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December 1979

MODIFICATION AND EXTENSION OF THE
ENVIRONMENTAL TECHNICAL INFORMATION
SYSTEM (ETIS) FOR THE AIR FORCE

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by
R.D. Webster
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Block 20 continued.

→ Use Compendium [LUC], Computer-Aided Environmental Legislative Data System [CELDS], and Baseline Information System [BLIS]) and one Air Force system, Interagency/Intergovernmental Coordination for Environmental Planning (IICEP) are functionally similar enough to warrant coordinating them to avoid redundancy. However, the Air Force's TAB A-1 System and the Army's Clearinghouse Information System (CHIS) should remain separate entities. ←

UNCLASSIFIED

FOREWORD

The work described in this report was performed for the Air Force Engineering and Services Center (AFESC) at Tyndall AFB, FL, by members of the Environmental Division (EN) of the U.S. Army Construction Engineering Research Laboratory (CERL), under Project No. 77-006. The Air Force Technical Contact is CPT Ronald Hawkins of AFESC. Dr. R. K. Jain is 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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MODIFICATION OF THE ENVIRONMENTAL TECHNICAL INFORMATION SYSTEM (ETIS) FOR THE AIR FORCE

1 INTRODUCTION

Background

The National Environmental Policy Act (NEPA) and subsequent guidelines have required Federal agencies to prepare Environmental Impact Assessments and Environmental Impact Statements (EIA/EISs) for all new projects and actions. Council on Environmental Quality (CEQ) regulations pertaining to the enforcement of NEPA have provided for the categorical exclusion of certain activities which, because of their nature or size, will not significantly affect the quality of the environment. To facilitate the EIA/EIS process, the U.S. Army Construction Engineering Research Laboratory (CERL) has developed a computer-aided system that provides data useful for writing EIA/EISs and for environmental planning at installations. The principal objective of this system -- the Environmental Technical Information System (ETIS)¹ -- is to combine modern data management techniques and predictive models to satisfy the user's information requirements. CERL has developed several subsystems of ETIS that provide detailed information in several specific areas.

The U.S. Department of the Air Force (USAF) has reviewed the ongoing research and development of three of these subsystems and has assisted with modifying them for application to USAF projects and extending their existing data bases. These modifications were related principally to three subsystems currently being used in the field: the Environmental Impact Computer System, the Economic Impact Forecast System, and the Computer-Aided Environmental Legislative Data System.

The Environmental Impact Computer System (EICS)² enables the user to determine both how an Air Force action affects various aspects of the environment and how to address these effects in an EIA/EIS. The output is presented in matrix format, as shown in Figure 1.

¹ R. D. Webster, et al., Development of the Environmental Technical Information System, Interim Report E-52/ADA009668 (U.S. Army Construction Engineering Research Laboratory [CERL], April 1975).

² R. K. Jain, et al., Environmental Impact Assessment Study for Army Military Programs, Interim Report D-13/771062 (CERL, November 1973); and L. V. Urban, et al., Computer-Aided Impact Analysis for Construction Activities: User Manual, Technical Report E-50/ADA008988 (CERL, March 1975).

ATTRIBUTES		attributes												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1 slope		H	B	A	A	A	A	A	A	B	A	B	A	A
3 hydrologic regime		C	C	C	C	C	C	C	C	C	C	C	C	C
5 bedrock		A	A	A	A	A	A	A	A	A	A	A	A	A
6 soil compaction		P	A	A	A	A	A	A	A	C	C	C	C	C
7 soil horizon mislay		S	A	A	A	A	A	A	A	A	A	A	A	A
8 subsurface vibration			C	C	C	C	C	C	C	C	C	C	C	C
15 water erosion			C	C	C	C	C	C	C	C	C	C	C	C
16 ice erosion			C	C	C	C	C	C	C	C	C	C	C	C
17 wind erosion			C	C	C	C	C	C	C	C	C	C	C	C
18 gravity, mass wasting			C	C	C	C	C	C	C	C	C	C	C	C
23 water erosion			C	C	C	C	C	C	C	C	C	C	C	C
26 hydrologic regime			C	C	C	C	C	C	C	C	C	C	C	C
27 subsurface vibration			C	C	C	C	C	C	C	C	C	C	C	C
28 wind erosion			C	C	C	C	C	C	C	C	C	C	C	C
29 gravity, mass wasting			C	C	C	C	C	C	C	C	C	C	C	C
* preceded attributes are CONTRAVERSIAL														
ACTIVITIES														
		141	142	143	144	145	146	147	148	149	151	152	153	154
141 change to more destructive weapons														
142 change to less destructive weapons														
143 change to new impact area or firing range														
144 eliminate impact area or firing range														
145 increase weapon usage														
146 decrease weapon usage														
147 change time of weapon usage														
148 increase frequency/duration of usage														
149 decrease frequency/duration of usage														
151 incr stor/trans of hazardous weapons/materials														
152 decr stor/trans of hazardous weapons/materials														
153 increase number of vehicles														
154 decrease number of vehicles														
155 increase frequency/duration of operations														
156 decrease frequency/duration of operations														
175 add weapons-carrying aircraft														
176 eliminate weapons-carrying aircraft														
182 change time of flights														
183 increase frequency/duration of flights														
184 decrease frequency/duration of flights														
193 add special operations squadrons														
194 eliminate special operations squadrons														
251 increase electrical usage														
253 increase water usage														
255 increase heating and a/c usage														
257 increase sewage treatment requirements														
259 increase refuse disposal														
291 construct new facilities														
292 demolish facilities														
293 increase facility maintenance														

Figure 1. Example of EICS matrix output for Mission Change Functional Area and Earth Science Technical Specialty.

The system considers nine broad areas of Air Force military activities called functional areas: construction; mission change; operation and maintenance; training; industrial; research, development, test, and evaluation; procurement; real estate; and administration. The "environment" includes 13 broad categories called technical specialties. These are ecology, health science, air quality, surface water, groundwater, sociology, economics, earth science, land use, noise, transportation, aesthetics, and energy and resource conservation.

The functional areas are further broken down into basic activities. These activities are then compared to the attributes in each technical specialty using a "need-to-consider" scale. The system indicates the probability of impact occurrence, rather than the potential magnitude of the impact. Keyed to the activity are ramification and mitigation statements (Figure 2). Ramification remarks explain why the activities were scored as they were. The mitigation statements describe ways to lessen or avoid the impact of that activity.

The user has the option of obtaining output at two levels. The review level contains attributes (environmental characteristics) that give an overview of that technical specialty without the specificity that the detailed attributes provide (Table 1, Section A). It should be 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 aid the preparation of major EISs, contains all the attributes of a technical specialty (Table 1, Section B). Controversial attributes are presented at both levels. These are attributes that are controversial in nature -- that is, historically have presented some concern in the public section -- whether or not the actual impact is scientifically significant (Table 1, Section C).

