

**1996 Condensed**

**Information Management**

**Annual Plan**

**(IMAP)**

**Analysis**

**Department of**

**Natural Resources**

**IMC**

September 1996

## Preface

This analysis was produced by the staff of the Commission on Information Management (IMC) through a standard process. This process is changed whenever an opportunity is identified to improve fairness and accuracy. Each member of the staff reads the material submitted by the department. The entire staff then meets to review the plan and projects. One staff member is selected to take notes of this discussion, while continuing to participate actively in the discussion, and to produce a draft analysis. The review is a very thorough and open evaluation of the department's submission in the context of previous plans and projects. The review follows a set of structured discussion points approved by the IMC. The published analysis that is produced from a series of drafts does not represent the view of any one staff member. It is the sum of the decisions made collectively by the staff in an attempt to provide the best possible recommendation to the Commissioners of the IMC. Final IMC recommendations are forwarded to the Office of State Planning and Budgeting and the Joint Budget Committee for further action.

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## Agency Overview

(Most of the contents of this Agency Overview is from the 1996-97 Appropriations Report, Colorado Joint Budget Committee.)

The Department of Natural Resources includes the following agencies: Executive Director's Office, Minerals and Geology, Geological Survey, Oil and Gas Conservation Commission, State Board of Land Commissioners, Parks and Outdoor Recreation, Water Conservation Board, Water Resources Division, Division of Wildlife, and Soil Conservation Board. The Department is responsible for encouraging the full development of the state's natural resources to the benefit of Colorado citizens, in a manner consistent with realistic conservation principles.

### **EXECUTIVE DIRECTOR'S OFFICE**

The Executive Director's Office is responsible for the overall management and direction of the Department. Functional areas include administration, budgeting, auditing, accounting, automated data processing, personnel, and federal billings. Also included are the Resource Mitigation Bank and the Youth in Natural Resources Program.

### **DIVISION OF MINERALS AND GEOLOGY**

The Division of Minerals and Geology is responsible for environmental control of mining activities in the state. The purpose is to ensure that mining operations are environmentally sound and that affected lands can be returned to a beneficial use. The functions are divided into three program areas: coal program and administration, which concerns surface coal operations; minerals program and administration, which includes sand and gravel, oil shale, uranium, and metal mining operations; and mines program and administration, which concerns the implementation of health and safety laws that apply to mining operations. Included in the coal program is the inactive mines section which addresses the hazards and environmental problems arising from abandoned mines.

### **COLORADO GEOLOGICAL SURVEY**

The Colorado Geological Survey is statutorily required to advise state and local governmental agencies on geologic problems; to inventory and analyze the state's mineral resources; to promote economic development of mineral resources; to

determine areas of geologic hazards that could affect lives and property; to collect and preserve geologic information; and to prepare, publish and distribute reports, maps and bulletins.

## **OIL AND GAS CONSERVATION COMMISSION**

The Oil and Gas Conservation Commission has the authority to regulate the oil and gas industry in Colorado. The six members of the Commission are appointed by the Governor and confirmed by the Senate. The goals of the Commission are to promote public health, protect the environment from pollution, and to protect the interests of owners and producers. The Commission is authorized to promulgate rules and regulations for the inspection of oil wells and for the promotion of health and safety of persons at an oil well. The Commission is funded by a levy placed on the market value of produced oil and gas, a drilling permit fee, and an annual application filing fee for gas well pricing.

## **STATE BOARD OF LAND COMMISSIONERS**

The State Board of Land Commissioners is responsible for the direction, management and disposition of the public trust lands in the state. These lands include approximately three million acres of surface rights and four million acres of mineral rights. The Board generates revenue from these lands for eight trust funds and eight income funds. The primary recipients of public trust land revenues are public school districts in Colorado.

