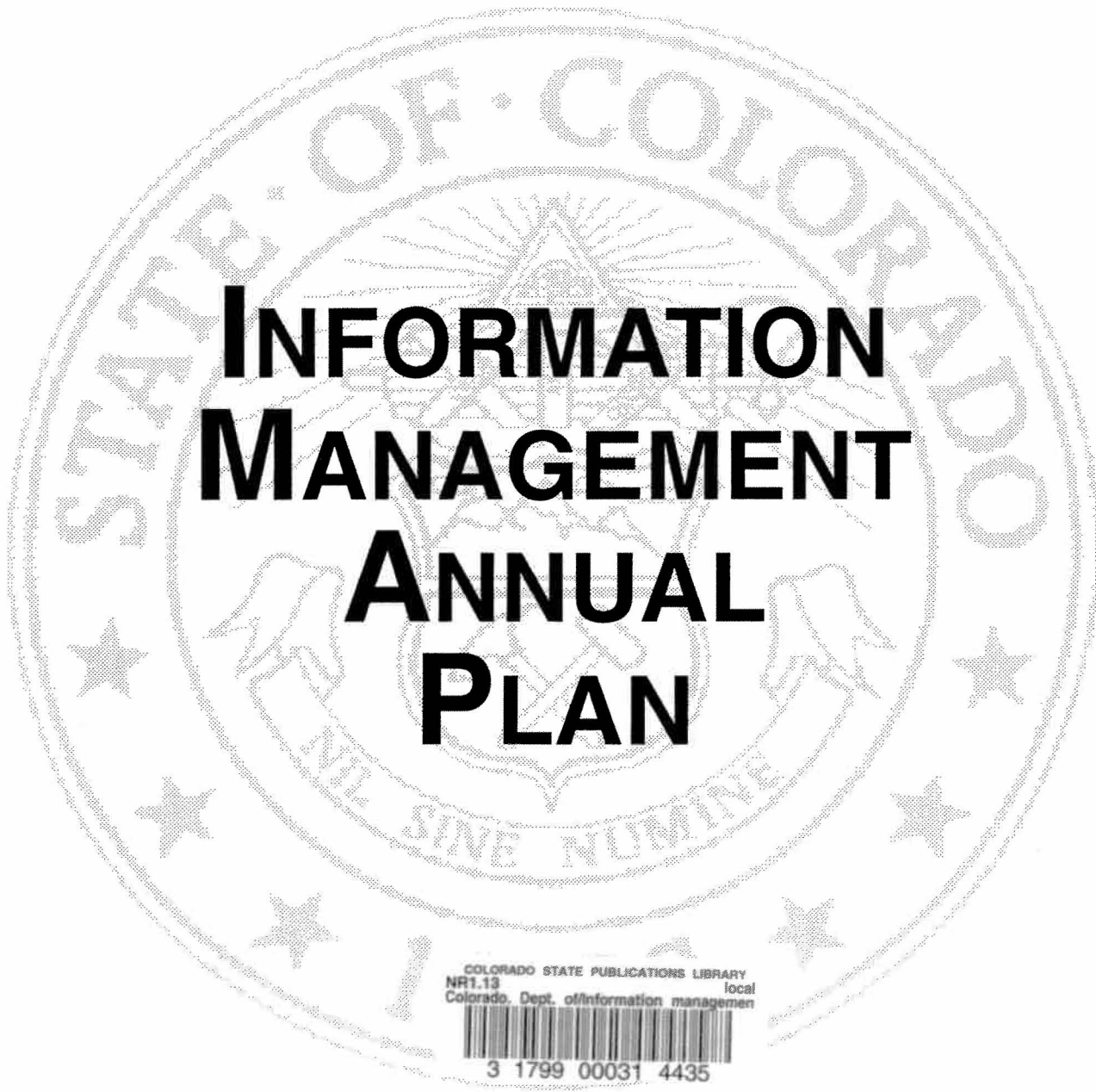


NR 1.13/1996
C-1

DEPARTMENT OF NATURAL RESOURCES



INFORMATION MANAGEMENT ANNUAL PLAN

COLORADO STATE PUBLICATIONS LIBRARY
NR1.13 local
Colorado, Dept. of information managemen

3 1799 00031 4435

1996

Table of Contents
1996 Condensed Information Management Annual Plan

I.	Summary of Information Systems Plans for	1
	FY 96-97 and FY 97-98	
II.	Summary of 1995-96 Accomplishments	1
Appendix A: Format Inventory		
	Format 1015 Technical Architecture (Network Diagram)	14
	Format 1030 Hardware Inventory Summary	15
	Format 1050 Software Inventory Summary	16
	Format 3040 Staffing Requirements	18
	Brief Summary of Base Budget Projects	19
	Notes: Format 5000 Series	25
	Format 5010 Base Budget Analysis Work Sheet	26
	Format 5020 New Funds Analysis Work Sheet	28
	Format 5030 Total Funds Analysis Work Sheet	30
	Format 7000 DNR Technology Initiative	31
	Appendix B: Previous Year's Accomplishments	36
	Appendix C: Department Technology Initiative Decision Item	44
	Appendix D: Department Imaging Workplan	56
	Appendix E: Feasibility Studies*	
	Division of Water Resources: Imaging	
	State Land Board: Wang Migration, Phase II	
	Oil and Gas Conservation Commission: Imaging and Wang Migration, Phase II	

* To be delivered to the Information Management Commission by September 12, 1996.

I. Summary of Information Systems Plans FY 96-97 and FY 97-98

Overview

The DNR Tactical IS Plan for FY 96-97 and FY 97-98 continues to focus on the five information technology initiatives listed in the FY 93-94 IMAP:

- **Colorado Outdoor Recreation Information System (CORIS)**
- **Colorado Water Information Network System (Colorado WINS)**
- **Geographic Information Systems (GIS)**
- **Wang Migration (WANG)**
- **Technical/Administrative Support (TECH)**

In addition to activities planned for both the current and next fiscal year, the 1996 Condensed IMAP contains accomplishments which occurred in the initiatives listed above during last fiscal year. Accomplishments for FY 92-93, FY 93-94 and FY 94-95 can be found in Appendix D.

II. Summary of 1995-96 Accomplishments

The Tactical Plan documents, year by year, the key accomplishments relative to ITS initiatives. Over time, this chronology of events will provide a quick but thorough understanding of IS activities. Accomplishments will be listed as a series of bullet points to capture the status of IS events.

Plan Year 1995-1996:

CORIS

- Completed the Customer Service Module which allows Conservation Certificates (CCs) to be issued in real time;
- DOW received 23% (70,000) more applications over the 1994 baseline. This increase resulted in only a two week delay in issuing licenses;
- Reduced the amount of data required from customers, when applying for a license, by 60%;
- Reduced the number of steps required to fill out a Limited License application from 20 to 12;
- The images from the scanning process can be viewed by Limited Licensing staff online replacing the need for employees to physically retrieve applications from the central files thereby saving response time to customer inquiries; and

- Completed Harvest Surveys for customer feedback related to their hunting experience; and
- DOW created a Technology Advisory Group (TAG) to provide a forum to set realistic goals and objectives for effective use of technology in the division and to ensure a close customer relationship with the technology unit.

Colorado WINS

- Installed a TCP/IP Wide-Area Network in five of seven water division offices;
- Completed the GIS component of the water well permitting system;
- Completed the water commissioner data collection toolkit project statewide;
- Implemented a comprehensive in-house training program for desktop tools;
- Completed GIS coverage of irrigated acreages on the West Slope;
- Retained the current project manager of Leonard Rice consulting Water Engineers and entered into a contract for the continued management of the Colorado River Decision Support System (CRDSS);
- Developed a detailed budget and scope of work for the first phase of the year 3 development. Developed a preliminary budget and scope for the second phase of the third year of CRDSS development and the fourth development year of CRDSS;
- Boyle Engineering Corporation was added as a new consultant to the CRDSS development team; and
- Completed year 2 activities include population of the relational (i.e. water rights, diversions, streamflows) and spatial databases (irrigated acreage, elevation, structures to support planning activities; created interfaces to relational data through the Internet link; developed a workstation based user interface to spatial data; implemented a consumptive use model and associated user interface for the west slope of Colorado that estimates both crop and non-crop consumptive uses for Colorado's west slope; and developed basin water resource models for the Yampa, White, SanJuan/Dolores and upper Colorado mainstream with consideration of approximately 75% of the current water use in a basin. A graphical user interface has also been developed for these models.

Geographic Information Systems

- Hired a departmental GIS Coordinator, January 1996;
- Created an ArcView demonstration of Chatfield State Park which was presented at the Regional Management meeting, Metro Area Management meeting and Northern Area Management meeting;
- Obtained from Douglas County digital data of roads, trails, bike paths, park boundaries for all State Parks within Douglas County;
- DNR became actively involved in the National Biological Service (NBS) and Colorado Advanced Technology Institute (CATI) projects to use GIS and the Internet to assist local communities (Routt, Moffatt, Ouray and San Miguel counties) in decision making;
- DNR began participating in the Colorado Counties (COCO) organization;
- The Governor's Executive Order reauthorizing the Colorado Geographic Information Coordinating Committee (GICC) that names DNR as the chair is issued, February 1996;
- DNR provided several GIS data themes to the World Wide Web server in Routt county as a part of the NBS/CATI projects;
- GIS Coordinator met with State Parks to discuss implementing their tabular Natural Areas database into GIS and linking this with State Land Board tracts;
- Completed the review of Section 8 of the PlanGraphics report that addresses the legal setting for GIS implementation at DNR;
- GIS Coordinator met with ESRI to discuss developing a statewide master purchase agreement for ESRI products. Presented the initial contract to GIS representatives from the Colorado Department of Transportation (CDOT), the Department of Local Affairs (DOLA) and the Department of Public Health and Environment (DPHE) for their comments. Started the implementation process with the purchasing/contract personnel at CDOT;
- GIS Coordinator met with Bureau of Land Management (BLM) and Great Outdoors Colorado (GOCO) staff to discuss cooperative agreements, database needs and plans between BLM, GOCO and DNR;

- GIS Coordinator began participating in the Colorado Ecosystem Partnership (CEP) project for establishing a GIS data sharing forum and discussed DNR involvement;
- GIS Coordinator participated in the Colorado Rockies Regional Cooperative project which is focused on GIS data sharing and cooperative involvement on a variety of GIS projects occurring within Colorado on an ongoing basis;
- DNR participated in multiple meetings in Telluride, Ridgeway and Steamboat Springs for the NBS/CATI projects to address the issues of data sharing, metadata, and the application of GIS on the Internet;
- Contacted ESRI to provide an ArcView 3 demonstration at Golden Gate State Park for DNR divisions, GOCO and staff from the Information Management Council (IMC);
- Assisted in providing ArcView training for the NBS/CATI project at the Delta County VoTech Center;
- GIS Coordinator participated in a meeting of the Gunnison County Planning Commission. This meeting was a presentation of an ArcView application called "HazView". HazView was developed by the Colorado Geologic Survey (CGS) to provide geohazard information for planning;
- Obtained several themes of geographic data within Eagle, Lake, Chaffee, Fremont and Pueblo counties. These data were consolidated into a ArcView project which is part of the feasibility study for the Rails to Trails Legacy project; and
- DNR began to chair the GICC in July 1996.

Wang Migration

- Completed the conversion of the Parks applications which includes Boats, Snowmobiles and Off Road Vehicles, November 1995;
- Completed the conversion of the Oil and Gas Conservation Commission applications, Colorado Oil and Gas Information Management System (COGIMS), June 1996;
- Completed the conversion of the applications supporting the Division of Minerals and Geology, July 1996; and

- Completed the conversion of the State Board of Land Commissioners applications, Surface Lease Information Management System (SLIMS), August 1996.

Technical/Administrative Support

- Completed the modem upgrade used to access the Campground Reservation System, August 1995;
- Received a grant from the National Biological Service to acquire contracting assistance to develop a World Wide Web presence for the DNR in support of the Governor's Smart Growth initiative, August 1995;
- Received a grant from the Colorado Advanced Technology Institute to develop a process and provide GIS data to county partners to be used in local decision making using the Internet, November 1995;
- Created a department wide Internet Look and Feel committee consisting of public information officers and graphic designers to deal with content issues for a DNR web site, January 1996;
- Provided Internet e-mail service to approximately 800 DNR LAN clients through the point of presence connection at GGCC, March 1996;
- Executive management created Interagency Council (IAC) which consists of the Deputy Director's and the department's Quality Council (QUEST) to deal with operational issues and to serve as advisors to ITS, March 1996;
- Established a department wide Imaging Team and completed a work plan for imaging, May 1996; and
- Continued to replace our Intel 80286 and Wang PCs to comply with the department's desktop standard of a Intel 486 or Pentium machine.

B. Project Plan

This section of the Tactical Plan describes, by ITS initiative, activities for the planning period.

The department is submitting a combined decision item this year in support of the increased cooperation between divisions related to technology planning. We feel that this is significant for a number of reasons. First, the Executive Director, the Deputy Director and the Planning and Budget Director for the department recommended that this combined decision item be the number one priority request for FY 97-98. The recommendation was also approved by the department's Interagency Council (IAC).

Second, a combined initiative enables the department to manage technology planning and implementation as an integrated approach to improving customer service instead of isolated and unrelated requests. Third, the ITS section can manage a single project with multiple, phased components serving the needs of both internal and external customers.

As a part of the preparation of the IMAP we review our previous plan and any other pertinent information that may influence our planning process. This year at the department's annual Division Director's retreat we focused on developing thematic decision items to emphasize the importance of working together on cross cutting issues for our agency.

The continuing and new projects planned for FY 96-97 and FY 97-98 support this concept in planning for the future. One of the over-arching themes for the department was defined as **Information Integration and Exchange**. This theme deals with improving delivery of customer services, internal and external communication, listening to the public and responding, policy development and coordination and strengthening technical capabilities.

The issue of providing public access to DNR data through various delivery systems has received a great deal of attention during the fiscal year just ended. We have entered into grant agreements with both the National Biological Service (NBS) and the Colorado Advanced Technology Institute (CATI) to develop an Internet presence for the department.

These partnerships have produced promising results. The U.S. Department of the Interior invited all 50 states to apply for funding to participate in the NBS for State Partnerships initiative. Of 19 proposals received, four were selected to participate in the pilot project. The NBS grant enabled us to hire a contractor to establish the pilot for DNR in Routt County. The project is intended to develop, exchange and transfer information on biological resources developed at local, state and federal levels. The DNR will report on the variety of local and regional decision-making processes for

which biological resource information is needed. Eventually, the work completed in the pilot will be transferred internally.

The CATI grant compliments the work being done in the NBS grant but extends the scope of work. CATI is supporting the development of Colorado's *Model Framework for GIS Applications of the national Information Infrastructure*. To comply with the requirements of the grant, DNR will identify, define, coordinate, integrate and acquire data and information; develop analytical tools to support local decision-making needs; and distribute data and tools and develop appropriate training modules to promote use and application of decision support systems to local decision-making related to planning and management of growth.

CORIS

The Division of Wildlife (DOW) underwent a thorough management review during FY 94-95 by Deloitte and Touche LLP. Many sweeping changes were recommended by the study. A team was formed to devise a plan to implement these recommendations.

The new organizational structure for the Division of Wildlife has been implemented. Part of this structure called for the creation of a single computer support unit within the division. This was accomplished in July, 1996. The new unit has become involved in discussions related to Phase II or CORIS. The Deloitte and Touche Management Review recommends simplifying the license process. Therefore, Phase II of CORIS development is exploring more efficient and effective ways to simplify the license process and provide improved service to its customers. The emphasis is on inputs and outputs to the recently developed database and production programs. There are three areas of interest under consideration:

- 1) Over-the-counter sales of licenses using a point-of-sale methodology.
- 2) License sales by telephone.
- 3) Limited License Applications received by telephone.