To make the system more site-specific, the user is asked to complete an input form and answer a series of filter questions for each technical specialty (Figure 3). The References section lists reports that give detailed instructions for using EICS for functional areas that are currently available.

Economic Impact Forecast System

The Economic Impact Forecast System (EIFS)³ is an export base location quotient model. It is designed to help the Air Force planner see if an action will have a significant impact on the local economy.

³ R. D. Webster, et al., The Economic Impact Forecast System: Description and User Instructions, Technical Report N-2/ADA027139 (CERL, June 1976); and R. D. Webster, et al., Development of the Economic Impact Forecast System (EIFS) -- the Multiplier Aspects, Technical Report N-35/ADA057936 (CERL, November 1977).

AIR FORCE MISSION CHANGE - EARTH SCIENCE

2141

/RAMIFICATIONS/

THE INTRODUCTION OF MORE DESTRUCTIVE WEAPONS PRODUCES SEVERE PROBLEMS THROUGH THE ACTUAL DESTRUCTION OF SOIL PROFILES, VEGETATIVE COVER, AND BEDROCK CONSTITUENTS. THESE DISRUPTIONS ARE VERY DEGRADATIVE IN RESPECT TO FUTURE LAND CAPABILITIES AND THEY ACCELERATE THE EROSION PROCESSES.

/MITIGATIONS/

INCREASED ACTIVITY ON LAND AT FIRING POINTS OR IMPACT ZONES SHOULD BE ACCOMPANIED BY INCREASED EFFORT IN MANAGING EROSION THROUGH VEGETATIVE OR MECHANICAL PROTECTION (FIRING POINTS), PLUS SCHEDULING ACTIVITIES SUCH THAT STRESSES ARE MINIMIZED (FIRING POINTS AND IMPACT ZONES). INTERACTION WITH AGRONOMISTS, BOTANISTS, AND SOIL SCIENTISTS ON OR NEAR THE INSTALLATION SHOULD ESTABLISH THE SEVERITY OF ANY PROBLEMS TO BE ANTICIPATED.

THE MOST APPROPRIATE MITIGATION TENDS TO BE THE AVOIDANCE OF AREAS WITH SHALLOW BEDROCK, HIGH SUSCEPTIBILITY TO EROSION, MODERATE TO HIGH SLOPES, AND GEOLOGIC INSTABILITY.

2143

/RAMIFICATIONS/

OPERATION IN NEW FIRING POINTS AND IMPACT ZONES (THOSE IN WHICH THESE OPERATIONS HAVE NOT BEEN HISTORICALLY CARRIED ON) REPRESENTS A VERY SUBSTANTIAL ENVIRONMENTAL CONSIDERATION. IF THESE AREAS EXIST IN A NATURAL STATE, THE IMPACTS ON EARTH SCIENCE ATTRIBUTES ARE SUBSTANTIAL. IF THESE AREAS ARE MERELY USED FOR THE FIRST TIME IN SEVERAL YEARS, THE IMPACT IS PROPORTIONATELY DIMINISHED.

/MITIGATIONS/

(A) BEFORE OPERATION IN NATURAL AREAS BEGINS, THE LONG-TERM CONSEQUENCES IN REDUCING THE AGRICULTURAL CAPABILITIES, DISRUPTING ANY HYDROLOGIC BALANCE, AND INTRODUCING ACCELERATED EROSION MAY PROHIBIT ACTIVITY AND FORCE THE PLANNER TO APPROACH AREAS WHICH MAY HAVE ALREADY BEEN DISRUPTED IN YEARS PAST. THIS IS ESPECIALLY TRUE OF THOSE ACTIVITIES WHICH INTRODUCE STRESSES BEYOND THOSE COMMONLY FOUND IN NATURE. A COMMON SENSE APPROACH AND CONSULTATION WITH ECOLOGISTS, BOTANISTS, AND AGRONOMISTS SHOULD ESTABLISH THE NECESSITY FOR FINDING AN ALTERNATE SITE IF IT EXISTS.

(B) IN AREAS STRESSED IN PREVIOUS YEARS, THE IMPACTS ARE LESS, RELATIVELY SPEAKING. CONSULTATION WITH LOCAL OR INSTALLATION EXPERTS SHOULD ESTABLISH THE PRESENT ABILITY OF THE AREAS TO ACCEPT THE NEW ACTIVITY. SOIL SCIENTISTS, AGRONOMISTS, AND BOTANISTS CAN MAKE QUALITATIVE EVALUATIONS REGARDING THE ACCEPTABILITY OF THE PLANNED ACTIVITIES.

Figure 2. Example of RAM/MIT output for Mission Change Functional Area and Earth Science Technical Specialty.

Table 1
The EICS Attribute Levels

ECOLOGY

A. Review-Level Attributes

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

B. 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

C. Controversial Attributes

- 10.(41*) Impacts on Game Animals
- 11.(42*) Encroachment on Natural Habitat
- 12.(43*) Threatened Species

INPUT FORM NUMBER 2 - MISSION CHANGE FUNCTIONAL AREA

1. PROJECT NAME: _____

2. INSTALLATION: _____

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

4. ENVIRONMENTAL INFORMATION FOR SITE: _____

5. SAAP FILTERING MECHANISM ANSWERS:

1	2	3
---	---	---

6a. NUMBER OF TECHNICAL SPECIALTIES: _____

7. PRINT NAME - MIT TEXT: _____

8. DETAIL OR REVIEW LEVEL? _____

9. IMPACT OPTION: A only - AB - ABC (circle one)

6a. TECHNICAL SPECIALTIES REQUESTED:

ECOLOGY _____

ENV. HEALTH _____

AIR QUALITY _____

SURFACE WATER _____

GROUND WATER _____

SOCIOLOGY _____

ECONOMICS _____

EARTH SCIENCE _____

LAND USE _____

NOISE _____

TRANSPORTATION _____

AESTHETICS _____

ENERGY/RESOURCE 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															
ENV. HEALTH															
AIR QUALITY															
SURFACE WATER															
GROUND WATER															
SOCIOLOGY															
ECONOMICS															
EARTH SCIENCE															
LAND USE															
NOISE															
TRANSPORTATION															
AESTHETICS															
ERG/RES CONS															

Figure 3. Example of EICS input form.

The system is based on county units, with statistics available for every county in the nation. Specific counties are then aggregated to form the relevant economic region.

This system contains 10 different subfeatures, called profiles, which are explained below.

1. The first profile gives an overview of the region, including population, governmental, and business statistics.

2. The second profile gives the same information as profile 1, but separates it so that the statistics of the individual counties can be seen.

3. The third profile highlights historical trends in income, employment, and population.

4. The fourth profile is the predictive model. The model follows the same functional area breakdown found in EICS. Four functional areas are currently available: construction, operation and maintenance, mission change, and training. Location quotient techniques are used to estimate an action's impact on the region. The economic model always gives worst case predictions so that the Air Force planner can see the worst possible impact an action will have on the regional economy.