## **DIVISION OF PARKS AND OUTDOOR RECREATION**

This Division of Parks and Outdoor Recreation is responsible for managing the state's parks and recreation areas. This includes maintenance, visitor services and safety, acquisition and administration of real estate, and the administration of the Snowmobile Program, Off Highway Vehicle Program, Boat Safety Program, Recreational Trails Program, Land and Water Conservation Fund grants, and the Natural Areas Program.

## **COLORADO WATER CONSERVATION BOARD**

The Colorado Water Conservation Board's statutory mandate includes water conservation, development of water projects, flood prevention, and protection of the state's major river basins. Functional programs are: interstate compact commission activities; state financed water projects; water development planning and coordination; flood plain management; instream flow appropriations; hydrologic investigations; and water conservation.

## **DIVISION OF WATER RESOURCES**

The Division of Water Resources (State Engineer) is responsible for the distribution and the administration of the state's water resources. This responsibility includes the collection of all hydrographic and water resource data; implementation of the state's dam safety program; the granting of permits for the use of groundwater; coordination with federal, state, and local government entities to ensure full utilization of Colorado's water; the development and utilization of water rights litigation; the promulgation of rules and regulations; and the implementation of interstate compacts.

## **DIVISION OF WILDLIFE**

The Division of Wildlife is responsible for managing, protecting, enhancing and preserving wildlife and habitat for both game and nongame species. Funding for Division of Wildlife programs comes from hunting and fishing license fees, the nongame state income tax checkoff, and from federal excise tax funds. The appropriation reflects the continued Memorandum of Understanding between the Joint Budget Committee and the Division of Wildlife.

## **SOIL CONSERVATION BOARD**

The Soil Conservation Board is composed of nine members. Eight members are selected from the ten watersheds of the state by membership of local soil conservation districts, and one member is appointed by the Governor. The Board is responsible for providing a program of soil and water conservation by the control of wind and water erosion, the prevention of floods and the preservation of adequate underground water reserves.

Operating Budget and FTE (95-96 and 96-97)\*

Division	1995-96		1996-97	
	Appropriation	FTE	Appropriation	FTE
Executive Director	\$15,553,337	60.6	\$16,391,153	60.6
Minerals & Geology	3,790,867	66.5	4,892,982	66.5
Geological Survey	2,116,079	37.0	2,879,724	37.0
Oil & Gas Conservation Comm.	2,132,941	35.0	3,521,693	35.0
State Board of Land Comm.	1,811,370	29.0	1,846,411	29.0
Parks & Outdoor Recreation	17,311,270	173.4	18,603,689	182.7
Water Conservation Board	2,549,623	31.0	2,965,716	31.5
Water Resources	12,560,986	230.2	13,791,635	243.1
Wildlife	54,501,149	715.2	54,668,536	708.5
Soil Conservation Board	597,924	7.0	640,427	7.0
<b>Total</b>	<b>\$112,925,546</b>	<b>1,384.9</b>	<b>\$120,201,966</b>	<b>1,400.9</b>
General Fund	22,709,244	20.1%	24,078,135	20.0%
Cash Funds	64,960,822	57.5%	71,273,506	59.3%
Cash Funds Exempt	14,536,309	12.9%	13,562,691	11.3%
Federal Funds	10,719,171	9.5%	11,287,634	9.4%

\*FY 1996-1997 Appropriations Report, Colorado Joint Budget Committee

## Observations, Issues, and Concerns

The Department of Natural Resources continues to make significant progress in the management of its information services. The most important accomplishment this year is the submission of a single project that encompasses several IS projects. This project has been assigned the Department's highest priority which indicates the Department's recognition of the significance of IS to the Department. Other important accomplishments include the hiring of a very experienced and capable Geographic Information Systems (GIS) coordinator for the Department and the removal of the last Wang.

The IS personnel resources in Natural Resources are decentralized and this continues to result in some lack of unified planning across the divisions. Filling the GIS coordinator position is an especially strong strategic move for the Department that will help increase cooperation and coordination between all the divisions as they increase and accelerate their use of GIS. The Department is encouraged to continue to explore more efforts to centralize other IS functions such as a data base administrator. A departmental DBA would bring more unity to the Department by standardizing on common database products, departmental and divisional data models, and standard definitions of common data elements.