The State Auditor's Office has selected Arthur Andersen LLP to conduct a performance audit of the CORIS development project to be completed by December, 1996. The results should be available after the first on the new calendar year and will be available for review.

As mentioned in last year's plan, one of the key recommendations that emerged from the Deloitte and Touche Management Review was to revamp the DOW's

internal planning, budgeting and evaluation (PBE) system. In response to this recommendation, DOW has developed and evaluated a Request for Proposal (RFP) that included a detailed definition of the new PBE process, functional and technical requirements, cost tracking alternatives, and the required hardware and software standards. A contract has been awarded with implementation to begin in FY 96-97. Some of the specific elements of the selected system include centralizing the PBE process, adopting a "modified zero-based budget" approach, building budgets based on direct labor requirements for specific performance objectives at the cost center level and closely monitoring and evaluating actual vs planned performance. The new Leadership Team at DOW fully supports and is committed to the successful implementation of this system.

Colorado WINS

A number of activities are planned for FY 96-97 and FY 97-98 related to the Colorado Water Information Network System (COWINS). We plan to:

- extend the Wide-Area Network to remaining water division offices to complete the communications infrastructure project;
- acquire and implement a document imaging system which includes scanning all historic water well documents;
- further develop access to water information on the World Wide Web;
- complete the conversion of the dBASE diversion data base to the Hydrobase design in Informix and deliver the data to the Colorado River Decision Support System project;
- enhance the water well permitting system to reflect the changes brought about by the Total Quality Management review; and
- establish a GIS workstation in each water division office to facilitate planning and data quality efforts.

In July, 1996, DNR submitted a Project Sketch 0007 for the Colorado River Decision Support System (CRDSS). Since then it has been decided by management to withdraw this request for new funds in FY 97-98. Instead, the request will be deferred until FY 98-99.

The third year of CRDSS development is scheduled to start in the last half of calendar year 1996 and will focus on development of water administration tools and associated databases, development of a west slope communication system, making practical applications of the CRDSS system, and performing enhancements to the system.

During FY 96-97 a budget and final scope of work definition for the second phase of the third and fourth development years of the CRDSS project will be created. A project manager will be selected for the fourth year of CRDSS development. Additionally, we will select a consultant and enter into a contract for the second phase of the third development year and the fourth year of CRDSS development.

The CRDSS development activities for Year 3 include:

- enhanced basin models for the White, Yampa, Upper Colorado, Gunnison and San Juan/Dolores river basins that consider all current water use;
- first phase of development of a water rights administration tool consisting of a PC based interface with functionality similar to that found in the South Platte Water Rights management system;
- selected enhancements to Year 2 products that include porting the Water Resource Planning Model interface to a PC and adding a photographic backdrop to the CRDSS map library;
- development of a CRDSS tool that would allow the stochastic extension of time series;
- investigation of the costs and nature of potential Year 4 activities including conversion of present functionality of the visual data browser and consumptive use interface to a PC based environment and development of a river forecast module;
- continue user involvement phase and conduct training programs; and
- maintenance of CRDSS interfaces, data and models through the fiscal year.

We also plan to develop an operations and maintenance budget, work plan and staffing plan for the continuation of CRDSS support past FY 97-98.

Geographic Information Systems

The area of GIS promises to be highly productive, visible and essential to the department during the plan years. There has been such a pent-up demand for GIS services, not only in the department, but also externally, that requests for our GIS Coordinator's time exceeds his availability.

The GIS Coordinator position will be funded 100% internally by the end of the calendar year.

Early in 1996, we began drafting a policy concerning GIS data distribution. This policy deals with cost recovery, liability, licensing and data access issues. Along with assistance from the IAC, the GIS Coordinator formulated a departmental disclaimer for all digital data that are distributed from DNR. Both the policy and the disclaimer were reviewed by the Attorney General's Office before finalization.

Internal resources are being shared to leverage expertise in this area. We will be reviewing the internal infrastructure related to GIS to optimize LAN segments for efficient transmission of GIS data.

We also plan to provide support to the following efforts; NBS and CATI grants; the BLM and GOCO partnerships; Rails to Trails Legacy project; and the ongoing collaboration with the Colorado Geographic Information Coordinating Committee (GICC).

Wang Migration

Phase I - STABILIZATION is complete. Additionally, we have identified the tasks necessary to dispose of the Wang system. We have also drafted plans to redesign the physical layout of our computer room.

Planning for Phase II - ENHANCEMENT received a great deal of attention last year. Two enhancement components, one for the State Board of Land Commissioners (SBLC) and the other for the Colorado Oil and Gas Conservation Commission (OGCC), received approval by the IMC, however, each planning effort met with difficulty.

First, during the legislative session, the Joint Budget Committee (JBC), disagreed with the SBLC in the way in which revenues were calculated for their operation. Consequently, the SBLC was not granted the spending authority to complete Phase II in FY 96-97. Second, the OGCC had a revenue shortfall projection for FY

96-97 and had to cancel their plans to proceed with their system enhancement.

The State Land Board and the Oil and Gas Conservation Commission have both received audit comments strongly suggesting the replacement of the production systems supporting their business activities as soon as possible. We continue to be committed to plan for the replacement of these systems consistent with our IT plan.

Technical/Administrative Support

A combined decision item is being submitted as the DNR Technology Initiative for FY 97-98. It is the department's number one priority. The request encompasses two technology components: 1) computer application enhancements for the SBLC and OGCC, and 2) imaging.

The computer application component is Phase II - Enhancements of the original Wang Migration project that was approved several years ago. Updating the applications supporting these two divisions continues to build on the work we began two years ago as a part of moving applications to department standards. This effort requires two sources for funding. One source is from the SBLC cash fund and the other is from the Severance Tax fund created in SB 96-170. The decision item is requesting the spending authority for the SBLC to continue with the enhancements to the Surface Lease Information Management System (SLIMS) in FY 97-98.

The Colorado Minerals, Energy and Geology Advisory (MEGA) Board oversees the spending from the Severance Tax fund. The MEGA Board has given approval to the OGCC to proceed with their plan to enhance the Colorado Oil and Gas Information Management System (COGIMS) in FY 97-98.

Last year a joint decision item for a Document Imaging System was submitted by the Division of Water Resources (DWR) and the Oil and Gas Conservation Commission. Funding problems caused the OGCC to withdraw from the request but DWR continued to pursue the initiative. The request was recommended for disapproval until the project was reconceptualized.

An Imaging Team was created with representatives from all DNR divisions participating to analyze, from a department perspective, imaging needs. The team met for six months with the goal of developing a comprehensive DNR Imaging Work Plan.

Imaging is seen as a potential solution to many agency needs. We have documented, in the work plan, the imaging requirements of seven divisions. The work plan addresses for each division the business background, specific work

units, document access requirements, file information, primary-document information, work flow information, and indexing information. Only DWR and OGCC are ready to move ahead. Other divisions will follow the work plan so that we maintain consistency in our implementation efforts over time.

The imaging component of this year's decision item addresses only the imaging needs for DWR and OGCC. Feasibility studies are being finalized with a target of September, 1996. We expect to use FY 96-97 to develop an RFP in anticipation of receiving funds for implementation to begin in July, 1997.

The tangible benefits of this project are significant. The department calculates savings of approximately \$131,040 per year for manual record retrieval, beginning in FY 98-99, with the implementation of imaging.

Additionally, OGCC has conservatively estimated that increased access to oil and gas information would lead to an increase in oil and gas production of one-half of one percent (0.5%) over current levels. Based on this assumption, if better business decisions are made related to production, the state will experience significant economic impacts. The 1995 Production Value Index in Colorado was \$1,181 million. If this figure is multiplied by 0.5% the results equal \$5.9 million in benefits to the state.

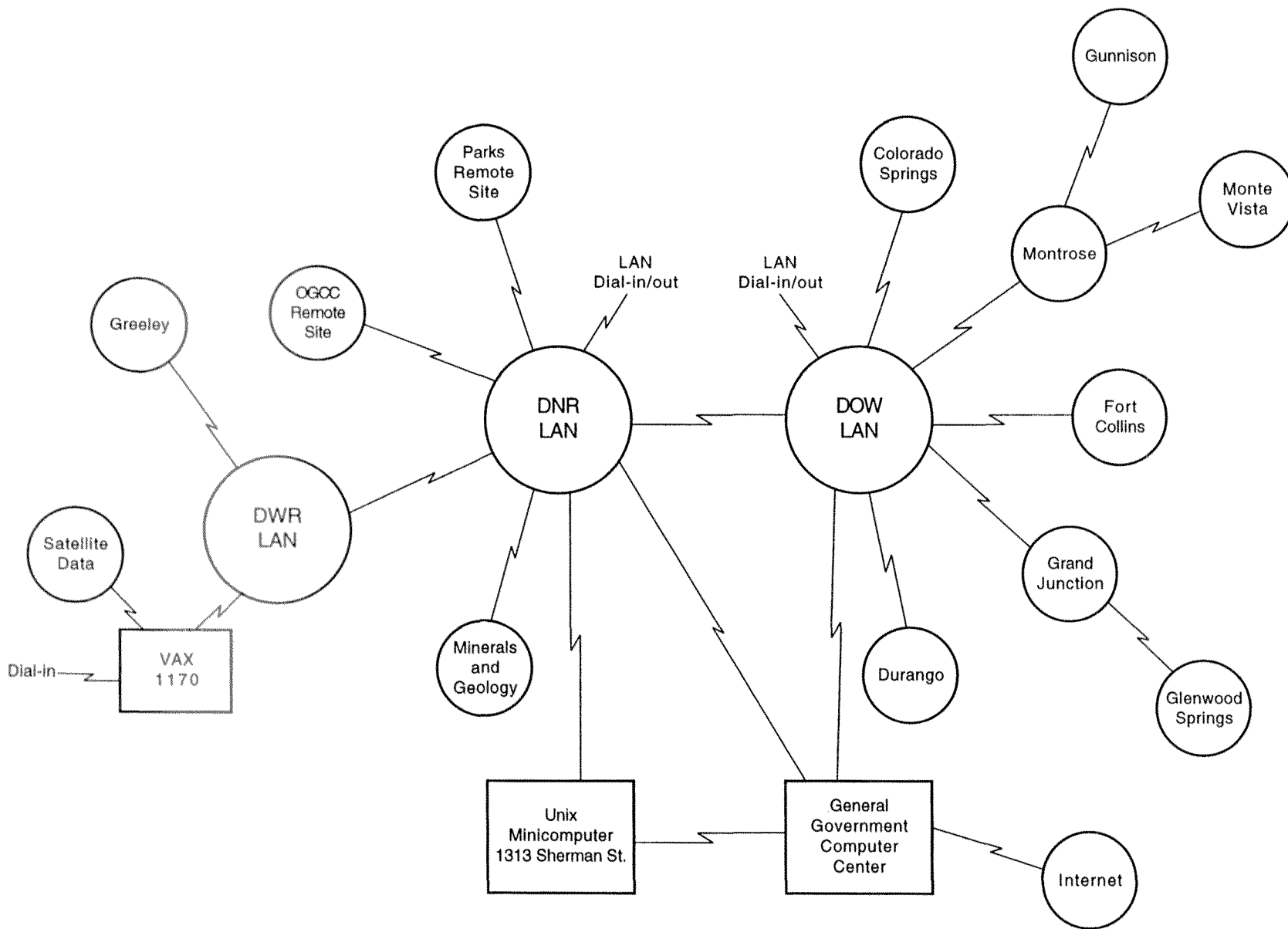
The department continues to pursue a common platform for desktop PCs. We are dealing with this issue internally. The number of Wang PCs and Intel based 80286 machines was reduced substantially last year. We currently have less than 160 machines to replace.

Our participation in the Colorado Outdoor Recreation Resource Project (CORRP) remains active. In the last few years, the Internet has become a better option for sharing information electronically than those options originally envisioned, and the CORRP project has been modified to reflect that new technology. In fact, because of the Internet, CORRP dropped the idea of developing an expensive and complicated "translator" and refocused the project to develop a prototype Internet database/homepage and bring the public land agencies "online." The prototype of this system was completed this summer, and plans are currently underway for the next phase of this effort.

Many of these ideas support a vision that we articulated several years ago related to one stop shopping. We remain committed to this idea and feel that internal planning and cooperation will ultimately enable us to realize our vision.

APPENDIX A

FORMAT INVENTORY



DNR Technology Architecture

June 30, 1996

State of Colorado
Department of Natural Resources
Hardware Inventory Summary
Date: June 30, 1996

Hardware	Count
PCs	
808X-class Machines	10
80286-class Machines	151
80386-class Machines	300
80486-class Machines	580
Pentium-class Machines	334
Portable PCs	231
WANG PCs (These are desk-tops that leave when the VS leaves.)	5
Other PCs (engineering workstations)	29
Macintoshes	16
TOTAL	1,656
Larger Machines	
LAN Servers	38
Mid-Range Systems	12
Mainframe-class Machines	
Peripherals	
Personal Printers	666
Work Group Printers	110
Production Printers	31
Terminals (3270 Type, Etc.)	
Prepared by: Diane Huling Phone #: 866-5485 Approved by: L. Shuford	

Format 1030 Revised 1996

State of Colorado
Department of Natural Resources
Software Inventory Summary

Date: June 30, 1995

Software (by product name and version)	Number of Licenses in Use
Operating Systems	
MS/PC-DOS version 3.x or earlier	116
MS/PC-DOS version 4.x to 6.x	1,504
Windows 3.x	1,013
Windows 95	16
Other PC Operating System or GUI	141
Mac System 6.x or earlier	3
Mac System 7.x	12
Novell 3.x or earlier	
Novell 4.x	
Banyan	13
LAN Manager	
Windows NT	19
Other Network Operating System (Wang)	1
Word Processing	
Word for DOS	1
WordPerfect for DOS	402
Other DOS Word Processors	8
Word for Windows	486
WordPerfect for Windows	388
Other Windows Word Processors	53

Spreadsheets	
Lotus 123 for DOS	85
Quattro Pro for DOS	99
Other DOS Spreadsheets	9
Excel for Windows	502
Lotus 123 for Windows	12
Quattro Pro for Windows	201
Other Windows Spreadsheets	38
Databases	
dBase for DOS	419
Paradox for DOS	11
Other DOS Data Bases	3
dBase for Windows	67
Paradox for Windows	11
Access	452
Other Windows Data Bases	79
Prepared by: Diane Huling	Phone #: 866-5485
Approved by: L. Shuford	

Format 1050 1996

State of Colorado
Department of Natural Resources
Staffing Requirements

CURRENT STAFF				1997-98 STAFF				1998-99 STAFF			
PROJECT	Prog.- S/A	User Suppt.	Totals	Prog.- S/A	User Suppt.	Totals	New FTE Requests	Prog.- S/A	User Suppt.	Totals	New FTE Requests
Maintenance	4.3	8.0	12.3	4.8	9.0	13.8		4.8	9.0	13.8	
<i>Project Category I</i>											
COWINS: Hydrobase	4.0	2.0	6.0	3.5	2.0	5.5		4.0	2.0	6.0	
<i>Project Category II</i>											
COWINS: South Platte											
COWINS: Document Imaging				0.5		0.5					
TECH											
GIS	0.5	0.5	1.0	0.5	0.5	1.0		0.5	0.5	1.0	
<i>Project Category III</i>											
WANG/YEAR 2000	3.2	0.2	3.4	2.7	0.2	2.9		2.5	0.4	2.9	
COWINS: CRDSS	3.0		3.0	3.0		3.0		3.0		3.0	
IS Management			7.0			7.0				7.0	
Operations			5.0			4.0				4.0	
System Programmers			3.3			3.3				3.3	
Total Staff			41.0			41.0				41.0	
Total New FTE to be Requested											

Prepared By: Diane Huling

Telephone #: 866-5485

Approved By: L.J. Shuford

Date: August 14, 1996

*The Total New FTE requested quantities should tie directly to the FTE requested on Format 7000 and Schedule 2D.
Format 3040

Note: Total FTE increased by 5.0 from 1995 due to reallocation of three positions; a PDQ change in one position; and an additional FTE, one of nine, allocated during the last legislative session to enforce rules about the Arkansas River which resulted from the Supreme Court decision in Kansas vs. Colorado.