5. The fifth profile summarizes statistics used in the model calculations.

6. The sixth profile gives the Rational Threshold Value (RTV). This is a method to establish the significance of economic impact. Four areas of the regional economy are examined: change in business volume, change in personal income, change in total employment, and change in population. The historic changes in each of these parameters are examined. The positive RTV equals the largest positive percent deviation in the historical record. The negative RTV is a fixed percentage of the maximum historic negative deviation. Changes in these percentages are: business volume, 75 percent; personal income and personal employment, 67 percent; and population 50 percent. Inflation has been accounted for here by normalizing all values to 1967 dollars.

7. The seventh profile contains a detailed employment profile. This includes all Standard Industrial Classification codes for the area. At the user's option, these can be retrieved at the one-, two-, three-, or four-digit levels, which represent increasingly detailed data.

8. The eighth profile allows the user to input a different multiplier before using the predictive model.

9. The ninth profile contains the export employment profile. This profile is used to obtain the four-digit location quotients used in the predictive model.

10. The tenth profile allows the user to obtain census data on a county by census tract level or at the minor civil division (town) level.

Computer-Aided Environmental Legislative Data System

The Computer-Aided Environmental Legislative Data System (CELDS)⁴ is an up-to-date summary of all Federal and state laws, regulations, and standards related to the environment. It was developed in response to an Air Force need for rapid and easy access to relevant environmental standards. CELDS has been developed for use by nonlawyers to determine environmental standards which might be important in regulating an on-going Air Force activity or which should be considered in planning a future action. Abstracts of the laws are written in a straightforward, easy to understand, narrative style. These abstracts are not intended to replace the original documents or to resolve complex legal problems.

With the system, each environmental law has been subdivided into 12 categories of information called fields. Fields which can be used to conduct a search are indicated by an asterisk below.

*ACC - accession number, which identifies the laws as they were originally entered into the system.

TTL - title, a brief comprehensive title that reflects the scope of each law.

DAT - enactment date (or the date when the law became effective).

REF - the referenced or official legal source of the regulation.

*MEC - the major environmental category - each law has been indexed under one or more of the following environmental areas: Air Quality, Earth Science, Ecology, Health Science, Land Use, Noise, Sociology, Solid Waste, Transportation, and Water Quality.

*GPS - geographical/political scope - the political area in which the law is applied, such as a state or the Federal government. States are identified by their two-letter postal

⁴ J. van Weringh, et al., Computer-Aided Environmental Legislative Data System (CELDS) User Manual, Technical Report N-56/ADA061126 (CERL, September 1978).

code, e.g., "IL" for Illinois, "US" for the Federal government.

*AGY - the administrative agency - the name and address of the office which enforces each law.

BIB - bibliographic reference - the source of the original text from which the law was abstracted.

ABS - abstract - a concise, informative presentation of the law's details.

TBL - table of environmental standards, if any exist for the law.

*ATT - environmental attributes - laws are indexed under relevant attributes which are listed in the CELDS User Manual (see References).

*KEY - keywords are environmental categories identified under a pertinent major environmental category (MEC). A list of the keywords may be obtained in the CELDS User Manual.

Although the Air Force is obtaining data from these three ETIS subsystems, its environmental analysis process has two other requirements: (1) obtaining environmental information for/from all USAF installations, and (2) finding a means of coordinating USAF activities with state agencies.

The TAB A-1 environmental supplement⁵ outlines an approach for obtaining and using environmental planning and analysis information gathered for every USAF installation. These data are used as a source of locally specific information regarding the community's makeup. The data are often community- or installation-specific and are often of variable time frame either within or across the installations being analyzed. The system is divided according to the scheme shown in Table 2, which includes only section 4, the human environment section, of the TAB; a firm format for the other sections has not been established.

CERL is analyzing the computerization of some of these data. A pilot system is operational for three separate installations, and review of this system is under way. Modifications will be made to incorporate USAF comments, and CERL will provide recommendations specific to the internal structure of such a TAB system. CERL is coordinating TAB A-1 with ETIS subsystems. Investigation of the TAB A-1 is under way, and some recommendations have already been made to the Air Force. A pilot system for storing and analyzing TAB A-1 data is being developed.

⁵ TAB A-1: Environmental Narrative, Supplement of USAF Installation Master Plans (Department of the Air Force).

Table 2

Table of Contents for Socioeconomic Section of TAB A-1

4.0 Human Environment

- 4.0.1 Breakdown of Base Employees by Community or County of Residence
- 4.0.2 Definition of Region of Influence
 - 4.0.1.1 Definition of Maximum Commute Area

4.1 Demographic

- 4.1.1 Population
 - 4.1.1.1 Population Change by Location
 - 4.1.1.2 Population Distribution by Age and Sex
- 4.1.2 Ethnic/Racial Distribution
- 4.1.3 Marital Status
- 4.1.4 Household Composition and Size
- 4.1.5 Educational Achievement
 - 4.1.5.1 Educational Achievement of Base Personnel
 - 4.1.5.2 Median Educational Level Achieved
- 4.1.6 Income Levels - (Personal)
- 4.1.7 Occupation by Category

4.2 Economic Characteristics

- 4.2.1 Definition of Economic Region
- 4.2.2 Employment
 - 4.2.2.1 Labor Force and Unemployment in Region
 - 4.2.2.1.1 Unemployment
 - 4.2.2.1.2 Minority Employment
 - 4.2.2.1.3 Participation in Labor Force -- Male and Female
 - 4.2.2.1.4 Employment by Sector (Historical Profile)
 - 4.2.2.1.5 Employment by Sector (Projections)
 - 4.2.2.1.6 Employment Outside Region
 - 4.2.2.2 Employment and Payrolls On-Base
 - 4.2.2.2.1 Historical Profile of Base Employment
 - 4.2.2.2.2 Breakdown of Base Employees and Payroll -- Summary
 - 4.2.2.3 Personnel and Dependents Working Off-Base/On-Base
 - 4.2.2.4 Payrolls and Establishments
 - 4.2.2.4.1 Earnings by Industry
 - 4.2.2.4.2 Nonagricultural Employment and Earnings
 - 4.2.2.4.3 Agricultural Revenues and Employment
- 4.2.3 Public Finance
 - 4.2.3.1 Local Budgets
 - 4.2.3.2 State and Local Taxation
 - 4.2.3.2.1 Income
 - 4.2.3.2.2 Property
 - 4.2.3.2.3 Sales

Table 2 (cont'd)