The Department has for many years depended on Wang computers for many of its important IS functions. The IMC staff felt that this has presented a serious risk to the Department in recent years. The Department has moved all applications off the Wang to a more stable platform. These applications will now be enhanced to be more closely aligned with the Department's business requirements. While this project was slow in getting started, the Department has completed a significant milestone with the physical removal of the Wang.

The divisions of the Department of Natural Resources have historically not worked closely together in a coordinated fashion. This lack of coordination may have been encouraged to some extent by moving the IS personnel out to the divisions several years ago. The current IS director has made substantial progress in bringing the divisions together by organizing cross-divisional planning committees that meet to understand and act on issues that are important to the whole Department. This has helped the divisions understand how their common mission to manage the State's natural resources is a greater strength than are the differences between the divisions. The Department would significantly benefit from stronger control and coordination at the central IS level.

Much of the Department's technical direction is based on sound technology that covers a wide range of areas: ESRI ARC/Info for GIS, TCP/IP for data communication protocol, Informix and Informix 4GL for DBMS and new development,



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and COBOL for legacy systems. Other portions of the Department's technology direction have not been as stable: kiosks and imaging/OCR. To make significant progress, the Department needs a strong, coordinated effort that is supported by projects focused on a thorough analysis, a strong business case, and sound technologies. The single, combined project being submitted this year is a step in that direction.

Last year, the IMC Staff noted: "Neither Department nor IS Unit priorities have been assigned to any projects. Projects appear to be slipping their schedules and this may be due to this lack of focus on what is important to the Department, not just to the divisions." This year the Department has combined several major IS projects into one departmental initiative and assigned it the Department's highest priority. This is a very important step for the Department that could have enormous impact throughout the divisions by recognizing the strategic significance of IS in accomplishing the Department's long range goals.

The WINS/Colorado River Decision Support System is a good example for the Department to model. This project continues to be on schedule and on budget after several years of development. This project is extremely well planned and managed. There is much the Department can learn from this project.

The Department needs to build a conceptual framework that, at a minimum, consists of an overarching data architecture encompassing all divisional interests, a long-term network design, and a public information access strategy. This framework would unite all the Department's projects in a common goal of superior customer service. These components of an IS infrastructure need to be built and nurtured by a strong central IS function. The divisions should be able to look to the Department's IS resources for guidance in conceptualizing projects so they are broadened beyond division interests and work towards the Department's goals.

## Other Concerns - Statewide Issues:

The IMC staff included the following comments and questions in every department or agency IMAP analysis beginning last year. Please provide updates on these items for your department.

### YEAR 2000:

It is imperative that all of the State's business applications, packaged applications, and system software be able to handle the Year 2000 date change. The problem is that most applications currently handle dates as two-digits without the ability to distinguish between 19xx and 20xx centuries. The effort required to resolve this problem could be extremely time consuming and expensive. Departments need to assess the impact of the Year 2000 on its existing applications now and develop practical action plans to solve this problem.

**What steps is the department taking to respond to the Year 2000 risk?  
Did the Department respond to the OSP&B Year 2000 survey?**

### DISASTER RECOVERY/BUSINESS RESUMPTION:

An IMC policy issued July 30, 1990 requires agencies with information systems operations to have a tested, comprehensive disaster recovery plan in place by June 30, 1993. This issue becomes even more important with the increased number of mid-range and LAN systems throughout state government. With the proliferation of end-user computing and distributed architectures, all State agencies need to assess their current risk and develop a business resumption strategy. Topics for research and analysis to develop a business resumption plan include: equipment recovery and replacement, temporary office space, recovery of software and data, personnel deployment, and telecommunications lines.