State of Colorado Department of Natural Resources Base Budget Project Update June 30, 1996	
Project Title: COWINS: Link Water Well Data to GIS (Entire project)	
Category: I <u>XXX</u> II ___ III ___	
New: ___	Continuing: ___
Completed: <u>XXX</u>	
Start Date: August 15, 1995	End Date: March 31, 1996
Total Personal Services:	\$
Total Operating:	\$ 40,000
Total Capital Outlay:	\$
Communities of Interest:	
Benefits: Facilitate well information research activities; enhance efficiency of well permitting process; increase accuracy; improve customer service.	
Prepared by: K. Daugherty Phone#: 866-3585	Approved by: L. Shuford Date: July 31, 1996

State of Colorado Department of Natural Resources Base Budget Project Update June 30, 1996	
Project Title: COWINS: Link Dam Data to GIS	
Category: I <u>XXX</u> II ___ III ___	
New: ___	Continuing: <u>XXX</u>
Completed: ___	
Start Date: January 1, 1998	End Date: June 30, 1998
Total Personal Services:	\$
Total Operating:	\$ 20,000
Total Capital Outlay:	\$
Communities of Interest: Dam safety engineers; water commissioners	
Benefits: Ensure data integrity and accessibility; reduce data redundancy.	
Prepared by: K. Daugherty Phone#: 866-3585	Approved by: L. Shuford Date: July 31, 1996

**State of Colorado
Department of Natural Resources
Base Budget Project Update
June 30, 1996**

Project Title: COWINS: South Platte Water Rights Management System

Category: I ___ II XXX III ___

New: ___ Continuing: ___

Completed: XXX

Start Date: September 1, 1993

End Date: December 31, 1995

Total Personal Services:

\$ 295,580

Total Operating:

\$ 4,950

Total Capital Outlay:

\$ 175,000

Communities of Interest: Municipal water agencies, water user groups, State Engineer's Office staff

Benefits: Improve water rights administration; optimize water resources.

Prepared by: K. Daugherty Phone#: 866-3585

Approved by: L. Shuford Date: July 31, 1996

**State of Colorado
Department of Natural Resources
Base Budget Project Update
June 30, 1996**

Project Title: COWINS: Water Commissioner Data Collection

Category: I ___ II XXX III ___

New: ___ Continuing: ___

Completed: XXX

Start Date: July 1, 1994

End Date: June 30, 1998

Total Personal Services:

\$ 12,000

Total Operating:

\$ 3,000

Total Capital Outlay:

\$ 116,500

Communities of Interest: Colorado River Decision Support System; State Engineer's Office staff; public

Benefits: Improve administration of water rights; improve data quality of field records; reduce processing and report preparation time required to create official division records.

Prepared by: K. Daugherty Phone#: 866-3585

Approved by: L. Shuford Date: July 31, 1996

**State of Colorado
Department of Natural Resources
Base Budget Project Update
June 30, 1996**

Project Title: COWINS: Implement Hydrobase-compliant Well Permitting System

Category: I ___ II XXX III ___

New: XXX Continuing: ___

Completed: ___

Start Date: July 1, 1996

End Date: June 30, 1998

Total Personal Services:

\$ 92,000 (FTE)

Total Operating:

\$ 48,500

Total Capital Outlay:

\$ 15,000

Communities of Interest: Water engineers; public; records specialists

Benefits: Save time in research and issuance of well permits; improve accuracy of ground water records; improve public service by distributing function to field offices; tie ground water data to all other water data to increase accuracy in planning and modelling streamflows.

Prepared by: K. Daugherty Phone#: 866-3585

Approved by: L. Shuford Date: July 31, 1996

**State of Colorado
Department of Natural Resources
Base Budget Project Update
June 30, 1996**

Project Title: Plat Mapping System (COGCC)

Category: I ___ II XXX III ___

Continuing: ___

Completed: XXX

Start Date: September 1991

End Date: May, 1996

Total Personal Services:

\$ 45,544

Total Operating:

Total Capital Outlay:

\$ 32,846

Communities of Interest: DNR divisions with GIS; OGCC staff; public inquiry.

Benefits: Replacement of deteriorating plats. Disaster recovery of well plats. Elimination of hand plotting of well locations, well names, operator names, type of well and well status.

Prepared by: M. Peacock Phone#: 894-2100

Approved by: L. Shuford Date: July 31, 1996

**State of Colorado
Department of Natural Resources
Base Budget Project Update
June 30, 1996**

Project Title: CORIS: WLIS

Category: I ___ II ___ III XXX

Continuing: ___

Completed: XXX

Start Date: July 1, 1993

End Date: December 31, 1995

Total Personal Services:

\$ 2,675,524

Total Operating:

\$ 1,202,477

Total Capital Outlay:

\$ 149,569

Communities of Interest: Public; division staff.

Benefits: License issue reduced from 15 to 3 minutes; search and rescue inquiries reduced from days to 15-second average; more inclusive database; replacement of Wang legacy system with a Unix/Informix system.

Prepared by: J. Hatfield-Mihelic Phone: 291-7246

Approved by: L. Shuford Date: July 31, 1996

**State of Colorado
Department of Natural Resources
Base Budget Project Update
June 30, 1996**

Project Title: Planning, Budget and Evaluation (PBE)

Category: I ___ II XXX III ___

New: XXX

Continuing: ___

Completed: XXX

Start Date: July 1, 1996

End Date: June 30, 1997

Total Personal Services:

\$ 298,660

Total Operating:

Total Capital Outlay:

Communities of Interest:

Benefits: Provide a system to institute a modified zero-base budgeting process as recommended by the Deloitte & Touche management review.

Prepared by: J. Hatfield-Mihelic Phone: 291-7246

Approved by: L. Shuford Date: July 31, 1996

**State of Colorado
Department of Natural Resources
Base Budget Project Update
June 30, 1996**

Project Title: COWINS: CRDSS, Phase I-II/Planning Databases and Tools

Category: I ___ II ___ III XXX

Continuing: XXX

Completed: ___

Start Date: January 1994

End Date: May 1996

Total Personal Services:

\$ 290,000 (FTE)
1,760,000 (Contract/Consulting)

Total Operating:

\$ 60,000

Total Capital Outlay:

\$ 160,000

Communities of Interest: Colorado Water Conservation Board.

Benefits:

Prepared by: K. Daugherty Phone#: 866-3585

Approved by: L. Shuford Date: July 27, 1996

**State of Colorado
Department of Natural Resources
Base Budget Project Update
June 30, 1995**

Project Title: WANG: Wang Migration, Phase I/Stabilization

Category: I ___ II ___ III XXX

Continuing: XXX

Completed: ___

Start Date: July 1, 1994

End Date: August 15, 1996

Total Personal Services (Consulting):

\$ 46,500

Total Operating:

\$ 12,845

Total Capital Outlay:

\$ 54,126

Communities of Interest: The following DNR divisions have been involved in the Wang Migration: Oil and Gas; State Land Board; Minerals and Geology; Parks; Water Resources; and Colorado Geological Survey.

Benefits: Eliminate obsolete technology; reduce maintenance expenses; build a consistent technology architecture within the department; eliminate a proprietary communications protocol; and reduce system downtime.

Prepared by: Diane Huling Phone: 866-5485

Approved by L. Shuford Date: July 31, 1996

Notes: Format 5000 Series

This narrative provides information to be used when reviewing the Format 5000 series forms and the joint Decision Item for the department.

Decision Item - DNR Technology Initiative:

The total request for FY 97-98 is \$1,631,550. The spending authority for the entire amount is being requested for the Information Technology Services section.

The request for FY 97-98 is broken down as follows:

New General Funds		694,050
Spending authority from Cash reserves	- SBLC	135,000
Spending authority from Severance Tax Fund	- OGCC	802,500

		1,631,550

The total request for FY 98-99 is \$607,250. The spending authority for the entire amount is being requested for the Information Technology Services section.

The request for FY 98-99 is broken down as follows:

New General Funds		0
Spending authority from Cash reserves	- SBLC	150,000
Spending authority from Severance Tax Fund	- OGCC	457,250

		607,250

Project Sketch for the Colorado River Decision Support System (CRDSS):

The Division of Water Resources and the Colorado Water Conservation Board (CWCB) jointly decided to withdraw the request for \$300,000 for FY 97-98. Due to the multi-year nature of the project and the difficulty of estimating when contracting and scoping of the development phases will occur it was decided to appropriate funds from the CWCB Construction Fund for much of the remaining development effort for FY 97-98. A request will be developed and submitted next year for FY 98-99.

CRDSS figures are included in the Format 5010 as **Base Budget** and in Format 5030 they are identified, in the **Source of Funds**, as **Other**.

General Comments:

With changes in the Division of Wildlife (DOW) organizational structure, new responsibilities were added to the computer support unit. Specifically, the budget for the DOW phone system has been included this year in the Format 5010. These costs have increased the **Grand Total Costs** for technology spending.

Notes: Format 5000 Series

This narrative provides information to be used when reviewing the Format 5000 series forms and the joint Decision Item for the department.

Decision Item - DNR Technology Initiative:

The total request for FY 97-98 is \$1,631,550. The spending authority for the entire amount is being requested for the Information Technology Services section.

The request for FY 97-98 is broken down as follows:

New General Funds		694,050
Spending authority from Cash reserves	- SBLC	135,000
Spending authority from Severance Tax Fund	- OGCC	802,500

		1,631,550

The total request for FY 98-99 is \$607,250. The spending authority for the entire amount is being requested for the Information Technology Services section.

The request for FY 98-99 is broken down as follows:

New General Funds		0
Spending authority from Cash reserves	- SBLC	150,000
Spending authority from Severance Tax Fund	- OGCC	457,250

		607,250

Project Sketch for the Colorado River Decision Support System (CRDSS):

The Division of Water Resources and the Colorado Water Conservation Board (CWCB) jointly decided to withdraw the request for \$300,000 for FY 97-98. Due to the multi-year nature of the project and the difficulty of estimating when contracting and scoping of the development phases will occur it was decided to appropriate funds from the CWCB Construction Fund for much of the remaining development effort for FY 97-98. A request will be developed and submitted next year for FY 98-99.

CRDSS figures are included in the Format 5010 as **Base Budget** and in Format 5030 they are identified, in the **Source of Funds**, as **Other**.

General Comments:

With changes in the Division of Wildlife (DOW) organizational structure, new responsibilities were added to the computer support unit. Specifically, the budget for the DOW phone system has been included this year in the Format 5010. These

State of Colorado
Base Budget Analysis Worksheet
 Department of Natural Resources

Date: 8/1/96

Cost Components	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	Total
I. Personal Services							
Labor:							
State Employee	2,154,388	2,515,662	2,354,938	2,427,629	2,503,906	2,536,945	14,493,468
Contract & Consulting	1,071,163	1,748,500	1,498,500	380,000	78,500	75,000	4,851,663
Other	152,100	452,200	150,000	150,000	150,000	150,000	1,204,300
Total Personal Services	3,377,651	4,716,362	4,003,438	2,957,629	2,732,406	2,761,945	20,549,431
Total FTE	41	41	41	41	41	41	
II. Operating Expenses							
Materials and Supplies	90,775	73,286	75,701	78,236	80,898	62,655	461,551
Maintenance:							
Equipment:							
Large Systems	187,907	182,561	244,516	225,638	226,786	188,820	1,256,228
LAN Systems	23,195	32,930	35,075	35,230	35,390	33,560	195,380
Desktops	16,260	16,323	16,389	16,458	16,530	1,608	83,568
Network	1,200	2,260	2,323	4,389	4,458	1,531	16,161
Software:							
Large Systems	91,462	104,480	130,451	121,471	122,541	108,611	679,016
LAN Systems	93,198	92,975	93,158	93,351	93,554	92,466	558,702
Desktops	21,250	30,337	35,364	33,232	33,144	32,101	185,428
Network	30,200	43,260	48,323	48,389	48,458	48,531	267,161
Non-Capitalized Equipment	16,551	17,873	18,017	18,168	18,326	18,493	107,428
Processing at State Computer Center	165,222	230,609	180,900	180,900	180,900	168,900	1,107,431
Communications Services							
From Division of Telecommunication:							
Voice	15,750	16,537	17,364	18,232	19,144	20,101	107,128
Data	91,692	120,500	147,500	147,500	147,500	147,500	802,192
From Outside Source							
Voice	10,310	802,425	802,546	802,674	802,807	802,948	4,023,710
Data	63,482	66,700	77,000	57,000	57,000	50,000	371,182
Prepared by: Larry Shuford	Telephone #: 866-3410		Approved by: Ron Cattany			Date: 8/1/96	

Base Budget Analysis Worksheet

Department of Natural Resources

Cost Components	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	Total
Utilities/Rent	432	453	476	500	525	551	2,937
Administrative Expenses	56,683	90,750	60,512	30,788	31,077	31,381	301,191
IT/IS Training	60,115	49,590	50,025	50,576	52,155	47,762	310,223
Travel	24,287	42,400	42,610	22,830	23,062	22,105	177,294
Other Purchased Services	5,053	4,000	4,000	4,000	4,000	4,000	25,053
Total Operating Expenses	1,065,024	2,020,249	2,082,250	1,989,562	1,998,255	1,883,624	11,038,964
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems	190,000	160,000	60,000	30,000	30,000	30,000	500,000
LAN Systems	44,489	47,500	39,000	39,250	39,512	39,788	249,539
Desktops	389,546	85,000	85,750	86,537	87,364	68,232	802,429
Network	25,224	24,500	23,000	23,250	23,512	20,788	140,274
Leased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Software:							0
Purchased							
Large Systems	55,767	50,000	30,000	26,116	26,422	26,743	215,048
LAN Systems	10,100	35,100	31,200	31,260	31,323	31,389	170,372
Desktops	27,700	33,000	23,200	23,610	24,040	21,492	153,042
Network	4,400	9,400	8,200	8,260	8,323	8,389	46,972
Leased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Total Capital Outlay	747,226	444,500	300,350	268,283	270,496	246,821	2,277,676
Grand Total Costs	5,189,901	7,181,111	6,386,038	5,215,474	5,001,157	4,892,390	33,866,071
Prepared by: Larry Shuford	Telephone #: 866-3410		Approved by: Ron Cattany			Date: 8/1/96	

State of Colorado
New Funds Analysis Worksheet
 Department of Natural Resources

Date: 8/1/96

Cost Components	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	Total
I. Personal Services							
Labor:							
State Employee							
Contract & Consulting			510,000	425,000			935,000
Other			684,000	156,000			840,000
Total Personal Services			1,194,000	581,000			1,775,000
Total FTE							
II. Operating Expenses							
Materials and Supplies							
Maintenance:							
Equipment:							
Large Systems			31,250	14,250	14,250	14,250	74,000
LAN Systems							
Desktops							
Network							
Software:							
Large Systems					20,000	20,000	40,000
LAN Systems							
Desktops							
Network							
Non-Capitalized Equipment							
Processing at State Computer Center							
Communications Services							
From Division of Telecommunication:							
Voice							
Data							
From Outside Source							
Voice							
Data							
Prepared by: Larry Shuford	Telephone #: 866-3410		Approved by: Ron Cattany		Date: 8/1/96		