- 4.2.3.2.4 Tangible Personal Property Tax
- 4.2.3.2.5 Other Taxes
- 4.2.3.3 Outstanding Debt
- 4.2.3.4 Major Public and Private Projects
- 4.2.3.5 Contributions to Charity
- 4.2.4 Base Procurement
 - 4.2.4.1 Distribution of Procurement Awards by Location of Vendor
 - 4.2.4.2 Summary of Base Procurement by Type
 - 4.2.4.3 Summary of Base Procurement by Organization
 - 4.2.4.4 Construction Programs
 - 4.2.4.5 Base Commissary Purchases
 - 4.2.4.6 Base Exchange Purchases
- 4.2.5 Housing
 - 4.2.5.1 Off-Base Housing (Community)
 - 4.2.5.1.2 Value of Owner-Occupied Housing
 - 4.2.5.1.3 Contract Rent
 - 4.2.5.1.4 Median Housing Values and Rent
 - 4.2.5.1.5 Housing Tenure
 - 4.2.5.1.6 Vacancy Trends
 - 4.2.5.1.7 Housing Conditions
 - 4.2.5.1.8 Residential Land Availability
 - 4.2.5.1.9 Summary of the Housing Market
 - 4.2.5.2 On-Base Housing
 - 4.2.5.2.1 On-Base Housing Inventory
 - 4.2.5.2.2 On-Base Housing Characteristics
- 4.2.6 Summary of the Region's Economy
 - 4.2.6.1 Personal Income Per Capita
 - 4.2.6.2 Industry Composition
 - 4.2.6.3 Trading Patterns
 - 4.2.6.4 Retail Sales
 - 4.2.6.5 Potential for Growth
 - 4.2.6.5.1 Growing Industries
 - 4.2.6.5.2 Labor Force
 - 4.2.6.5.3 Distance to Major Markets
 - 4.2.6.5.4 Natural Resources
 - 4.2.6.5.5 Industrial/Commercial Sites
 - 4.2.6.5.6 Environmental Constraints to Growth
 - 4.2.6.6 Impact of Base

4.3 Institutional Characteristics

- 4.3.1 Government
 - 4.3.1.2 State
 - 4.3.1.3 Regional
 - 4.3.1.4 Local
 - 4.3.1.4.1 Structure
 - 4.3.1.4.2 City Departments

Table 2 (cont'd)

- 4.3.2 Stakeholders
- 4.3.3 Education
 - 4.3.3.1 Public School Enrollment
 - 4.3.3.2 Private School Enrollment
 - 4.3.3.3 Facilities -- Public and Private (K-12)
 - 4.3.3.4 School District Budgets and Funding
 - 4.3.3.5 Special Programs
 - 4.3.3.6 Higher Education (College and University)
 - 4.3.3.7 Education On-Base
- 4.3.4 Medical
 - 4.3.4.1 Civilian Community
 - 4.3.4.1.1 Community Medical Facilities and Services
 - 4.3.4.1.2 Community Medical Professionals
 - 4.3.4.2 On-Base Medical
 - 4.3.4.2.1 Services and Facilities
 - 4.3.4.2.2 On-Base Medical Professionals
 - 4.3.4.2.3 Facilities Utilization
 - 4.3.4.2.5 Other Federal and Military Facilities in Area
- 4.3.5 Community Services and Facilities
 - 4.3.5.1 Police - Community
 - 4.3.5.2 Fire Protection - Community
 - 4.3.5.3 Social Services
 - 4.3.5.4 Cultural and Recreational
 - 4.3.5.5 Social and Service Clubs

4.4 Activity Systems and Plans

- 4.4.1 Transportation
 - 4.4.1.1 General
 - 4.4.1.2 Off-Base
 - 4.4.1.2.1 Air Transportation
 - 4.4.1.2.2 Rail Transportation
 - 4.4.1.2.3 Roadways
 - 4.4.1.2.5 Community Transportation Plans
 - 4.4.1.3 On-Base
 - 4.4.1.3.1 Interface With Community
 - 4.4.1.3.2 Internal Circulation
- 4.4.2 Utilities
 - 4.4.2.1 Water
 - 4.4.2.1.1 Community Water
 - 4.4.2.1.2 On-Base Water
 - 4.4.2.2 Sewage
 - 4.4.2.2.1 Community
 - 4.4.2.2.2 On-Base
 - 4.4.2.3 Electrical Power
 - 4.4.2.3.1 Civilian Community Supply and Demand
 - 4.4.2.3.2 On-Base Supply and Demand

Table 2 (cont'd)

- 4.4.2.4 Liquid Fuel Systems
 - 4.4.2.4.1 Community
 - 4.4.2.4.2 On-Base
- 4.4.2.5 Heating
- 4.4.2.6 Natural Gas
- 4.4.2.7 Storm Drainage
 - 4.4.2.7.1 Civilian Community
 - 4.4.2.7.2 On-Base
- 4.4.2.8 Solid Waste
 - 4.4.2.8.1 Community
 - 4.4.2.8.2 On-Base
- 4.4.2.9 Communication, Nav aids
- 4.4.3 Land Use
 - 4.4.3.1 Existing Land Use
 - 4.4.3.1.1 Summary of Existing Land Use in the Region of Influence
 - 4.4.3.1.2 Summary of Existing Land Use in the Communities/Counties Within the Region of Influence
 - 4.4.3.2 Future Land Use
 - 4.4.3.2.1 Adjacent Area Land Use Analysis (Projections)
 - 4.4.3.3 Encroachment Potential
 - 4.4.3.4 Summary of On-Base Land and Facilities
 - 4.4.3.4.1 Primary Installation
 - 4.4.3.4.2 Cost (Including Improvements)
 - 4.4.3.5 On-Base Facilities
 - 4.4.3.5.1 Mission Facilities
 - 4.4.3.6 Special Areas: On-Base
 - 4.4.3.6.1 Radioactive Burial Sites
 - 4.4.3.6.2 Electro-Magnetic, Radiation Hazard Areas
 - 4.4.3.6.3 Historical/Archaeological Sites
 - 4.4.3.7 Air Installation Compatible Use Zone (AICUZ) Report (if applicable)

The Interagency/Intergovernmental Coordination for Environmental Planning (IICEP) program was developed by the Air Force to insure adequate coordination of Air Force activities with responsible agencies at the state and local levels. This system identifies points of contact for several major categories of USAF activities (see Chapter 2). The IICEP data identify agencies and agency contacts which are tied to categories of activity or basic Air Force programs. The agency identification is primarily names and addresses of contacts; the categories of activities are such terms as "General," "Environmental Quality," "Land Use," etc.; and the Air Force programs are functions such as the Air Installation Compatibility Use Zone (AICUZ) studies.

A principal concern of CERL and the Air Force Engineering and Services Center (AFESC), Tyndall AFB, FL, has been the potential for overlap in various approaches to environmental planning guidelines and analysis tools. To avoid redundancy, environmental planning concepts now being investigated at CERL must be analyzed in terms of similar programs being studied by the Air Force.

