Functional Area, the list of answers corresponds with answers to the BAAP Filtering Mechanism, item 5 on the input form (p 10). The questions summarized on p 9 are printed in full in the User Manual.

Since the user answered question 1 with response "A," question 2 with response "B," and question 3 with response "C," he/she would find that set of answers in the list and then enter the associated program number, "7" in this case.

So the user depresses the key number 7.

The user now starts the filter question and answer session.

The computer then asks if the user would like some directions. Since this is the first time the user has used the system he/she responds yes.

After giving directions on how to answer, the computer needs input for the filter questions. The computer asks for these answers. Note: a "string" is a row of characters followed by a carriage return.

The user then inputs all the answers for ecology. All of the answers are on the same line, separated by at least one space. For this example, we have answered question 4 with a ? mark.

The computer has then printed out question 4.

Figure 7. (cont'd).

enter answer again for question 4: 1

The system then asks for the answer to question 4. If the user did not know the answer to this question, he/she could have entered a zero.

Please wait.

The user is now asked to wait while the system compiles the answer. This wait is only a matter of several seconds.

ATTRIBUTES

The computer now begins printing:

List of Attributes

- 1 natural setting
- 2 game animals
- 3 game fish
- 4 rare or endangered species
- 5 increase in undesirable species
- *10 impacts on game animals
- *11 encroachment on natural habitats
- *12 threatened species

* preceding attributes are CONTROVERSIAL

ACTIVITIES

List of Activities

- 167 change time of vehicle operations
- 244 increase sewer usage
- 245 increase refuse disposal usage
- 255 decrease refuse disposal usage
- 292 demolish facilities

MATRIX

MATRIX

		attributes							
		1	2	3	4	5	0	1	2
b	167	B	A	C	B	B	B	A	2135
a	244	B	A	B	A	C	B	C	2244
a	245	B	C	C	A	C	B	C	2245
p	255	C							2255
s	292	C					C		2292

What program? (Type <cr> to see list)

Since the user is now finishing, he/she depressed the control and d key at the same time. (usually abbreviated as ctrl-d)

Figure 7. (cont'd).

4 SUMMARY AND RECOMMENDATIONS

This report has provided detailed information on accessing EICS interactively. All necessary commands and accession instructions are included. A typical example was provided to illustrate system usage.

It is recommended that interactive EICS be used as an aid for preparing EIAs/EISs when information must be obtained quickly, and that the instructions provided in this report be used to insure the most efficient use of the system.

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