New Funds Analysis Worksheet

Department of Natural Resources

Cost Components	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	Total
Utilities/Rent							
Administrative Expenses							
IT/IS Training				12,000			12,000
Travel							
Other Purchased Services							
Total Operating Expenses			31,250	26,250	34,250	34,250	126,000
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems			78,000				78,000
LAN Systems			14,200				14,200
Desktops			125,000				125,000
Network							
Leased							
Large Systems							
LAN Systems							
Desktops							
Network							
Software:							
Purchased							
Large Systems			188,500				188,500
LAN Systems							
Desktops			600				600
Network							
Leased							
Large Systems							
LAN Systems							
Desktops							
Network							
Total Capital Outlay			406,300	0	0	0	406,300
Grand Total Costs			1,631,550	607,250	34,250	34,250	2,307,300
Prepared by: Larry Shuford	Telephone #: 866-3410		Approved by: Ron Cattany			Date: 8/1/96	

State of Colorado
Total Funds Analysis Worksheet
 Department of Natural Resources

Date: 8/1/96

Cost Components	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	Total
I. Personal Services							
Base Budget	3,377,651	4,716,362	4,003,438	2,957,629	2,732,406	2,761,945	20,549,431
New Funds			694,050				694,050
Total Personal Services	3,377,651	4,716,362	4,697,488	2,957,629	2,732,406	2,761,945	21,243,481
II. Operating Expenses							
Base Budget	1,065,024	2,020,249	2,082,250	1,989,562	1,998,255	1,883,624	11,038,964
New Funds							0
Total Operating Expenses	1,065,024	2,020,249	2,082,250	1,989,562	1,998,255	1,883,624	11,038,964
III. Capital Outlay							
Base Budget	747,226	444,500	300,350	268,283	270,496	246,821	2,277,676
New Funds							0
Total Capital Outlay	747,226	444,500	300,350	268,283	270,496	246,821	2,277,676
Total Other Funds *			937,500	607,250	34,250	34,250	1,613,250
Grand Total Costs	5,189,901	7,181,111	8,017,588	5,822,724	5,035,407	4,926,640	36,173,371
Source of Funds							
General Funds	1,072,026	1,021,641	1,726,397	1,042,059	1,088,136	1,136,525	7,086,784
Cash Funds	2,514,413	4,016,008	3,810,229	3,864,203	3,889,559	3,732,403	21,826,815
Federal Funds	23,462	23,462	23,462	23,462	23,462	23,462	140,772
Other *	1,580,000	2,120,000	2,457,500	893,000	34,250	34,250	7,119,000

Prepared by: Larry Shuford

Telephone #: 866-3410

Approved by: Ron Cattany

Date: 8/1/96

* Note: Other Funds include monies available in the Water Conservation Fund, the Severance Tax Fund, and the State Board of Land Commissioners cash reserves.

State of Colorado
 Department of Natural Resources
PROJECT DETAIL

Date: July 31, 1996

Project Title: DNR Technology Initiative	Category: III	New: XXX	Budget Decision Item Request: XXX
		Continuing:	Capital Construction Request:
<p>Project Description: 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.</p>			
<p>Technical Architecture: Unix-based servers tied into emerging GIS applications; existing LAN and telecommunications technology; and future internet activities.</p>			
<p>Benefits: Respond faster and more accurately to customer inquiries; protect historic documents; improve completeness of stored data; improve record filing and retrieval; provide data based decision-making tool; and all multiple-user access.</p>			
<p>Project Management: ITS staff will manage the various projects, with assistance from technical and business staff.</p>			
<p>Communities of Interest: Customers and department staff throughout the state.</p>			
Prepared by Diane Huling Telephone: 866-5485 Approved by: Larry Shuford Date: July 31, 1996			

PROJECT DETAIL
Department of Natural Resources

Project Title: DNR Technology Initiative

A	B	C	D	E	F	G	H
Phase/Milestone Description	Estimated FTE	Actual FTE	Estimated Start Date	Actual Start Date	Estimated End Date	Actual End Date	Percentage Complete
1. Feasibility Studies			1995		09/96		85%
2. Develop, evaluate and release RFPs			10/01/96		04/97		
3. Imaging, Phase I Water wells and OGCC; documentation; training			07/01/97		09/01/98		
4. Imaging, Phase II Water: Court documents and remaining OGCC historical documents; begin integration with other systems			07/01/98		08/01/99		
5. Imaging, Phase III Remaining water documents			07/01/99		07/01/00		
6. Design and write re-write legacy systems Soil Conservation, Parks, OGCC, State Land Board			08/96		06/98		
7.							
8.							
9.							
10.							

Prepared by Diane Huling

Telephone: 866-5485

Approved by Larry Shuford

Date: July 31, 1996

Project Detail
Department of Natural Resources

Project Title: DNR Technology Initiative

Cost Components	Total Costs Thru 6/30/96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	Total
I. Personal Services							
Labor:							
State Employee							
Contract & Consulting	23,400	23,100	510,000	425,000			981,500
Other			684,000	156,000			840,000
Total Personal Services	23,400	23,100	1,194,000	581,000	0	0	1,821,500
Total FTE							
II. Operating Expenses							
Materials and Supplies	10,000						10,000
Maintenance:							
Equipment:							
Large Systems	10,445		31,250	14,250	14,250	14,250	84,445
LAN Systems							
Desktops							
Network							
Software:							
Large Systems	12,900				20,000	20,000	52,900
LAN Systems							
Desktops							
Network							
Non-Capitalized Equipment							0
Processing at State Computer Center							
Communications Services							
From Division of Telecommunication:							
Voice							
Data							
From Outside Source							
Voice							
Data							

Prepared by: Diane Huling

Telephone #: 866-5485

Approved by: Larry Shuford Date: July 31, 1996

Project Detail

Department of Natural Resources

Project Title: DNR Technology Initiative

Cost Components	Total Costs Thru 6/30/96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	Total
Utilities/Rent							
Administrative Expenses							
IT/IS Training	2,000			12,000			14,000
Travel							0
Other Purchased Services							
Total Operating Expenses	35,345	0	31,250	26,250	34,250	34,250	161,345
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems	78,000		78,000				156,000
LAN Systems			14,200				14,200
Desktops			125,000				
Network							
Leased							
Large Systems							0
LAN Systems							0
Desktops							
Network							
Software:							
Purchased							
Large Systems			188,500				
LAN Systems							
Desktops			600				
Network							
Leased							
Large Systems							
LAN Systems							
Desktops							
Network							
Total Capital Outlay	78,000	0	406,300	0	0	0	170,200

Prepared by: Diane Huling

Telephone #: 866-5485

Approved by: Larry Shuford Date: July 31, 1996

Project Detail
 Department of Natural Resources
SUMMARY

Date: July 31, 1996

Project Title: DNR Technology Initiative		Category:	New: XXX Continuing:		Budget Decision Item Request: XXX Capital Construction Request:		
Cost Components	Total Costs Thru 6/30/96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	Total
GRAND TOTAL PROJECTED COSTS	136,745	23,100	1,631,550	607,250	34,250	34,250	2,467,145
Base Budget Cost							0
New Funds Required			694,050				694,050
Federal Cost							0
Other Cost	136,745	23,100	937,500	607,250	34,250	34,250	1,773,095
Benefit Components	Total Costs Thru 6/30/96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	Total
Tangible Benefits:				131,040	6,031,040	6,031,040	12,193,120
Current cost of records retrieval is \$504/day or \$2,520/week or \$131,040 annually. Savings begin FY 98/99, when annual maintenance will be \$73,870 See page 12 of IMAP.							
GRAND TOTAL PROJECTED BENEFITS	0	0	0	131,040	6,031,040	6,031,040	12,193,120
Benefits Less Costs (subtract Total Costs from Total Benefits)	-136,745	-23,100	-1,631,550	-476,210	5,996,790	5,996,790	9,725,975

Expected Life of Components (hardware/software):
2-5 years

IS Unit/Division Department
 Department Priority 1 of 1
 IS Unit Priority 1 of 1

Strategic Business Objective(s):

1. Provide timely and appropriate information.
3. Carry out mandates.
4. Maintain or improve service levels.

Strategic System Objective(s):

1. Provide timely and effective business solutions
4. Enhance ability to integrate and share information.
5. Provide current and accurate information.
7. Ensure infrastructure that facilitates data sharing.

Prepared by: Diane Huling

Telephone #: 866-5485

Approved by: Larry Shuford Date: July 31, 1996

Appendix B

Previous Years' Accomplishments

Accomplishments and Progress from Previous Year's Efforts:

Plan Year 1992-1993:

CORIS

- Released RFP for Campground Reservation System (CRS) October, 1992;
- Received approval of project in February, 1993;
- Established CORIS Management Team, Steering Committee, Project Team, March, 1993;
- Implemented CRS in March, 1993;
- Evaluated Phase I and determined ITS control of the project was a requirement May, 1993;
- RFP for Technical Services was withdrawn May, 1993 due to production deadlines;
- Created a development site including staff, hardware and software June, 1993;
- Implemented WildNet telecommunications support July, 1993;
- Redesigned Conservation Certificate (Base License) and forms July, 1993;
- Implemented Leftover License Application August, 1993; and
- Completed Business Enterprise Model September, 1993.

Colorado WINS

- Feasibility study complete January, 1993;
- Released an engineering RFP to begin development of the Colorado River Decision Support System July, 1993;
- Interviewed and selected a CRDSS Project Manager August, 1993; and
- Selected a prime contractor for the CRDSS September, 1993.

Geographic Information Systems

- Plangraphics, Inc. makes final recommendations to DNR for GIS standards February, 1993;
- DNR accepts the Plangraphics, Inc. recommendations March, 1993;
- Established a DNR GIS Steering Committee and GIS User Group recommended by Plangraphics in the DNR GIS Strategic Plan March, 1993;
- GIS User Group begins holding data dictionary, acquisition and coordination meetings March, 1993;
- Step-up involvement in the Colorado Geographic Information Coordinating Committee (GICC) April, 1993;
- Developed Memorandum of Understanding (MOU) with Colorado State University (CSU) to have the State Land Board Plat maps digitized for GIS layers April, 1993;

- Explored a partnership with the Department of the Interior, Bureau of Land Management (BLM) to develop a statewide MOU for all state, local and county governments to share GIS and survey data August, 1993;
- Created a technical sub-committee of the GIS User Group to work with BLM on the MOU September, 1993; and
- Nominated a DNR employee from the Division of Water Resources to serve on the ISO Geomatics Standards Committee for the development of international GIS policy September, 1993.

Wang Migration

- Began the CORIS Project, February, 1993, which will ultimately lead to the elimination of one of the department's two Wang VS minicomputers;
- Suspended work on two projects submitted by the Division of Minerals and Geology in last year's IMAP February, 1993;
- Finished moving VS300 SNA users to the LAN for SNA access to GGCC; and
- Rebid the Wang maintenance for one year in accordance with Amendment 1 requirements June, 1993.

Technical/Administrative Support

- Combined ITS Operations Unit and User Support into a single organizational entity to maximize operational efficiency and facilitate cross training of staff March, 1993;
- Support the department's Quality Management effort by contributing staff support from ITS March, 1993;
- Implemented PC-based text scanning and indexing for the Oil and Gas Conservation Commission March, 1993;
- Installed a DDN telecommunications node at the DNR Headquarters office June, 1993;
- Subscribed to the WordPerfect Customer Assistance Program (CAP) to deliver word processing capabilities at a reduced cost to our customers June, 1993;
- Installed a 56kbps link between the DNR Headquarters offices and DOW August, 1993;
- Installed three kiosks as a part of a pilot project with the Departments of Revenue and Social Services September, 1993;
- Synchronized all copies of Banyan Vines operating systems running on departmental LANs September, 1993; and
- Successfully connected an Apple Macintosh computer to our Banyan Vines topology September, 1993.

Plan Year 1993-1994:

CORIS

- The application development and maintenance cost of the MicroFocus Dialog system was determined to be higher than originally projected and further use was suspended October, 1993;
- An Invitation to Bid was released and evaluated to select a scanner vendor October, 1993;
- Developed the specifications for a computer that conformed to departmental standards and would support CORIS November, 1993;
- Selected a computer vendor for the CORIS machine from an existing state award December, 1993;
- Conservation Certificates available for distribution December, 1993;
- Informix 4GL was evaluated and accepted as an application development tool;
- The Overflow Programming Contract was used to hire application development staff;
- The Rapid Application Development (RAD) methodology, as defined by James Martin, was adopted in January, 1994;
- The FourGen application developers suite of software was chosen for the CASE portion of the RAD process in January, 1994;
- The Over-the-Counter Licensing module was completed in March, 1994; and
- The Cash Management module was completed in April, 1994.

Colorado WINS

- Discovery phase for the CRDSS completed December, 1993;
- Design of CRDSS Phase I completed May, 1994;
- Initial detailed design of the CRDSS database to contain spatial data, climatic data, historical water use data, water right information, irrigated acreage and operating data;
- Selection and initial preparation of an existing computer program as the tool to be used in the CRDSS for simulations of water allocation within Colorado;
- Prepared detailed recommendations of changes to make to the US Bureau of Reclamation's (USBR) procedures used for calculating consumptive uses and losses;
- Transfer of the USBR Colorado River Simulation Model (CRSM) to CRDSS computers for use in evaluating Colorado River Basin issues;
- Preparation of a detailed work plan for Phase II (mid-1994 through 1995) of CRDSS;
- Created a CRDSS briefing room at State offices to facilitate demonstrations of the CRDSS system as it is developed;

- Acquired hardware and software for use by the State and the consultant team involved with CRDSS development; and
- Continued interactions with a Technical Advisory Group, containing major water users and Technical Subcommittees.

Geographic Information Systems

- Actively participated in the Colorado Geographic Information Coordinating Committee throughout the year;
- Completed 95% of the Plat Mapping digitizing effort for the State Board of Land Commissioners by June, 1994;
- Research was conducted by the DNR GIS User Group for a common base map or grid to be used as a department standard;
- A common base map or grid was selected June, 1994;
- A Memorandum of Understanding related to data sharing between the BLM and governmental entities statewide was drafted and reviewed by the Attorney General's Office June, 1994;

Wang Migration

- Users of the Wang VS100 were moved to a LAN environment throughout the year;
- Analysis was conducted to determine the resource requirements necessary to move non-CORIS applications off the VS100;
- A coordinated effort between ITS and five divisions that use the VS300 began, to update the feasibility study for a complete Wang Migration Project.

Technical/Administrative Support

- The Division of Water Resources continued to explore the possibility of using imaging to augment their GIS efforts;
- All divisions participated in a planning exercise to define a department-wide telecommunications infrastructure which will lead to the development of a decision item for FY 95-96;
- All divisions participated in a planning exercise to identify a common personal computer platform, for the majority of LAN users, which will lead to the development of a decision item for FY 95-96;
- Agreed to provide a secure termination point in the DNR computer room for the General Government Computer Center (GGCC) to install fiber optic cable as a part of a project they are completing;
- Began planning to use the fiber optic connection to GGCC as the departments' gateway into the Internet;

- Acquired a package to support a Computer Equipment Asset Management system for tracking hardware and software. This system will replace the proprietary program running on the Wang that performs a similar function; and
- Integrated the Mac into our LAN topology.