Objective

The objectives of this report are (1) to identify relationships among Air Force projects (IICEP, TAB A-1), Army projects (Land Use Compendium [LUC], Clearinghouse Information System [CHIS], Baseline Information System [BLIS]), and joint projects (EICS, EIFS, and CELDS) dealing with environmental impact analysis and information system development, and (2) to recommend modifications and extensions of ETIS to provide a coordinated and systematic resource for satisfying Air Force and Army environmental analysis requirements.

Approach

The following approach was taken to meet the objectives of this study. First, Army and Air Force programs (IICEP, TAB A-1, LUC, CHIS, BLIS, EICS, EIFS, and CELDS) were compared on the basis of geographic scope, type of input required, number and relation of searchable fields required, and the overall user orientation necessary. Next, overlap between these programs was analyzed based on either geographic unit coverage or data base content. Finally, recommendations for modifying and extending ETIS were formulated, based on the concept of a centralized, environmentally oriented system, capable of satisfying the needs of untrained DOD users of diverse fields and backgrounds.

2 PRINCIPAL COMPONENTS OF ARMY AND AIR FORCE ENVIRONMENTAL SYSTEMS

EICS, EIFS, and CELDS are already implemented and are being used by both the Air Force and the Army. These systems are generally used as "stand-alone" or "modular" systems. Two of these systems have potential interfaces with other systems being discussed, while EIFS and EICS could benefit from the specificity of a system such as TAB A-1. This would be better accomplished by modifying EICS and EIFS to include the necessary data (which is only a minor subset of that available in TAB A-1). CELDS' structure appears to have features which would be potentially useful in handling the IICEP, LUC, CHIS, and BLIS system requirements. Therefore, CELDS was compared to the other systems, but EICS and EIFS were not.

The Interagency/Intergovernmental Coordination for Environmental Planning (IICEP) Program

IICEP is a directory of state environmental planning agencies with which Air Force planners must coordinate their actions. The draft directory is divided into three volumes -- one for each Air Force Civil Engineer Region (AFRCE). Agencies located in all 50 states, Guam, and Puerto Rico are included. The listed agencies are from the following environmental categories:

1. General
2. Air Resources
3. Energy
4. Health and Safety
5. Land Use
6. Natural Resources
7. Noise
8. Socioeconomics
9. Solid Waste
10. Transportation
11. Water.

The directory contains information which enables the user to identify the relevance of each agency to specify environmental planning issues and lists the point of contact for each. Table 3 lists the subdivisions of each major environmental category. IICEP listings provide the agency name, address, telephone number, contact, and function. Appendix A provides a sample session from the pilot computerized IICEP system.

The subsequent publication of Interim Environmental Planning Bulletins 14 and 15 has clarified the general concepts and hierarchically organized the data originally contained in the draft directory.

Table 3

Categorical Breakout of IICEP

1. General

Coordination
Environmental Quality
Environmental Impact Statements
A-95 Clearinghouse
Transportation

2. Air Resources

General

3. Energy

General
Facility Siting

4. Health and Safety

General
Civil Defense
Occupational Health
Pesticides
Radiation
Building Codes
Safety

5. Land Use

Planning
Agriculture
Coastal Zone Management
Minerals and Geology

6. Natural Resources

Land Management and Grounds Maintenance
Fish and Wildlife
Recreation
Forestry
Archaeology and Historic Preservation
Flood Control
Oil and Gas

Table 3 (cont'd)

7. Noise

General

8. Socioeconomics

Economic Development
Education
Housing
Local Government
Social Services

9. Solid Waste

General

10. Transportation

General
Aeronautics
Highways

11. Water

General
Water Resources Management

The most serious problem with IICEP is the task of updating the information. The jurisdictions and duties of the various identified agencies are nebulous and change constantly. In addition, the current organization of the IICEP document, which fills three large binders, is both very awkward physically and inconvenient to update, since changes must be mailed to all users. This is true of both the draft directory and the planning bulletins. While such a manual updating system could be devised, it would greatly increase the possibility of errors and misinterpretation and would not satisfy practical user needs. The IICEP program could be a valuable source of information, not only to Air Force planners but also to other planners within DOD. If the information were maintained in a central data base accessible by remote terminal and capable of supporting interactive usage, the system could be updated constantly with a minimum of effort, and the user could access it from the central source (the interactive system). If IICEP could be incorporated into ETIS, the user could access its information without having to learn how to operate a new system.

TAB A-1 Environmental Narrative

The TAB A-1 Environmental Narrative⁶ provides mostly environmental data needed to adequately assess environmental impacts. It differs from the other systems being considered in this centralization concept in that: (1) it does not identify bits of information by the same geographic jurisdiction (the TAB is community-specific, while the other systems are state-specific or county-specific); (2) it does not store just contacts (or agency names), but actual information, and (3) it has a tremendously variable format, depending on the data to which it is applied. These differences constitute a sufficient deviation from the other systems under discussion. The TAB A-1 data elements are not addresses (or points of contact), but rather are data elements (measurements) themselves. Each lower level category (as shown in Table 2) has a distinctly different format. This situation complicates the data management problem within the TAB A-1, and provides a considerably worse complication if imposed on LUC, IICEP, CHIS, or BLIS. Appendix B provides examples of TAB A-1 information. Although a subset of TAB A-1 could become a subsystem of ETIS, it is better if it remains a separate subsystem that does not duplicate other ETIS data. For example, the TAB A-1 system (or some appropriate acronym title) should remain a separate program under ETIS and not function as a separate profile or subsystem. Other systems, which have defined overlaps, should be coordinated into a more general approach.

⁶ TAB A-1 -- Environmental Narrative, Supplement of USAF Installation Master Plans (Department of the Air Force).

Clearinghouse Information System (CHIS)

The Clearinghouse Information System (CHIS), which was recently designed and implemented at CERL, identifies state and local agencies with which planners must coordinate environmental impact planning documents as required by OMB Cir A-95.⁷ This system identifies these potential contacts based on their geographic designations (counties). Appendix C provides a sample CHIS information retrieval session. While the format is very similar to that of LUC, BLIS, and IICEP, its level of detail for regional identification is much more specific. Its reliance on county and city designations instead of state designations indicates a greater number of search terms, more differentiation because of a greater number of search terms, and some deviation from the overall norm of systems to be included in this centralization concept. Although the keywording could be altered to include CHIS with other systems, it will remain a separate component within ETIS. CHIS will be updated through coordination with OMB and state-level A-95 agencies. (These are identified in both IICEP and CHIS.)