**Does the department have a tested disaster recovery plan in place?  
What steps has the department taken to ensure business resumption in the case of a disaster?**

### ARCHIVING/PURGING:

Increased volumes of data cause deterioration of service to a department's users, increased time to complete backups, and the need for more disk storage and faster processors. Failure to archive and purge data results in unneeded expense to the State of Colorado.

Does any continued growth of disk usage at GGCC correspond to increases in the department's client base? Has the department established any purge criteria for its applications and data? Are all new department systems being developed with archiving and purging criteria? Has this criteria been reviewed by the State Archives to meet the legal requirements for retaining information?

SECURITY:

With the proliferation of statewide e-mail connectivity, on-line public access, the need for information sharing between agencies, and the move to connect agencies to the Internet, core business data must to be more comprehensively protected. Protective measures include user authentication and passwords, changing user passwords on a regular basis, firewall installation, banner page stating security policy at sign-on, session time-outs for inactive terminals, changing dial-in server phone number on a regular basis, call-back, encryption, and connection usage audits. This list is not exhaustive. The department should consider other measures it sees fit.

What steps is the department taking to ensure protection of its systems and data against illegal intrusion and attack?

Project Summary

The Project Summary for the Department of Natural Resources follows.

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**IMC Summary Report - Information Management Plans, Decision Items, and Projects (96-97)**

Project Description	Sunk Costs	96-97 Project Cost	97-98 Project Cost	Total Project Cost	Total Benefits	97-98 Budget Decision Item Amount	Staff Recomm.	Team Recomm.	IMC Decision	Comments
Natural Resources										
DNC Technology Initiative	136,745	23,100	1,631,550	2,467,145	12,193,120	694,050	On Hold			Completion of feasibility study
<b>Total</b>	<b>\$136,745</b>	<b>\$23,100</b>	<b>\$1,631,550</b>	<b>\$2,467,145</b>	<b>\$12,193,120</b>	<b>\$694,050</b>				

Information Management Commission

Budget Decision Item Project Summary

Department: Natural Resources

Project - DNR Technology Initiative

Description: The Department states: "A department-wide technology initiative to improve customer service by providing multi-user access to critical information; disaster recovery capability for original source documents; and fully relational databases."

This project combines several important projects that will provide imaging of important water related documents, imaging of Oil and Gas Commission documents, and enhancement of systems that were formerly on the Wang computer.

Costs:	Sunk Costs	FY 96-97	FY 97-98	Total Project Cost
Personal Services	\$23,400	\$23,100	\$1,194,000	\$1,821,500
FTE	0.0	0.0	0.0	0.0
Operating Expense	35,345	0	31,250	161,345
ADP Capital	78,000	0	406,300	484,300
<b>Total</b>	<b>\$136,745</b>	<b>\$23,100</b>	<b>\$1,631,550</b>	<b>\$2,467,145</b>
Base Funds				
New Funds			694,050	694,050
Other Funds	136,745	23,100	937,500	1,773,095
Department Proposed	\$0	\$0	\$0	\$12,193,120
Benefits:				

New Funds: \$694,050 in new funds are required for this project for FY 97-98. The project will require \$1,773,095 in new funds for the five-year period ending FY 00-01.

Intangible Benefits: Significant savings will be realized in reduction of costs for record retrieval.

Comments: An imaging project was originally approved by the IMC in 1992 as a pilot project for \$48,000. It was approved again as a continuing project for

\$45,000 in 1994. The pilot project was scheduled in last year's plan to be completed June 30, 1995, more than two years after the original schedule. No report or status was received on the results of this pilot.

Last year the IMC recommended the Department halt the pilot imaging project and initiate a feasibility study before proceeding with any imaging initiatives.

A team was also created to assess the Department's imaging needs. An Imaging Work Plan was produced that describes each agency's requirements and will form the basis of an imaging RFP.

The Department has spent the past year performing a thorough feasibility study with the assistance of many different interests. This study will be published in early September and will be reviewed at the December Team Meeting.

**Recommendation:** The IMC staff recommends putting this project on hold until the feasibility study is submitted and reviewed.