Plan Year 1994-1995:

CORIS

- One of the principal programmers from the contracting firm doing applications development was hired by the department to strengthen the in-house staff, February, 1995;
- The Leftover Licensing Module was completed August, 1994;
- Surveys - Phase I was completed in January, 1995;
- Upgraded the Campground Reservation System operating system and application software with vendor updates February, 1995; and
- Limited Licensing and Drawings completed June, 1995.

Colorado WINS

- Population of historical water resource data (including streamflow, ditch diversions, temperatures and precipitation) for the Gunnison River Basin prototype area, Yampa River Basin, White River Basin, and San Juan River Basin;
- Completion of Project supported quality control/quality assurance program on historical diversion records for key diversion structures to be used in the planning models;
- Development of a CRDSS map browser tool and inclusion of various maps (including hydrology, irrigated lands, soil types, and elevation) for the Gunnison River Basin prototype area or for the full western slope;
- Completion of Project supported inventory of irrigated lands for the Gunnison, Colorado River mainstream, and San Juan River basins;
- Development of a crop consumptive use model to operate on the new irrigated lands database. This model has been applied for the Yampa and San Juan River basins;
- Development of a prototype water resource planning model for the Gunnison River Basin. Based on experiences with the development of that prototype model, the modeling foundation was changed to a model which is simpler to understand and use. Modeling applications for the Gunnison, the Yampa and the White River Basins are being completed;
- Incorporation of the US Bureau of Reclamation's Colorado River Simulation System and 24 Month Simulation Model in the CRDSS system;
- Continual monitoring of CRDSS system developments by state representatives with resultant improvements to the system being made by the consultant team;
- Continued interactions with a Technical Advisory Group, containing major water users, and Technical Subcommittees; and
- Developed, released and evaluated a bid for the imaging pilot.

Geographic Information Systems

- Implemented the Plat Mapping System for the State Land Board December, 1994;
- Received comments from the Attorney Generals Office on the statewide Memorandum of Understanding with BLM;
- Received approval from the IMC, OSPB and the JBC to fund the GIS Coordinator position effective July 1, 1995; and
- Received a written workplan for the GIS Coordinator as the result of an Executive Enhancement Program sponsored by the Bureau of Land Management July, 1995.

Wang Migration

- Began the Stabilization Phase of the project which included releasing and evaluating a bid for the hardware and operating system software February, 1995;
- Migrated the Division of Water Resources Water Well database to a Unix server running Informix two months ahead of schedule--April, 1995;
- Converted the Hardware and Software Inventory programs running on the VS300 to an Informix database accessible by multiple divisions, April, 1995;
- Wrote the software conversion specifications for the remaining production applications that support the Oil and Gas Conservation Commission and the State Land Board, May, 1995; and
- Conducted a pilot conversion of the Parks application software and data files to the test environment June, 1995.

Technical/Administrative Support

- Developed and tested a new disaster recovery process for the Parks applications running on the Wang VS300 December, 1994;
- Connected the Parks Southern Regional Office in Colorado Springs to the DNR LAN using WildNet March, 1995;
- Acquired a communications protocol router to be used on the Local Area Network as a temporary measure to give the department the ability to connect to the Colorado Integrated Network (CIN) for Internet access, May, 1995;
- The Parks' internal computer Committee transferred 26 standard forms to computer media for the automation of reports and to further the adherence to standards May, 1995; and
- Parks upgraded 90% of the modems used for access to the Campground Reservation System June, 1995.

SCHEDULE 2D - DECISION ITEM

PRIORITY: 1

DECISION ITEM TITLE: DNR Technology Initiative

PROGRAM ASSIGNMENT: Information Technology Section

STATUTORY AUTHORITY STATE: Division of Water Resources (DWR)--CRS 37-80-102(f), 37-80-111.5(d);
State Board of Land Commissioners (SBLC)--Colorado Constitution - Article IX, Section 9
& 10, CRS 36-1-102; Oil and Gas Conservation Commission (OGCC) --CRS 34-60-102.

FEDERAL: n/a

TOTAL REQUEST AMOUNT

FUND SOURCE	REQUEST YEAR FY 97-98	FOLLOWING YEAR FY 98-99
T	1,631,550	607,250
GF	694,050	0
CF	54,000	74,250
CFE	883,500	533,000
FF	0	0
FTE	0	0

NARRATIVE

Program Description:

The Department of Natural Resources (DNR) is submitting a combined decision item this year in support of the increased cooperation between divisions related to technology planning. A combined initiative enables the department to manage technology planning and implementation as an integrated approach to improving customer service.

The request encompasses two technology components: 1) imaging, and 2) software enhancements.

An Imaging Team was created in FY 95-96 with representatives from all DNR divisions participating to analyze, from a departmental perspective, imaging needs. The team met for six months with the goal of developing a comprehensive DNR Imaging Work Plan. Imaging is seen as a potential solution to many agency needs. We have documented, in the work plan, the imaging requirements of seven divisions. The work plan addresses, for each division, the business background, specific work units, document access requirements, file information, primary-document information, work flow information, and indexing information. The work plan recognizes that the Division of Water Resources (DWR) and the Colorado Oil & Gas Commission (OGCC) are ready to move ahead; other divisions will follow. The work plan will guide this implementation so that we maintain consistency throughout the Department. The imaging component of this year's decision item addresses only the imaging needs for DWR and OGCC. We expect to use FY 96-97 to develop an RFP in anticipation of receiving funds to begin implementation of the imaging component in July, 1997. The RFP will include the long-term imaging needs of the entire Department, implemented over several years.

The software enhancements component is Phase II - Enhancements of the original Wang Migration project that was approved by the IMC several years ago. Updating the applications supporting the State Board of Land Commissioners (SBLC) and the OGCC continues to build on the work we began two years ago as a part of moving applications to department standards. This effort requires two funding sources. One source is from the SBLC cash fund and the other is from the Severance Tax fund created in SB 96-170. The decision item is requesting the spending authority for the SBLC to proceed with the enhancements to the Surface Lease Information Management System (SLIMS/COGIMS) in FY 97-98.

The Colorado Minerals, Energy and Geology Advisory (MEGA) Board, established pursuant to Section 34-20-104, C.R.S., is required to review spending requests from the Severance Tax fund. The MEGA Board has given approval to the OGCC to proceed with their plan to enhance the Colorado Oil and Gas Information Management System (COGIMS) in FY 97-98. SLIMS/COGIMS is a tightly integrated system that benefits the SBLC and the OGCC by providing common data and functionality to both divisions.

IMAGING:

The State Engineer-DWR is responsible for the permanent storage of official water records for the State of Colorado. These records include well permit documents, diversion and reservoir records, and other official records that provide historical, technical, and legal documentation of water administration decisions.

SOFTWARE ENHANCEMENTS:

The SBLC manages 4 million mineral acres and 3 million surface acres. Numerous land uses/leases are entered into for the management of these state trust lands, such as oil and gas and other minerals, as well as agriculture, grazing, commercial development, recreation, forest products and other uses. Most of Colorado's trust lands originated as land grants under the 1876 Enabling Act from the United States to the new State of Colorado. The largest grant comprising over 80 percent of the original total of 4.6 million acres, was for the support of the common public schools. Other trust land beneficiaries include state colleges and universities, the state penitentiary, state parks, and public buildings. Trust lands must be managed for the trust beneficiaries.

In promoting responsible development of Colorado's oil and gas natural resources, the Colorado Oil and Gas Conservation Commission must maintain timely and accurate information for its stakeholders; the oil and gas industry, the agriculture industry, local governments and the environmental community.

Problem Statement:

IMAGING:

The State Engineer's office currently has approximately 250,000 well permit files, each containing an average of 12 pages of information. These files are referred to in water court cases, and in applications for replacement and new well permits. The documents in the files exist at no location other than in the State Engineer's Denver office. We can no longer efficiently store and maintain the paper documents in these files. We have no backup should the documents be destroyed or damaged. We cannot efficiently electronically transmit these documents to another location in the State, where they are frequently needed by water engineers, attorneys, and members of the public.

SOFTWARE ENHANCEMENTS:

The Colorado Oil and Gas Information Management System (COGIMS) which was developed in 1982-1984, is outdated, cumbersome, and is inadequate for addressing the data management needs of OGCC as well as the present day State Board of Land Commissioners (SBLC) for management of its oil and gas leases, as well as its other minerals leases. An additional system was built in 1985 in conjunction with COGIMS, the Surface Lease Information Management System (SLIMS) for management of all surface land related leases.

These two systems jointly contain an inventory to identify both the 4 million mineral acres and 3 million surface acres of state trust lands managed by the SBLC. There are eight separate land trusts. Each acre of land has a particular trust designation, and revenue received must be identified, by trust, in order to appropriately account for and distribute the revenue to the correct trust beneficiary. Sources of revenue include land sales; minerals royalties; oil and gas lease rents; rents from agriculture, grazing, commercial development, recreation and other uses; and forest product revenue. The SBLC's central office is located in Denver, with district offices in Alamosa, Craig, Greeley, Pueblo and Sterling. These two automated systems must support the land management and trust fund accounting functions.

Over the past decade, there have been major changes in computer technology, as well as the SBLC land management policies and practices, and the current system has become outdated in terms of functionality, user interface, and systems design. The SBLC systems need several major modifications/upgrades in order to manage its lands more efficiently and maintain a secure land data base information system. The August, 1994 Report of the State Auditor, Public Land Management Performance Audit findings identified areas for improvement in the SBLC's management of unproductive land, inaccessible land, process to set rentals for grazing livestock on state land, guidelines for determining the value of land to be sold or exchanged and procedures for resolving boundary errors. A study completed in June, 1995 by a consultant on the COGIMS and SLIMS systems, Modernization & Enhancement Study, addressed the modifications, upgrades and enhancements necessary to enable the SBLC to implement the State Auditors recommendations for state trust land management.

There are programs and information shared by the Colorado Oil and Gas Conservation Commission and the SBLC within COGIMS which should be upgraded concurrently. Beyond the needs of the State Land Board, the Oil and Gas Commission serves a number of stakeholders with informational needs that are not being met at present. In the period of time since the implementation of COGIMS, the number of active oil and gas wells has nearly doubled, compounding the problem of outdated technology with greater volumes of workload. Three separate studies - a 1992 Department of Natural Resources Information Management Study - a 1994 State Performance Audit - and a 1995 OSPB workload analysis, all cite the inadequacy of the COGIMS information technology system.

Goal Statement:

To improve the delivery of information to our customers.

Objectives:

IMAGING:

Serve the water records needs of the citizens of the state by prompt transfer of water records to any location in the state.

SOFTWARE ENHANCEMENTS:

The pre-eminent objective of the information technology enhancement decision item is to improve service to our customers. The need for timely and accurate information has been the focus of numerous departmental studies. With this decision item, we intend to implement the recommendations of the study completed on the SBLC, dated October 1995, by the Natural Resources Law Center, University of Colorado School of Law, and the recommendations of the State Auditor included in the August, 1994 Report of the State Auditor, Public Land Management Performance Audit, and the benefits described in the SBLC Modernization/Enhancement Study which include:

- Develop a comprehensive inventory of trust assets.

- Maintain a database containing the asset portfolio information.

- Decrease response time to information requests from lessees, the public, other government agencies, and SBLC management.

- Receive electronic submission of data for reporting by industry, for example oil and gas royalty reports.

- Develop a system which will readily interface as a layer within the newly developed and completed SBLC Geographic Information System (GIS) and with image processing and document management systems.

There is a two fiscal year horizon for the systems conversion within the Oil and Gas Commission. By the end of FY 1997-98 an oil and gas information management system will be in place with the conversion of existing data files. Hardware purchases will include a file server, desk-top and laptop computers. By the end of FY 1998-99, the system will be completely customized and training and systems implementation will be accomplished.

Replacement of the COGIMS computer system with a modern, efficient data management system will support the responsible promotion of oil and gas development throughout the state.

Performance Measures:

IMAGING:

DWR: Percentage of documents imaged and available in electronic form to the public.

DWR: Access time for the electronic documents compared to the present access time.

SOFTWARE ENHANCEMENTS:

Increase the SBLC's data handling effectiveness by designing a system that does not allow incomplete and inaccurate data entry by performing automated data edits, update, calculations and flagging of results outside of acceptable parameters.

Improve the efficiencies of workflow and the effectiveness of the land management issues within the SBLC by creating a data system that maintains historical information on SBLC land uses, to eliminate duplicative entry of data.

Improve the effectiveness of SBLC field inspections by developing a system that determines the priority level of various types of inspection, records and tracks all necessary information about inspections, and provides improved remote access to data by field engineers and district managers.

Lessen the risk of loss of integrity to the SBLC's data by developing a system that traces transactions such as record deletions.

Improve the effectiveness of the SBLC in providing data services to all customers including the industry, state and local government agencies, and individuals by creating linkages to those parties for the sharing of data.

Improve the effectiveness of the SBLC to monitor and track events such as surface damage and complaints to their conclusion on an automated system.

Within the Oil and Gas Conservation Commission, performance will be measured by: (1) Increased efficiency and accuracy of application processing and reports. (2) Current backlogs will be reduced. (3) Oil and gas technical and environmental data will be more accessible to the industry and the public.

Strategy:

IMAGING:

The Department has completed an imaging work plan that incorporates the needs of each agency in DNR, under consistent technology, which will be implemented as funding in the individual agencies permits. The Information Management Commission recommended that any document imaging program be implemented by contracting for all image capture of historic documents to be completed in one year, to enjoy the benefits as soon as possible. The Department has performed an analysis of alternatives, including the no action alternative, and found this process to be feasible.

Justification:

IMAGING:

1. The water records section currently receives 45,500 internal requests for documents and 45,500 public requests for documents annually. Both public and internal document retrieval efficiency can be improved. Re-filing is eliminated when documents are delivered as electronic images.
2. Simultaneous access to document images by multiple users, both internally and by the public, will greatly improve the efficiency of internal workflow, including application processing and other types of approvals.
3. Transferring documents into electronic images will allow off-site backup of the electronic storage media, thus eliminating the risk of loss.
4. Improved access to vital oil and gas information will enable oil and gas operators to more efficiently and effectively develop the state's energy resource base. This increased access will greatly benefit the oil and gas industry as well as the economy and citizens of the state of Colorado.

SOFTWARE ENHANCEMENTS:

A Computer Team consisting of SBLC personnel (commissioner, Denver staff and field staff) was formed to analyze the existing data base software, determine the needs of the agency and work with the consultant who completed the study recommending the modifications, upgrades and enhancements necessary to improve agency efficiency and provide current and accurate information to the customers of the agency.

This project is a joint development effort between the COGCC, the SBLC and the Department of Natural Resources (DNR) Information Technology Services (ITS) section to upgrade to the current generation of computer technology and to continue to move all DNR agencies to compatible computer systems for ease in sharing information.

Current Budgetary Constraints:

IMAGING:

No funds are available for contracting for rapid image capture within existing resources.

SOFTWARE ENHANCEMENTS:

SBLC:

CRS 36-1-145(2) cash funding 106% cap. Senate Bill 95-194 established new statutory language which eliminated the link between spending and potential revenues and established a different appropriations limitation, an increase in appropriations would be limited to 6 percent each year over the previous year's appropriation. This significantly limits the amount of new money available for decision item requests. The SBLC intends to initiate legislation in 1997 to amend the language in the statutes which would allow a two year implementation of this request, and allow additional requests if appropriate, and appropriate the existing \$300,000 cash reserve.

ASSUMPTIONS AND CALCULATIONS

IMAGING:

The cost estimates used in this request are from the DNR Imaging Plan, and are based upon the experience of the Department of Human Services for a similar project.