Baseline Information System (BLIS)

The Baseline Information System (BLIS), which is under development at CERL, will identify sources of information and consultation which may be used to prepare and develop environmental planning documents. This project is intended to supplement EICS by identifying data sources keyed to each state and searchable by environmental attribute (or attribute designation).⁸ These entries are taken from directories, state agency lists, Federal agency lists, and many other sources. The system is designed to be a starting point for obtaining consultation, assistance, or data which can be used to clarify, substantiate, and assess the magnitude of potential impacts identified by EICS. The system will enable the user to make inquiries and receive feedback. A list of addresses, phone numbers, and supplemental qualifying information will be supplied initially, based on keyword inputs by the user (using EICS output to specify attributes). The system will be dynamic, allowing the user to make suggestions and comments directly to the machine. These will be stored in a directory accessible to maintenance personnel. This feedback mechanism will provide a means of updating and refining the system to meet user needs. The update of BLIS will be supplemented by user suggestion and feedback. BLIS will allow good contacts or good types of contacts to be transferred from one DOD user to the DOD environmental community. The system will be updated in an operational mode by

⁷"Office of Management and Budget Circular A-95," Federal Register, Vol 42, No. 6 (January 10, 1977), pp 2210-2291.

⁸Attribute Descriptor Package, Technical Report E-86/ADA024303 (CERL, April 1976).

monitoring directories and lists of recognized experts and agencies relative to potential environmental assistance.

Land Use Compendium (LUC)

The Land Use Compendium (LUC) now being developed at CERL identifies agencies having designated land use authority in states. In keeping with Point 2 of the Council on Environmental Quality (CEQ) guidelines, the LUC system allows for efficient identification of agreements and resolution of conflicts between a given DA program (or project) and state and local plans, policies, and programs.

Currently, 23 Federal agencies are included. These agencies satisfy two criteria: (1) they control some aspect of land use, and (2) the uses or lands they control are related to DA actions. Up to 19 state agencies or points of contact are also included which satisfy the following criteria: (1) they administer a law or regulation, (2) they are officially responsible, statewide, for some area concerned with land use, or (3) they are responsible, statewide, for the study of land use problems.

Areas of concern included within LUC at the state level are:

1. Statewide Planning (Coordination)
2. Statewide Planning (A-95 Review)
3. Coastal Zone Management
4. Wetlands Management
5. Floodplain Management
6. Surface Mining Regulations
7. Agricultural Lands Classification
8. Forest Lands Management
9. Recreation Lands Management
10. Differential Assessment Laws
11. Historic/Archaeologic Sites
12. Critical Area Designation
13. Water Resources Management
14. Air Quality
15. Water Quality
16. Solid Waste Management
17. Noise Control
18. Power Plant Siting
19. Transportation Planning

This system identifies information by geographic designation (state) and by category of interest (another keyword type of search). Appendix D provides an example of LUC information. LUC will be updated through constant agency contact by the system operational element (when it is established).

Computer-Aided Environmental Legislative Data System (CELDS) --
Aspects Common to All

CELDS stores abstracts of state and Federal environmental legislation. These abstracts are available to the ETIS user through selected search terms or combinations of selected search terms. A well-defined update procedure has already been implemented for this system. Specific CELDS characteristics relative to the update needs of the other systems are:

1. Initially, CELDS is almost always approached from a geographic standpoint (i.e., the laws of Texas, Oklahoma, etc.). This process is the same used for the hierarchical searches performed in the other systems.

2. CELDS has several categories of search terms (Major Environmental Categories (MECs), Geographical/Political Scopes (GPSs), Keywords, etc.). Analogies to the other systems are obvious in that several categories of keywords and other search terms are combined in a logical search sequence to obtain the desired information.

3. Updating CELDS, as with the other systems, will always involve coordination with state agencies (e.g., receipt of agency announcements and newsletters and periodic inquiries to the agencies).

3 COMPARISON AND POTENTIAL CENTRALIZATION OF SYSTEMS

The geographic search level (county or township) of CHIS differs from that of the other systems (state or region). It would be difficult to maintain two levels of scale within the geographic search category. Thus, while the update function of CHIS could be shared with those of BLIS, LUC, CELDS, and IICEP, its system implementation would be more efficient if it remained a separate entity.

TAB A-1 differs significantly from the other systems in all respects. Its data base is installation-specific and is larger and more complex than those of BLIS, LUC, CELDS, IICEP, or CHIS. Therefore, updating locally specific TAB A-1 data would be more efficient and complete if done by installation personnel instead of by a centralized updating function, as envisioned for the other systems. In addition, interactive enhancement of TAB A-1 analysis algorithms will be required, which might be hampered if a common hybrid system is developed. This is not meant to imply that some advantages could not be gained through the centralized update of Department of Commerce and related statistics, which comprise approximately 60 to 75 percent of the TAB A-1 format. The main strength and advantage of the system, however, is the localized data. If this localized information is used in a predictive estimation scheme (Local Economic Consequences Study [LECS] or revised EIFS algorithm), it would be advantageous to have these data files accessible through the analytical programs. Any Department of Commerce or related data are still better accessed through the existing file structures of EIFS (with respect to the use of ETIS as a basic framework for impact analysis).

A detailed study for a LIMITED SAMPLE (Connecticut, Pennsylvania, and Alabama) revealed that BLIS, IICEP, and LUC are structured very similarly, especially in definite environmental categories such as air, noise, solid waste, pesticides, and radiation, as opposed to land use or flood control. All three systems contain incorrect or incomplete data (e.g., names and phone numbers of data sources are inconsistent or incorrect).

Some IICEP data are obsolete (e.g., there are discrepancies between data in IICEP and LUC).

If LUC were put "on-line," it could be set up similarly to CELDS. Most IICEP and LUC categories correspond quite well, especially when compared with CELDS.

A pilot IICEP system which can be accessed by region, state, general category, and subcategory is currently on line. The user can search for keywords through a context searching system. A problem of the current directory system is that it has too many references (i.e., to avoid listing the same information several times, it often refers the

user to a different listing to obtain information). This problem could be solved easily by a computerized system.

If the centralization concept is implemented, each system should be entered separately in the list of available ETIS programs. Although ETIS software can be shared (especially CELDS), combining commands or codes would be confusing to the user. No significant differences in software development would occur under either the consolidated or the separate-system approach. Most software has already been developed and would require minor modification to insure compatibility.

4 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Study of several ETIS subsystems has revealed interesting overlaps in their computer system designs and in their usage and system maintenance requirements. IICEP, LUC, CELDS, and BLIS are functionally similar enough to warrant coordinating them to avoid redundancy. The TAB A-1 system is significantly different from IICEP, LUC, CELDS, and BLIS, while CHIS differs from them in its level of geographic concern. Therefore, the system designs of TAB A-1 and CHIS should be considered separately.

If the centralization concept is implemented, each system should be entered separately in the list of available ETIS programs. While existing ETIS software and data files may be shared, any attempt to combine or alter commands or codes (to produce one overall system) would create unnecessary confusion.

IICEP, BLIS, CHIS, and LUC have the following system configuration similarities:

1. They store names, addresses, and phone numbers
2. They require a state-level geographic designation
3. They require keyword limitations to the geographic search, although different category types are required
4. Their updating requirements are basically the same (consisting of agency mailing and correspondence). Centralization would create several efficiencies from the standpoint of both Army and Air Force users. More tools could be provided by a central source (in this case, ETIS); this would prevent duplication of effort in keeping essentially the same data files current. From the updating standpoint, one team of operators could maintain all the data files; the marginal costs of adding new systems would be significantly less than the first increment cost. Clarification of this point is provided through a CELDS example. Approximately 1 man-year of effort per year is needed for adequate CELDS update, while other systems could be maintained for approximately 1/4 man-year per year for each system. This decreased marginal cost is due to reduced logistical problems and increased variation in activities (which are conducive to greater worker productivity).

The combination of computer commands for accessing any combination of these systems should be discouraged. Too often, simplicity and system specificity are neglected in the interest of a globally applicable system ("bigger is better") to the detriment of system users. The user normally has a well-defined, specific reason for system inquiry,

and the interface should reflect this without the complications which are often introduced by conflicting or contradictory subsystem requirements.

Recommendations

If these systems are centralized, CHIS and TAB A-1 should remain as separate subsystems. BLIS, LUC, and IICEP should share updating and maintenance with CELDS and possibly CHIS.

There should be a complete check of all agency names, addresses, and phone numbers before sharing information or data files among systems.

A system should be developed for regularly updating information in all ETIS subsystems whose data change frequently.

REFERENCES

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- Urban, L. V., et al., Computer-Aided Impact Analysis for Construction Activities: User Manual, Technical Report E-50/ADA008988 (CERL, March 1975).
- van Weringh, J., et al., Computer-Aided Environmental Legislative Data Systems (CELDS) User Manual, Technical Report N-56/ADA061126 (CERL, September 1978).
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- Webster, R. D., et al., Development of the Environmental Technical Information System, Interim Report E-52/ADA009668 (CERL, April 1975).
- Webster, R. D., et al., The Economic Impact Forecast System -- Description and User Instructions, Technical Report N-2/ADA027139 (CERL, June 1976).

APPENDIX A

SAMPLE SESSION OF IICEP

WHAT NEXT?
FIND GSA
26 FOUND

WHAT NEXT?
AND LAND USE
153 FOUND
3 IN CURRENT LIST

WHAT NEXT?
SHOW

PC #489

AGENCY:
GSA

SUB-AGENCY:
PUBLIC BUILDINGS SERVICE

STATE:
US

TOPIC:
LAND USE
NATURAL RESOURCES
GENERAL

SUB-TOPIC:
PLANNING
LAND MANAGEMENT
COORDINATION

PROGRAM:
RPA
RPD

ROY MARCO, ASSISTANT COMMISSIONER
REAL PROPERTY (7-77)
GENERAL SERVICES BUILDING
EIGHTEENTH AND F STREETS, N.W.
WASHINGTON, DC 20405
(202) 566-1110

PC #490

AGENCY:
GSA

SUB-AGENCY:
PUBLIC BUILDINGS SERVICE

STATE:
US

TOPIC:
LAND USE

SUB-TOPIC:
PLANNING

PROGRAM:
AICUZ
RPD

ROBERT V. OSTROM, DIRECTOR
LAND USE PLANNING STAFF (7-77)
GENERAL SERVICES BUILDING
EIGHTEENTH AND F STREETS, N.W.
WASHINGTON, DC 20405
(202) 566-1100

APPENDIX B

EXAMPLE OF TAB A-1 INFORMATION

4.1.1.2 POPULATION DISTRIBUTION BY AGE AND SEX FOR COMMUNITY AND BASE MILITARY PERSONNEL & DEPENDENTS CIVILIANS WORKING ON-BASE & THEIR FAMILIES COMMUNITY/COUNTY

	MALE	FEMALE	NO.	%	MALE	FEMALE	NO.	%	MALE	FEMALE	NO.	%
TOTAL	3522	186	3708	100	657	312	969	100	36,916	38,367	75,283	100
0-4	NA	NA	0	0	NA	NA	0	0	3,408	3,217	6,625	8.8
5-9	NA	NA	0	0	NA	NA	0	0	4,201	3,882	8,083	10.7
10-14	NA	NA	0	0	NA	NA	0	0	4,357	4,152	8,504	11.3
15-19	211	24	235	6.4	2	8	10	1.0	3,544	3,588	7,132	9.5
20-24	1239	0	1239	33.4	16	17	33	3.4	2,984	3,201	6,185	8.2
25-29	803	111	914	24.7	29	30	59	6.1	2,425	2,511	4,936	6.6
30-34	470	43	513	13.8	62	31	93	9.6	2,187	2,508	4,695	6.2
35-39	446	4	450	12.1	48	42	90	9.3	2,274	2,272	4,546	6.1
40-44	269	2	271	7.3	102	57	159	16.4	2,116	2,368	4,484	5.9
45-59	84	2	86	2.3	369	119	488	50.4	5,631	6,103	11,734	15.6
60+	NA	NA	0	0	29	8	37	3.8	3,794	4,565	8,359	11.1

MEDIAN

AGE NA NA 0 0 NA NA 0 0 24.9 27.3 26.1 NA

(REFERENCE: 1970 CENSUS OF POPULATION - STATE OF FLORIDA)

ADVANCED PERSONNEL DATA SYSTEM - CBPO, CIVILIAN PERSONNEL MANAGEMENT

INFORMATION SYSTEM - CCPO

NOTE: DATA ON ALL MILITARY DEPENDENTS AND CIVILIAN FAMILIES IS NOT

AVAILABLE WITHIN EXISTING COMPUTER CAPABILITIES)

4.1.6 INCOME LEVELS-(FAMILY)

INCOME	MILITARY PERSONNEL		CIVILIAN PERSONNEL WORKING ON-BASE		COMMUNITY/COUNTY FAMILIES	
	NUMBER	%	NUMBER	%	NUMBER	%
LESS THAN \$5,000	218	5.9	0	0	5,579	28.2
\$5,000 - \$9,999	2580	69.6	259	26.5	8,075	40.8
\$10,000 - \$14,999	488	13.1	560	57.4	4,037	20.4
\$15,000 - \$24,999	417	11.2	146	15.0	1,684	8.6
\$25,000 - \$49,999	1	0.2	11	1.1	356	1.7
OVER \$50,000	0	0	0	0	69	0.3
BELOW POVERTY	12	.32	0	0	2,952	14.9
MEDIAN	\$5,377	.26	\$7,861	.71	\$7,416	NA

(REFERENCE: 1970 CENSUS OF POPULATION, GENERAL SOCIAL & ECONOMIC CHARACTERISTICS)