<u>Item</u>	<u>DWR</u>	<u>OGCC</u>	<u>Total</u>
document scanner and scanner p.c.	-	23,000	23,000
optical disk jukebox	-	24,000	24,000
optical disk image server	16,000	15,000	31,000
optical disk software server	-	5,000	5,000
document scanning and retrieval software	-	30,000	30,000
image document management file server	-	7,000	7,000
image document management software	52,000	21,500	73,500
image document FAX server	-	7,000	7,000
desktop hardware (larger monitors)	-	32,000	32,000
desktop software	600	-	600
imaging system printers	-	8,000	8,000
LAN system hardware	14,200	-	14,200
vendor project management	40,000	30,000	70,000
operating expenses	31,250	-	31,250
3,800,000 documents x \$0.18/image captured	<u>540,000</u>	<u>144,000</u>	<u>684,000</u>
TOTAL	694,050	346,500	1,040,550

SOFTWARE ENHANCEMENTS:

SBLC:	Four Year Implementation:	Two Year Implementation:
FY 1997-98 Database design and establish database tables and relationships; Convert and upload data from existing COGIMS and SLIMS data files	\$135,000-----	\$285,000 year one FY 1997-98
FY 1998-99 Design and develop system menus; Design, code and test data entry forms; Design, code and test standard queries and reports	150,000-----	
FY 1999-2000 Informix Licenses	\$ 25,000-----	
Design and develop system menus; Design, code and test data entry forms; Design, code and test standard queries and reports	105,700	
Develop user manual and on-line context sensitive documentation	26,300	
FY 1999-2000 Develop user manual and on-line context sensitive documentation	22,600	\$232,100 year two FY 1998-99
Train users	9,400	
Implementation plan and project management	<u>43,100</u>	
Total	<u>\$517,100</u>	
	=====	

COGCC:

FY 1997-1998

Needs assessment study, development of implementation plan, begin development of new database management system, convert existing data files, purchase Informix licenses, purchase file server, purchase laptop computers, upgrade desktop computers	\$456,000
--	-----------

FY 1998-1999

Complete development of new database management system, train employees on the new system, perform database integrity verification.	<u>\$349,000</u>
---	------------------

TOTAL COGCC SOFTWARE ENHANCEMENTS	\$805,000
-----------------------------------	-----------

REQUEST BY LINE ITEM

LINE ITEM	FUND SOURCE	REQUEST YEAR FY 97-98	FOLLOWING YEAR FY 98-98
Information Technology Services: Technology Initiative	T	1,631,550	607,250
	GF	694,050	0
	CF	54,000	74,250
	CFE	883,500	533,000
	FF FTE	0.0	0.0

COMPARISON TO THE BASE

PROGRAM	FUND SOURCE	PRIOR FY 95-96 ACTUAL	CURRENT FY 96-97 ESTIMATE	REQUEST FY 97-98 BASE	REQUEST FY 97-98 WITH DECISION ITEM
New Program					

Appendix D

DNR Imaging Workplan

Colorado Department of Natural Resources

Imaging Work Plan

Purpose of Work Plan

This work plan discusses the business of the Department of Natural Resources (DNR) agencies for which imaging is a potential solution to document needs, offers an overview of imaging needs, and presents a level of detail that could form the basis of both budget decision items and an imaging RFP.

Introduction

While business processes at the department focus on the legally mandated and very diverse missions of each division, policy development often cuts across these legal responsibilities and requires a department focus. Additionally, across divisions there is agreement on the principles of improving customer service; improving business processes; and exercising responsible custodianship of original source documents. On the technological side, e-mail, WAN, GIS, and imaging cross divisions and must be planned for, developed and implemented on a department-wide basis.

The Information Technology Services Section (ITS), in conjunction with data processing work groups in the divisions, is responsible for setting hardware and software standards; developing infrastructure; designing the architecture (LAN, WAN, high-speed workstation); assuring database compatibility; maximizing compatibility across applications; and assuring data integrity through adequate backup and off-site storage procedures.

The department identified the need for an imaging initiative, and ITS Section staff coordinated a team of division business representatives to develop a DNR imaging work plan; this document is the result of the team's efforts.

There are various purposes for imaging: work flow (managing documents that are used daily); document storage and retrieval; and archiving (file cabinet replacement). It is the department's regulatory divisions, Water Resources, Oil and Gas Conservation Commission (OGCC), and Mined Land, that demonstrate the strongest need for imaging to manage work flow and documents. Although original-source documents cannot be changed, there is sometimes need to add to a document; for this purpose, electronic "post-its" are adequate. For other divisions imaging is currently seen as a tool to store documents and retrieve them on an occasional basis. Part of the department's future vision is internet public access to do research and submit permits. The WAN would include intranet and internet access and, possibly, CD distribution.

Work Plan Process

- Step 1 Identify the scope and immediacy of imaging needs in each division.
- Step 2 Before applying imaging, re-engineer business processes in the particular agency to be as efficient as possible.
- Step 3 Identify the specific uses of imaging in terms of documents to image, users, etc.
- Step 4 Determine the order in which divisions may participate.
- Step 5 Present draft plan to the IMC and DNR division staff for suggestions and improvements.
- Step 6 Incorporate results of step five and issue a final draft for review.
- Step 7 Implement the work plan.

Timetable

- Phase I July 1, 1997 through June 30, 1998. Imaging for work flow management: Water Resources (Water Well Permit forms) and OGCC (all forms on a day-forward basis); both agencies plan to work from the same RFP and use the same imaging system. Document storage and retrieval: Inactive Mine Reclamation Program.
- Phase II Additional imaging may occur as funds become available. Efforts could include work flow imaging in Mined Land Reclamation's Minerals and Coal Programs; and document storage and retrieval imaging in the State Land Board, Parks and Outdoor Recreation, the Division of Wildlife and the Water Conservation Board. Before undertaking work flow imaging, both the Minerals and Coal Programs would re-engineer their business processes to be as efficient as possible.

General Connectivity Strategy

While the department has not yet determined final connectivity strategy, the vision is networked distribution to internal and external customers implemented in phases.

Division Information

I. Water Resources

Business Background

The Division of Water Resources (DWR) responsibilities include administration and regulation of the state's waters and gathering, maintaining, preserving and making available for review and copying official water records related to the administration of the waters of the state.

Areas of responsibility include conducting safety inspections of all jurisdictional dams and reservoirs; review and approval of construction plans for new or enlarged

dams and reservoirs; permitting of water wells; licensing of water well construction contractors; collecting streamflow data on rivers and streams and maintaining the records; reviewing and commenting as necessary on all Water Court applications submitted to the seven water courts for the adjudication of water rights; administration of interstate compacts and intrastate water rights, and the official records documenting the water deliveries thereto. In addition, DWR has rule making responsibilities; measures snowpack data and makes predictions as to probable runoff; and reviews proposed subdivisions and other substitute water supply plans.

Specific Work Units

In each of the seven major drainages in the state there is a field office with staff who administer water rights and respond to public inquiries and concerns relating to the administration of water in the state. There are approximately 260 employees among these water districts and the Denver office.

Document Access Requirements

The first focus of imaging is water well permitting. The second focus will be diversion records and the third, court cases. While information gathered about other processes and documents is included herein, the impact of imaging on timeliness and process steps is limited to the water well permitting process. In 1994 the Unisys Corporation reviewed imaging technology for the State Engineer's Office. After reviewing the business processes, the study concluded that, "... the DNR Well Permit staff is a well run and effectively managed business unit. No changes are recommended to management policy or structure as a result of this study."

The division recently re-engineered the process for well permitting in four major ways:

- **Significant modification of workflow processes**, resulting in fewer return of application to the applicant.
- **Revision and documentation of permitting policies and processes** so that the division's water evaluators have a more thorough understanding of both. This has meant greater consistency in permit review.
- **Increased latitude given to well-permit evaluators** to reconcile obvious application errors or anomalies. In many case an evaluator can supply information more efficiently and accurately than can the applicant. The latitude allows the evaluator to supply missing or correct clearly erroneous information without bothering the applicant. This speeds up the permitting process.
- **Complete re-design of the well-permit application form**. The applicant finds the form less confusing because it relates specifically to his/her needs, and forms now arrive with fewer errors.

The public, other agencies and staff access well permit documents to view and copy them. With an average of 300 to 400 permit files used daily, there are real concerns about the preservation of these documents, which are unique source documents dating back to the 1950s.

Each well permit file is a complete record of that particular well structure. The order of the documents and correspondence within a permit file shows the history of the well. The history is important in determining the "water right" status, allowable uses and appropriations of water, as well as the physical characteristics of how the well was constructed. An individual well structure may have more than one permit associated with it and the information relating to other permits for the structure must be linked.

The public visit the Denver and field offices to review and/or copy water records; DWR staff continually access the paper permit files in order to evaluate Water Court applications, new well permit applications and complaints, violations etc. The Denver office annually receives approximately 25,000 water related inquiries from the public and other agencies.

Water Resources: Imaging Impact on Well Permit Process

Legal mandates specify response times for both applicants and the State Engineer's Office (SEO). Statute gives SEO staff 45 days to respond to an application by issuing a permit or a denial. Recent work flow study efforts have produced changes to the permitting process, including a simplified application form. Staff are tracking the process to determine time savings and further modifications.

To issue or deny a permit and to respond to court actions, engineering staff must examine the water wells which already exist in the geographic area of the permit application. Imaging will reduce significantly the time staff spend pulling paper files to perform this research. Combined with the business re-engineering efforts already described, imaging will further shorten the time required to obtain a permit.

To change the usage of a well, whether to use it differently or to use it more, the owner must go through the entire well permitting process again. Thus, the time savings described above apply not only to initial permits, but to change-use applications also.

Water well permit imaging would comprise three phases. The first imaging effort would be a front-range county with high growth and very diverse types of well permits. The second phase would include the entire front range and the third phase would image western slope documents.

Water Resources: Background and Usage Detail

File Information

1. Files to image

Well Permits: There are over 300,000 individual well permit files as of April 1996. Approximately 12,000 new permit files are added each year and approximately 60,000 new pieces of paper are added to these files annually. These constitute the Division's Phase I imaging effort.

Water Court Cases: 230,000 pages plus microfilm.

Diversion Records: 840,000 pages in bound books plus microfilm.

Subdivisions: 214,000 pages plus blue-line survey maps.

Interstate Compacts: 72,000 pages.

Streamflow Records: Approximately 77,000 11 1/2" x 17 1/2" pages.

Map Filings: 1,000 assorted size, hand-drawn maps and 23,600 35mm microfilmed maps.

Dam Construction Plans: More than 2,000 mylar sheets, approximately 24" x 36".

Well Contractor Licenses: 1,700.

2. Pages in each file

Well Permits: There is an average of 15 pages per file.

Water Court Cases: 230,000 pages plus microfilm.

Diversion Records: 840,000 pages in bound books plus microfilm.

Subdivisions: 214,000 pages plus blue-line survey maps.

Interstate Compacts: 72,000 pages.

Streamflow Records: Approximately 77,000 11 1/2" x 17 1/2" pages.

Map Filings: 1,000 assorted size, hand-drawn maps and 23,600 35mm microfilmed maps.

Dam Construction Plans: More than 2,000 mylar sheets, approximately 24" x 36".

Well Contractor Licenses: approximately 25 pages per file.

3. Update frequency of active file

Well Permits: Daily. New paper is added to the files at a rate of 60,000 pieces per year.

Water Court Cases: Daily.

Diversion Records: New records are added annually, but the existing prior record is seldom changed.

Subdivisions: Rarely, after the first two years.

Interstate Compacts: Several times each year.

Streamflow Records: New records are added annually, but the existing prior record is seldom changed.

Map Filings: Never.

Dam Construction Plans: Occasionally.

Well Contractor Licenses: Daily.

4. Color, size, shape of paper

Well Permits: Most are white 8 1/2" by 11". Exceptions include several thousand sheets that are blue, pink or green and some hundreds of goldenrod. Several thousand sheets are white legal size. There exist also several thousand large blue-line land surveys with highly variable sizes.

Water Court Cases: White; 8 1/2" x 14" and 8 1/2" x 11".

Diversion Records: Paper from 1850 to 1945 is very old, fragile, heavy manilla, size 14" x 24". Bound field books are approximately 6" x 7.5". Computer generated records are 11" x 15" and 8 1/2" x 11". In addition, there are microfiche and roll microfilm records from 1950 to the present.

Subdivisions: 8 1/2" x 11", 8 1/2" x 14" and blue-line survey maps of various sizes.

Interstate Compacts: 8 1/2" x 11" and 8 1/2" x 14" plus some bound reports.

Streamflow Records: 8 1/2" x 11"; 11 1/2" by 17 1/2".

Map Filings: 24" x 36" mylar and 35mm microfilm.

Dam Construction Plans: 24" x 36" mylar maps and 35mm microfilm.

Well Contractor Licenses: 8 1/2" x 11" and 8 1/2" x 14".

Primary-Document Information

1. Number of primary documents (excludes microfilm and mylar)

Well Permits: 4,500,000

Diversion Records: 840,000

Interstate Compacts: 72,000

Streamflow Records: 77,000

Map Filings: 1,000

Well Contractor Licenses: 42,500

2. Number of original source documents (excludes microfilm and mylar)

Well Permits: 4,500,000

Diversion Records: 840,000

Streamflow Records: 77,000

Map Filings: 1,000

Well Contractor Licenses: 42,500

3. Age of documents

Well Permits: 50 years to current.

Diversion Records: 150 years to current.

Subdivisions: 25 years to current.

Interstate Compacts: 100 years to current.

Streamflow Records: 100 years to current.

Map Filings: 100 to 150 years.

Dam Construction Plans: 150 years to current.

Well Contractor Licenses: 45 years to current.

4. Access to documents
General public, attorneys, engineers; other agencies and real estate agents for inspection and copying. Division staff in Denver and the field.
5. Backup documents
Well Permits: No.
Diversion Records: No backup for 1850 to 1950 records. Microfilm for 1950 to present.
Subdivision: Copies of these files may be found in the County Clerk's records.
Interstate Compacts: No.
Streamflow Records: No backups for original paper; some of the data are in a data base.
Map Filings: No backups for 1850 to 1900; 1900 to 1969 are on microfilm.
Dam Construction Plans: Most are microfilmed.
Well Contractor Licenses: No backups; some of the very old are microfilmed.
6. Use of fiche
The only archival documents are the diversion records and these are microfilmed annually. Other documents comprise working files in use either constantly or frequently. An average of 400 to 500 files are accessed daily to add new paper and to review. Source documents are filed in Denver and offices outside Denver have no access.

⁽¹⁾Distribution of fiche and roll film to outlying offices is not practical or efficient. The expense of providing copies of microfilm and the equipment to view and/or copy is prohibitive. In addition, microfiche and microfilm cannot readily be updated with new information.
7. Storage with State Archivist⁽²⁾
There are no duplicate records to store. Originals of certain microfilmed documents are stored with the State Archivist.

Work Flow Information

1. Document creation
Well Permit: Applications filled out; permit generated by staff; new paper submitted by applicant, driller, etc.
Water Court Case: Copies of documents submitted to water courts and originals of documents created by staff (letters, consultations, etc.)
Diversion Record: Data collected by staff, entered into computer and reports printed by staff.
Subdivision: Copies of information submitted by county planning and copies of response letters by staff.
Interstate Compact: Legal documents, contracts, letters, calculations, etc. created by staff.

Stream Flow Record: Data collected by staff, reviewed, corrected and entered into computer; reports generated by staff. Pre-computer records are hand written. Created annually with one report per structure per year.

Map Filings: Original drawings and statements filed by owner with the State Engineer's office.

Dam Construction Plans: Submitted by public and evaluated by staff.

Well Contractor License: Applications, legal documents, examination papers, bonds licenses, annual renewal applications, etc.