4.1.7 OCCUPATION BY CATEGORY

CATEGORY	MILITARY PERSONNEL		CIVILIANS WORKING ON-BASE		COMMUNITY/COUNTY	
	NUMBER	%	NUMBER	%	NUMBER	%
PROFESSIONAL, TECHNICAL	1167		214		3,135	
MANAGERS, OFFICIALS, PROPRIETORS	173		36		2,770	
SALES	189		25		1,966	
CLERICAL	345		294		3,909	
CRAFTSMEN, FOREMEN	1680		397		3,860	
OPERATIVES, EXCEPT FOREMEN	1		15		1,912	
TRANSPORTATION, EQUIPMENT EQUIP. OPERATIVES	157		65		867	
LABORERS, NON-FARM	0		144		1,687	
FARM WORKERS	0		0		87	
SERVICE WORKERS	61		225		3,688	
TOTAL	3773		1415		23,881	

(REFERENCE: 1970 CENSUS)

ADVANCED PERSONNEL DATA SYSTEM - CBPO

CIVILIAN PERSONNEL MANAGEMENT INFORMATION SYSTEM - CCPO)

APPENDIX C

SAMPLE SESSION OF CHIS

WELCOME TO THE CLEARINGHOUSE INFORMATION SYSTEM

FIRST COUNTY OR REGION (TYPE ? FOR HELP): WINNEBAGO, IL
NEXT COUNTY (OR <CR> IF DONE): CARTER, TN
NEXT COUNTY (OR <CR> IF DONE): WASHINGTON SMSA
NEXT COUNTY (OR <CR> IF DONE): STATE OF OKLAHOMA
NEXT COUNTY (OR <CR> IF DONE): LINCOLN, NB
NEXT COUNTY (OR <CR> IF DONE): COOK, IL
NEXT COUNTY (OR <CR> IF DONE):

DIVISION OF BUDGET AND MANAGEMENT SYSTEMS
DISTRICT BUILDING, ROOM 423
1350 E STREET, N.W.
WASHINGTON, DC 20004

METROPOLITAN WASHINGTON COUNCIL
OF GOVERNMENTS
1225 CONNECTICUT AVENUE, N.W.
WASHINGTON, DC 20036

DEPARTMENT OF STATE PLANNING
301 WEST PRESTON STREET
BALTIMORE, MD 21201

NORTHERN VIRGINIA PDC
7309 ARLINGTON BOULEVARD, SUITE 300
FALLS CHURCH, VA 22042

FIRST TENNESSEE-VIRGINIA DEVELOPMENT DISTRICT
27 NORTH BOONE STREET
JOHNSON CITY, TN 37601
(615) 928-0224

NORTHEASTERN ILLINOIS PLANNING COMMISSION
470 WEST MADISON STREET
CHICAGO, IL 60606
(312) 454-0400

ROCK VALLEY METROPOLITAN COUNCIL
401 WEST STATE STREET
ROCKFORD, IL 61101
(815) 963-6010

DEPARTMENT OF ECONOMICS AND COMMUNITY AFFAIRS
STATE GRANT-IN-AID CLEARINGHOUSE
5500 NORTH WESTERN
OKLAHOMA CITY, OK 73118

STATE OFFICE OF PLANNING AND PROGRAMMING
STATE CAPITOL
BOX 94601
LINCOLN, NE 68509
(402) 473-6491/6671

APPENDIX D

EXAMPLE OF LUC INFORMATION FOR THE STATE OF ARIZONA

ARIZONA

- | | | |
|--|--|---|
| <p>1. Statewide Planning (Coord.)</p> <p>Dennis A. Davis
Program Manager
State Planning
Office of Economic Plng. & Dev.
1700 W. Washington, 4th Floor
Phoenix, AZ 85007</p> <p>(602) 271-5094</p> | <p>1. Statewide Planning (Coord.)</p> <p>Andrew L. Bettwy, Commissioner
Land Department
1624 West Adams Street
4th Floor
Phoenix, AZ 85007</p> <p>(602) 258-4621</p> | <p>1. Statewide Planning (Coord.)</p> <p>Dr. Brent Brown, Exec. Dir.
Power Plant Siting Comm.
Office of Econ. Planning & Dev.
1700 W. Washington St.
Phoenix, AZ 85007</p> <p>(602) 271-5371</p> |
| <p>2. Statewide Planning (A-95 Review)</p> <p>Dennis A. Davis
Program Manager
State Planning
Office of Economic Plng. & Dev.
1700 W. Washington, 4th Floor
Phoenix, AZ 85007</p> <p>(602) 271-5094</p> | <p>2. Statewide Planning (A-95 Review)</p> <p>Dr. Brent Brown, Exec. Dir.
Power Plant Siting Comm.
Office of Econ. Planning & Dev.
1700 W. Washington St.
Phoenix, AZ 85007</p> <p>(602) 271-5371</p> | <p>3. Coastal Zone Management</p> <p>Not Applicable</p> |
| <p>*4. Wetlands Management</p> <p>Robert Jantzen, Director
AZ Game & Fish Comm.
2222 W. Greenway Road
Phoenix, AZ 85023</p> <p>(602) 942-3900</p> | <p>*5. Floodplain Management</p> <p>State Water Engineer
AZ Water Comm.
222 N. Central
Suite 800
Phoenix, AZ 85004</p> <p>(602) 258-7561</p> | <p>5. Floodplain Management</p> <p>Andrew L. Bettwy, Commissioner
Land Department
1624 West Adams Street
4th Floor
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| <p>6. Surface Mining Regulations</p> <p>John Jett, Director
Dept. of Mineral Resources
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Phoenix, AZ 85007</p> <p>(602) 271-3791</p> | <p>7. Agricultural Lands Classification</p> <p>Thomas G. Rockenbaugh
State Conservationist
Soil Conservation Service
230 N. 1st Avenue
300N Federal Building
Phoenix, AZ 85025</p> <p>(602) 261-6711</p> | <p>8. Forest Lands Management</p> <p>Dennis Davis
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State Planning
Office of Economic Plng. & Dev.
1700 W. Washington, 4th Floor
Phoenix, AZ 85007</p> <p>(602) 271-5094</p> |
| <p>9. Recreation Lands Management</p> <p>Roland H. Sharer
State Liaison Officer
AZ Outdoor Rec. Coord. Comm.
4433 N. 19th Ave. #203
Phoenix, AZ 85015</p> <p>(602) 271-5913</p> | <p>9. Recreation Lands Management</p> <p>Mike Rames, Director
AZ State Parks Board
1688 W. Adams
Phoenix, AZ 85007</p> <p>(602) 271-4174</p> | <p>*10. Differential Assessment Laws</p> <p>Director
AZ Dept. of Revenue
Capitol Building
West Wing
Phoenix, AZ 85007</p> <p>(602) 271-3393</p> |
| <p>11. Historic/Archaeologic Sites</p> <p>Dorothy H. Hall, Chief
Heritage Conserv. Section
AZ State Parks
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