2. Document Use

Document Name	Internal Staff Users	External Customer Users
Well Permit	152	113
Water Court Case	150	100
Diversion Record	100	10
Subdivision	5	5
Interstate Compact	100	1
Stream Flow Record	50	5
Map Filings	150	100
Dam Construction Plans	25	10
Well Contractor Licenses	4	Rarely

3. Document purging

Most records are never purged.

Indexing Information

Well Permits: The existing Informix well permit database will be the index for the imaged files, thereby giving users access in one operation to images, tabular data and GIS information. Although other document imaging must wait until completion of well permits, the indexing scheme for them will use Informix also.

II. Oil and Gas Conservation Commission (OGCC)

General Information

OGCC includes seven Commissioners appointed by the Governor to promulgate rules, orders and regulations for oil and gas activity in Colorado. The Commissioners hold monthly hearings to promulgate rules and consider issues such as rule violations, well spacing and exception allowances.

In November 1994 the State Auditor's Office (SAO) issued the results of a performance audit of the Oil and Gas Conservation Commission in which were listed 13 specific recommendations designed to re-engineer the way business was done. (See Appendix A for specific recommendations). Commission staff agreed with the recommendations. Re-engineering efforts to date have accomplished the following:

- implementation of recommendations one, two, three and nine;
- by June 30, 1996 staff will have completed the forms design portion of recommendation six (automated implementation depends on new COGIMS capabilities) as well as all of recommendations seven and eight;
- recommendation ten will be implemented by October 1, 1996;
- staff time freed up from implementing recommendation eight will be used to provide appropriate customer service, as per recommendation eleven;
- a target implementation date of July 1, 1998 for recommendations four, five and twelve, which are dependent on rewriting COGIMS entirely; and
- a target implementation date of July 1, 1997 for recommendation 13, which addresses imaging.

Specific Work Units

OGCC division staff include 35 FTE, 30 in Denver and one each in Durango, Brush, Lamar, Ft. Lupton and Loma. Fifteen division staff perform regulatory activities, including well inspections, well-drilling permitting, review of compliance with requirements, bonding, and well-activity reviews. Eight staff perform database administration and public information activities, including maintaining and providing to the public information about oil and gas well-drilling and production. Two staff members are responsible for the conservation levy and the environmental response fund levy activities, which include accounting and collection. Five OGCC staff members work on environmental regulation and Commission hearing activities; five others work on administrative activities, including management, budget and finance and administrative support.

Document Access Requirements

The OGCC records room is available to the public only between 9:00 a.m. and 3:00 p.m. on normal workdays. It is closed two afternoons each month and all weekends and holidays. Customers outside metro-Denver must hire a service company to do their research and make copies of pertinent documents.

Due to personnel shortages, Denver staff must refuse an average of ten to twelve telephone queries each day, and the information is not available outside Denver.

The OGCC plans to implement imaging on all the regulatory reports submitted, excluding production and Conservation Levy/Environmental Response Fund (ERF), that are received after the scanning equipment is in place. In addition to making reports more easily available, the images will serve as reference for accuracy and provide access to graphical representations that cannot be captured on a tabular database. The quality assurance process will be automated and will allow archival filing of the paper record.

Open public access to imaged records ensures security for single source records currently accessed by the public which are stolen or wearing out. Originals would be stored on-site because OGCC staff must file additional original papers. The OGCC has over five thousand visitors per year who review these original source documents.

OGCC field office staff, who have not had access to paper records, have relied on telephone or fax to obtain necessary information; or have waited until work brought them to Denver. Since these records are needed to insure that specific conditions are carried out by the oil and gas operators in the field, the current process slows down information transfer and significantly delays customer service. Imaging would allow field staff full and immediate access to records, with consequent improvements in timely customer service.

Imaging will greatly enhance the availability of and public access to data, especially graphical representations.

Task steps will decrease in at least 67% of the division business which imaging will impact.

Please see table, "Imaging Impact on Forms," on following page.

OGCC: Imaging Impact on Forms

Form	Current Number of Steps	Steps with Imaging	Percentage Increase or Decrease	Percentage of Business Activities
New Mail	4	2	-50	10
Processed Forms (unable-to-locate-well file)	5	2	-60	3
Bonding Forms	2	3	+50	5
Form 2: Permit to Drill	9	6	-33	10
Form 2: Recomplete	8	6	-25	.5
Form 4: Change of Location	7	4	-43	5
Form 4: Change Well Status	7	4	-43	1
Form 4: Continuing Status Update	6	4	-33	1
Form 4: Commingle Zone	6	4	-33	1
Form 4: Intent to Plug	7	4	-43	2
Form 4: Final Plug	8	4	-50	4
Form 4: Abandoned Location	6	4	-33	1
Form 4: Spill Remediation	3	4	+33	1
Form 5: Well Completion	7	4	-43	4
Form 7: Monthly Production Report	NOT IMAGED			20
Form 8/8A: Conservation Levy/ Environmental Response Fund	NOT IMAGED			6.5
Form 10: Change of Operator	8	4	-50	13
Form 10A: Change of Operator	7	4	-43	
Form 10: Certification of Clearance	5	3	-40	
Form 10A: Certification of Clearance	5	3	-40	
Form 11: Gas Plant	2	3	+50	.5
Form 14A: Monthly Report of Fluids Injected	4	3	-25	3
Form 14B: Mechanical Integrity	6	3	-50	.5
Form: Field Inspection	4	2	-50	8

OGCC: Background and Usage Detail

File Information

	<u>Historical</u>	<u>Active</u>	<u>Total</u>
1. Files to image	32,500	25,200	57,700
2. Pages in each file			28 (average)
3. Update frequency of active file		Quarterly (average)	
4. Color, size, shape of paper	White, letter and legal size, some double-sided); small number of oversized and undersized documents.		

Primary-Document Information

1. Number of primary documents		1,592,000
2. Number of original source documents		1,592,000
3. Age of documents		50 years to present
4. Access to documents	OGCC staff; oil and gas industry; general public; other state, federal and local government agencies.	
5. Backup documents	Only a partial backup exists.	
6. Use of fiche	Electronic imaging of historical documents is the preferred method because of the related work flow improvements to be realized. If documents are not imaged, they should be microfilmed for disaster recovery.	
7. Storage with State Archivist	Currently, only original well logs and injection well reports are stored with the Archivist. Because OGCC staff use them on a random, daily basis, the 57,700 well files are not archived.	

Work Flow Information

1. Document creation	Oil and gas operators fill out and submit 72,600 documents annually. The OGCC hearing process creates an additional 17,440 documents each year.
2. Document use	Documents are accessed daily.
3. Document purging	Documents are never purged. As original source documents, they are maintained for historical and scientific purposes.

4. Document usage

Externally, 5,000 people annually visit the OGCC public room to view and copy documents. Twelve OG staff use documents all day, every day; eight use them a half-day daily; and 15 use documents daily but for less than a half-day. If free document images were available electronically, OGCC staff indicate demand and use would sky-rocket.

Indexing Information

Well records

Primary key: API number.

Commission Action

Primary key: Order Number.

Pits

Primary key: pit number.

Underground Injection Control

well records

Primary key: Facility number.

Bonds

Primary key: surety identification number.

III. Minerals and Geology

General Information

The Division of Minerals and Geology provides for the development of Colorado's mining industry while minimizing the impact to Colorado's environment and ensuring that mined land is reclaimed. The program provides services to the mining industry, private property owners, communities and the general public. It meets the state's need for orderly development of mining operations and the protection of the environment, future land use and land value. This is done through the review of mining and reclamation plans, inspection of mine sites, enforcement, the development and implementation of reclamation plans on inactive and abandoned mine sites, and providing for health, safety and training of operators.

The Office of Mined Land Reclamation and the Mined Land Reclamation Board (Board) enforce statutes designed to ensure that mining operations are conducted in an environmentally sound manner and that affected lands can be returned to beneficial use after mining operations. The seven-member Board includes five private citizens appointed by the Governor and two state officials. The laws are administered by the Office and Board. The Mined Land Reclamation Act applies to all mines in the state except coal mines. Coal mines are subject to the Colorado Surface Coal Mining Reclamation Act.

The Mined Land Reclamation Board promulgates rules and regulations and sets standards for all mining and reclamation. Under the Mined Land Reclamation Act,

the Board directly issues permits and takes enforcement actions, whereas under the Surface Coal Mining Reclamation Act, the Board serves as an appellate body for the review of decisions made by the Coal regulatory program within the Office. The Board approves the reclamation projects to reclaim abandoned mines.

Specific Work Units

The Division of Minerals and Geology is comprised of the Office of Mined Land Reclamation (MLR), the Office of Active and Inactive Mines (Mines) and the Colorado Geological Survey (CGS). The CGS is not interested in imaging at this time. The MLR includes the Coal Program and the Minerals Program. Mines includes the Inactive Mine Reclamation Program and the Mine Safety and Training Program.

Coal Program (25.0 FTE)

The coal regulatory program was developed in response to the federal Surface Mining Control and Reclamation Act, which requires all coal mines in the United States to meet minimum performance standards for environmental and public protection and reclamation. A state may gain primacy and administer its own program under this Act provided that the state coal mining and reclamation law, regulations and regulatory program meet national minimum requirements. Colorado decided to administer its own coal regulatory program and enacted the Colorado Surface Coal Mining Reclamation Act in 1979. Pursuant to the Coal Act, the Mined Land Reclamation Board promulgated rules and regulations for coal mining and reclamation activities in 1980.

The Coal Act requires that each permitted coal mine shall be inspected by the Office on the average of not less than one partial inspection per month, and one complete inspection per calendar quarter, (four complete and eight partial inspections; twelve inspections per year). The state statute requires that each permit application, permit renewal, permit revision, and technical revision shall be processed within established time frames. Review time frames and procedures, as well as enforcement actions, are legally mandated. Failure to meet these requirements would jeopardize the continuation of a state administered program.

Minerals Program (23.0 FTE)

Under the Mined Land Reclamation Act, the Board and the Minerals Program issue and enforce mining and reclamation permits for all non-coal mines in Colorado on state, federal and private lands. The mining industry and its support industries are a major economic base within the State of Colorado. In addition, many mining operations generate royalty payments to the state when mining activities occur on state lands. In total, there are 1841 mines with permitted areas totalling over 132,407 acres. The current area affected is 80,225 acres.

The Minerals Program also regulates approximately 448 active prospecting operations. These activities generally involve exploration for commercial-grade deposits of metals, oil shale, uranium, and rock aggregate products. The Board holds approximately \$7.9 million dollars in prospecting financial warranties to cover the potential state reclamation obligation at these sites in the event of bond forfeiture.

In order to carry out the statutory requirements of the Mined Land Reclamation Act, the Minerals staff reviews new mine permit applications, amendments and technical revisions to permits, permit transfers, notices of temporary cessation, and annual permit reports; responds to inquiries and holds discussions with the general public, industry, environmental groups, and media; and works with local, state and federal government agencies.

Field inspections are required for releasing bonds, permitting regular mining operations, taking enforcement actions against illegal operators, and citing operators in violation of the Act and their permit requirements. In addition, staff time is required by enforcement actions in order to comply with administrative procedures of the Act and to prepare cases for a Board hearing.

Inactive Mine Reclamation Program (IMP) (13.0 FTE)

The Division's program for inactive mine reclamation was established in 1980 to address the hazards and environmental problems arising from abandoned mines in Colorado. States having approved regulatory programs under Title V of SMCRA may assume exclusive responsibility and authority to reclaim abandoned mine lands within their borders. The program was launched with a comprehensive inventory of hazards and environmental problems associated with past mining activities. Using this inventory, Colorado prepared a statewide reclamation plan which was approved by the U.S. Department of the Interior Office of Surface Mining Reclamation and Enforcement (OSMRE) in June 1982.

Mine Safety and Training Program (6.0 FTE)

The Mine Safety and Training Program is charged with protecting the health and safety of the public and the mining community from mining-related hazards. The services which the Mine Safety and Training program provides include lending assistance to miners to ensure their health and safety; inspecting tourist mines to ensure the health and safety of the public; inspecting idle mines to ensure that they are sealed or safeguarded; maintaining state mine rescue stations and providing mine rescue training at these stations; assisting operators in establishing safety and rescue training, and equipping and coordinating mine rescue teams; assisting local government in planning, preparation, and training for emergencies at active and inactive mine sites; regulating safety and security in the use of mining explosives and diesel equipment; and collecting and preserving mining information.

This mission is accomplished through a cooperative and coordinated effort between the federal government, local government, the mining industry, and the Mine Safety and Training Program.

Document Access Requirements

Phase I

The first imaging need the division will address is the storage and retrieval requirements of the IMP. The Inactive Mine Program has approximately 225,000 images to deal with in this phase. The files to be imaged include construction project files from 1981 through 1994 (Construction grants 1 - 11). The page sizes of the source documents vary. Most are legal or letter size. Some are as large as 11" x 17". There are also some source documents which are small and irregular-sized. The source documents are on a variety of paper types, and some are "negatives".

The images will be indexed by project name and number. Access to this material is limited, and software for one stand-alone terminal only will be required. The Program may in the future wish to upgrade to a system that has the ability to run on several networked terminals. Given staffing levels, the IMP plans to handle document preparation in-house, but will use the State of Colorado Microfilm Center to handle its imaging needs.

It will be necessary to integrate the Phase I system with what is undertaken in Phase II.

Phase II

Phase II will cover the imaging needs of the Minerals and Coal Programs. These needs are much more complicated than those covered by Phase I. Present estimates are approximately 1900 minerals permits totalling 700,000 images. Approximately 14,000 of these are maps larger than 11" x 17". Estimates put the total of the 60 coal permits at 1,500,000 images and 2700 oversized maps. The source documents vary in size from letter-sized documents to 24" x 36" maps. The source files also include small and irregular-sized documents and photographs.

Imaging for the Coal and Minerals programs will involve a careful evaluation of the work flow of all the process accomplished by the programs: permitting, inspection, enforcement, bond release and administrative actions related to the Mined Land Reclamation Board and OSMRE. **After** the processes are re-engineered, staff will determine whether the application of imaging technology would be cost-effective and beneficial to managing work flow. A current, brief review of imaging needs suggests a system that:

- effectively integrates new documents added to an imaged permit file at a later date (live documents);
- retrieves documents by a permit number, document type and perhaps date;
- includes a method for finding different chapters or sections in the permit documents in the Coal Section, which are very lengthy: the hard copy can include 20 three-inch binders;
- links with the current permit tracking and document generation system;
- "images" documents generated by this system directly, bypassing the scanning phase.
- can assign differing security access to different classes of users: prospecting files for both Coal and Minerals programs are confidential and may not be viewed by the public.

The imaging system will be used by up to 50 networked workstations in Denver; field office staff in Grand Junction and Durango; and the public who wish to review coal and mineral permit files.

IV. State Land Board

General Information

The State Land Board (SLB) is the oldest and smallest of all state agencies. It was created in 1876, part of a requirement in the Enabling Act at the time of statehood. Today it has 26 staff employees and 3 full-time commissioners.

Like most other western states, Colorado is a land grant state. This means that when admitted to the Union in 1876, it received large amounts of federal land. Congress wanted each fledgling state to have a source of revenue to fund new schools. Land was chosen as a way to endow each state with an asset that could easily be sold or leased for this purpose. Colorado's original land grant was about 4.5 million acres. In the early years, revenue was produced by selling as many acres as possible. This converted the asset to cash, and at the same time, helped populate the rural areas with taxpaying citizens. However, around 1920, after about 1.5 million acres of surface had been auctioned off (the sub-surface mineral rights were often retained by the state) the Board began to limit sales. Since then most revenue has come from leasing, and the state no longer sells land in large quantities.

For the most part, the agency continues to practice a simple and reliable method of generating revenue. Each surface or mineral parcel is leased to the highest bidder, who then acquires exclusive control of the property for a certain number of years. In recent years, this style of management has been challenged by special-interest groups who claim the method is outdated. They hold that the trust lands are public and should be open to the public—at least for recreational purposes.

Today, the Land Board controls 3 million surface acres and over 4 million mineral acres. It has implemented several new programs that tend to make management much more complex than in the past. In addition to the traditional agricultural leases to farmers and ranchers the Land Board also does recreational leases, open space leases, and subdivision development leases. The minerals department leases for oil, gas, coal, sand and gravel, and hard-rock mining.

The Land Board has about 20 FTEs in the Denver office, and also maintains 5 district offices with 1.5 FTEs in each of these. The overall operation centers around four functions: surface leasing, minerals leasing, accounting, and records archiving. The first three are actual management sections within the agency structure. The latter is a statutory duty, as the Land Board is a repository for state trust land records with original documents that date back to statehood in 1876.

Specific Work Units

Surface Operations (15 FTEs). This section deals mostly with the 3,000 active agricultural leases. These are issued for ten-year terms, and are renewed and thoroughly reviewed every five years. Thus, on average there are approximately 600 surface leases processed each year. The process starts with the district office, and is completed in Denver. District office staff meet with the applicant; take the application or renewal notice; visit the site, make recommendations for renewal; and submit paperwork to Denver.

Denver staff process the application; check and calculate new rates; and places the item on the agenda of a bi-monthly Board meeting. The Board hears the request to lease and renders a decision. Denver staff write and mail the actual lease; and collect fees and lease rentals during the term of the lease.

Specialty activities. Each district office devotes 0.5-1.0 FTE principally to these matters, and serves as liaison with the other surface FTEs on these subjects:

1. Water rights: mostly stock wells and irrigation wells on the agricultural lands.
2. Development properties: managing several urban office buildings that the Land Board owns.
3. Right of Way department: easements that allow utility companies to cross Land Board for pipelines, roads, telephone lines, etc.
4. Land exchanges and sales: schedule and auction lands; exchange state lands with private and governmental parties.
5. Multiple Use: issuing recreational leases to private and governmental parties.
6. Appraisal: appraises and reviews appraisals of properties purchased or sold.

Minerals Section (5 FTEs). This section issues and monitors about 1600 active mineral leases on about 4,000,000 acres of mineral lands. All functions, including field inspections, are performed by Denver staff. These include holding lease auctions and selling leases to oil and gas companies, etc; processing paperwork and issuing leases; accounting and auditing royalties on mineral production; and field inspections of production facilities for quality control in royalty measurement.

Accounting. Accounting documents that are used daily are computerized through the state COFRs system. These are backed up at a department level and they do not require imaging. They do need archiving capability for "payment out" receipts and for general correspondence that might be kept in paper files.

Archiving Records. All sections perform this general function. Records are kept in old plat and tract books, on microfilm, and in state archives. They include thousands of file folders that track and document active leases and keep such documents as field reports and correspondence.

Document Access Requirements

The Land Board is legally mandated to retain documents in a public manner. Due to space constraints documents are split between the Land Board offices and the Division of State Archives. Customers who need documents not available in the Land Board offices must go to another floor and visit DSA. Resolution of present day issues usually requires reference to these historical documents. In addition to Land Board public room, where approximately a dozen people per day use the records, Land Board staff respond to over 100 monthly telephone queries about titles and patents older than ten years. Virtually all access to documents is done by or on behalf of public customers.

State Land Board: Imaging Impact on Forms

Form Name	Current Steps	With Imaging	Step Increase/ Decrease	Percentage Business Activities
Agricultural Lease Application	4	3	- 25%	20
Special Use Permit Application	2	2	0	5
Miscellaneous Lease Application	3	2	- 33%	5
Recreational Lease Application	2	2	0	3
Improvement Application	1	1	0	2
Right-of-Way Application	1	2	+ 50%	5
Minerals Lease Application	4	2	- 50%	20
Exploration Permit	2	2	0	5
Bonding Form	1	1	0	5
Assignment Form	2	2	0	20
Payments Received	4	2	- 50%	10

Background Detail

File Information

1. Number of images 185,354 (8.5" x 11"); 2,706 (11"x14"); 5,000 (ledger size)
2. Update active file Twice annually.
3. Color of paper White.

Primary-Document Information

1. Primary source documents 200,000
2. Original source documents 200,000
3. Age of documents 50 to 150 years
4. Users Land Board staff in Denver and in the field; general public.
5. Backup documents Documents through 1990 are backed up on microfiche and stored in the environmentally controlled vault run by State Archives.
6. Use of fiche Historically, Land Board staff have archived to fiche. They would like to go to imaging for future archival efforts.
7. Storage with State Archivist Duplicate fiched documents have been and will be stored with the State Archivist.

Work Flow Information

1. Document creation Applications for leases (about 80% hand-written); correspondence relating to leases (original materials which cannot be replaced and may be needed in legal cases).
2. Document use 50% archive; 20% monthly use; 30% annual use. Approximately 50 documents are used daily, by local customers and staff and to respond to information requests from customers outside metro-Denver.
3. Document purging Documents are never purged.
4. Document usage Documents are used once or twice a week on an ad-hoc basis.

Indexing Information

Documents would be indexed by legal description.

V. Division of Parks and Outdoor Recreation (Parks)

General Information

The purpose of the Parks program is to protect, preserve, enhance and manage the natural, scenic, scientific and outdoor recreation areas of this state for the use, benefit, and enjoyment of Colorado citizens and visitors to the state. The program is to offer the greatest possible variety of outdoor recreational opportunities and is to maintain a continuous operation of acquisition, development and management of outdoor recreation lands, waters and facilities.

Currently, staff are responsible for 40 parks spread across the state. Staff manage just over 160,000 total land acres and 44,000 water acres. In addition, Parks is responsible for a number of other programs that provide administrative, planning and technical assistance, as well as funding, to a wide variety of outdoor recreation users.

Specific Work Units

Park and Recreation Areas Program

128 FTE throughout Colorado. Staff provide, manage, and plan fishing, picnicking, hiking, bicycling, horseback riding, rock climbing, camping, boating, skiing, hunting, sightseeing, swimming, outdoor environmental education opportunities, and other recreational activities for the users of the areas.

State Recreational Trails Program

2.0 FTE in Denver. The trails program functions to encourage an increase in riding, hiking, bicycling, and other compatible recreational activities; to assist in providing for the development of trails on public and private lands; and to provide for the needs of specialized recreational motor vehicles.

Registration Unit

5:0 FTE in Denver. The purpose of the Snowmobile Program is to register snowmobiles and provide funding for the establishment and maintenance of snowmobile trails, related facilities and parking areas. The purpose of the OHV Program is to improve and enhance motorized recreation opportunities across the state while promoting safe, responsible use for OHVs.

Colorado Natural Areas Program

6.0 FTE in Denver. The Colorado Natural Areas Program preserves, protects and enhances areas in the state having diverse or unique native plant communities, special geologic and paleontologic features and habitats for rare or endangered plants and animals through a statewide system of designated natural areas for educational and scientific research use and benefit of present and future generations. The Natural Areas Program protects and preserves rare natural resources in Colorado through voluntary cooperative agreements with landowners without state government acquiring land.

Law Enforcement

4.0 FTE in Denver. Provide information about Parks rules, policies and procedures.

Statewide Programs

24 FTE in Denver who provide administrative services statewide.

Document Access Requirements

Statewide Programs staff are considering imaging storage and retrieval of real estate documents that relate to properties owned by the division. Pages are almost all white and are either 8 1/2" x 11" or 8 1/2" x 14". These original source documents date from the past fifty years to the present. There are currently no backups for these documents. Documents are generated in house by Parks staff, who are currently developing a purge process for them. Statewide Programs staff access the documents once or twice weekly on an ad-hoc basis; external users almost never. Imaged documents would use the same indexing system as the paper files:

100	Parks Division, Administration	500	Federal Government
200	Parks Division, Field	600	Other States
300	State Government	700	Private Organizations/Businesses
400	Legislature	800	Local Government

Imaging Impact

While impact may be small in terms of efficiencies gained, it would make purging and sharing records simpler and easier, which would free some staff time.

VI. Division of Wildlife (DOW)

General Information

The Division of Wildlife works to protect, preserve, enhance and manage wildlife and their environments for the use, benefit, and enjoyment of the people of Colorado and its visitors. The Division performs such functions as law enforcement, habitat management and development, surveys, research, fish rearing and stocking, regulation setting, and education of sportsmen and the general public. The Division informs and advises federal, state, and local government agencies that manage public lands and waters on techniques to enhance wildlife habitat, impacts to wildlife from proposed uses of land and water, and ways to mitigate negative impacts on wildlife habitat.

Specific Work Units

Support Services (94.0 FTE)

Includes Administrative and Technical Services (A and T) and Financial Services. A and T manages human resources, maintenance, contracting, computer services and other administrative functions; Financial Services manages contracting, licenses services, administration of federal aid and grants; and engineering.

Wildlife Programs (296.0 FTE)

Includes Habitat, Aquatic and Terrestrial Sections, and the Nongame and Endangered Wildlife Program. Habitat staff oversee integration of ecosystem management concepts into decisions; state property administration; administration of water rights, etc. Aquatic and Terrestrial staff are responsible primarily for species expertise and for hunting and fishing season recommendations. The Nongame and Endangered Wildlife Program ensures that all 750 nongame species in the state are viable and self-sustaining.

Public Services (312.0 FTE)

Responsible for management of public information and education; law enforcement; regional field operations; and the Watchable Wildlife Program provides enhanced recreational benefits to those who wish to observe, photograph and otherwise enjoy wildlife in Colorado.

Document Access Requirements

Habitat Section staff plan eventually to image approximately 250,000 pages of real estate documents that relate to properties owned by the division. Pages are of various color, size and shape. These documents are not updated. Many, but not all, are original source documents, dating from the past hundred years to the present. Division offices statewide access the documents for research and legal purposes. There are only incomplete backups for these documents. Microfiche backup is not a good option because it limits distribution and retrieval. No

documents are currently stored with the State Archivist; however, once the files are imaged, CD-ROMS would be sent to Archives. Documents are generated as the result of real property transactions. Documents are used daily; they are never purged. Internally, fifteen division staff use the documents daily for approximately a half-day. Once or twice weekly, perhaps 20 staff use documents on an ad-hoc basis. The indexing scheme is not yet in place.

VII. Colorado Water Conservation Board (CWCB)

Business Background

The Colorado Water Conservation Board (CWCB) promotes the protection, conservation, and development of Colorado's water resources in order to secure the greatest utilization of those resources for the benefit of present and future generations, and to minimize the risk of flood damages and related economic losses. Areas of focus include protection of interstate waters; state financed water projects; water development planning; flood damage prevention; the Instream Flow/Natural Lake Level Program; and the Water Conservation Program.

Specific Work Units

Flood Control and Floodplain Management (4.0 FTE)

The work elements of this section include flood hazard identification and designation, emergency response for flood fights and post-flood recovery operations, flood hazard reduction projects, coordination and implementation of special flood related programs, community assistance activities, public education activities, development of special flood related manuals and guidelines, and development of technical standards for floodplain designations in Colorado. The need for floodplain management is evidenced by the fact that flood prone areas have been identified in 212 cities and towns, and in all of Colorado's 63 counties. This section also maintains a technical information support system for floodplain reports, maps, and other related data.

Project Planning and Construction (6.0 FTE)

The elements of this section include planning and funding of water resources construction projects and studies. Projects include both new projects and the repair and rehabilitation of existing projects. Funding is provided to communities in the form of low interest loans. The Construction Fund Loan program exists to promote the protection and development of important water infrastructure sites for the benefit of Colorado Communities. Feasibility studies and other special studies can be undertaken by the CWCB on its own initiative using any money previously appropriated to the construction fund. During actual construction of a project, the staff of this section make periodic inspections. In addition to the accounts that are set up for each construction project, several other general accounts have been set up in the Construction Fund. The other accounts are: Wildlife Mitigation Account, Litigation Account, Emergency Infrastructure Repair Account, Small Projects

Account, Arkansas River Augmentation Plan Loan Account, and the Publications Account.

Water Rights Investigation (6.0 FTE)

This section develops and administers the states' Instream Flow and Natural Lake Level Program. The purpose of the Program is to correlate the activities of mankind with some reasonable preservation of the natural environment through the appropriation, acquisition, and protection of water, water rights, and interests in water. This section also provides expertise on water quantity, water quality, and water rights matters. The staff of this section protects existing instream flow water rights by reviewing the monthly water court resumes and filing objections to potentially injurious water rights applications. In addition, this section review federal regulatory activities, evaluates water rights, hydrology, and engineering matters for the Division of Wildlife and the Division of Parks and Outdoor Recreation.

Interstate Streams Investigation (5.0 FTE)

This section investigates and formulates responses to the activities of the federal government and other states which affect or might affect the use and development of Colorado's water resources. This section protects Colorado's current and future use of interstate waters through participation in interstate compact commissions and organizations, involvement in the congressional legislative process, and review and analysis of the actions of federal agencies and other states, in order to promote respect and protection for each state's allocation and to challenge any effort which might jeopardize Colorado's water use and development. In addition, this section is responsible for studies, analyses, and investigations pertaining to other programs such as the Colorado Salinity Control Program, the Endangered Fish Recovery Program, and other water resources activities for which the CWCB is responsible. This section is also actively involved in the development of the Colorado River Decision Support System (CRDSS). The principal goal of the CRDSS is to provide the capability to develop credible information on which to base informed decisions concerning management of Colorado River water resources.

Water Conservation Program (2.0 FTE)

This program was created to foster the conservation of the water of the State of Colorado by the promotion and implementation of sound measures to enhance water use efficiency in order to serve all the water needs of the State, to assure the availability of adequate supplies for future uses, and to assure that necessary water services are provided at a reasonable cost. This section develops outreach materials on the program, holds regional water conservation planning workshops, assists task groups, facilitates communications among water supply entities, maintains contact with other agencies, and ensures that water efficiency plans are developed and implemented by Colorado water suppliers.

Document Access Requirements

CWCB staff do not identify any immediate needs to image existing documents.

In the future, the division may be interested in imaging certain documents for both internal and public information uses. The types of documents include flood reports; feasibility studies; floodplain mapping; rare documents currently at the Water Resources Information Center; construction contracts; instream flow information; water rights information; and various memos.

CWCB staff feel that the division's potential imaging needs will be adequately met by the imaging system the department puts in place for the regulatory functions.

APPENDIX A: Recommendations of State Auditor's Office

Recommendation Number	Recommendation Summary	OGCC Response	Implementation Date
1	Design and implement workflow systems that support the regulatory purpose by determining appropriate numbers of personnel to review forms, defining and communicating routing procedures, establishing and monitoring goals for timely form processing, and assigning responsibility to staff to meet the goals.	Agree	07/01/95
2	Improve the effectiveness of field inspections and documentation through priorities, schedules, automation, and monitoring.	Agree	Implemented
3	Improve engineers' office review of well information by determining and communicating essential functions and holding staff accountable.	Agree	07/01/95
4	Collect and maintain production data on individual wells.	Agree	07/01/97
5	Address discrepancies in the volume-sold amounts as reported on production and levy reports.	Agree	12/31//95
6	Improve the accuracy of automated data by adapting forms and screens, training staff, and reviewing data on the system.	Agree	12/31/95
7	Ensure the usefulness of information collected by determining what information is necessary, eliminating unnecessary reporting, and modifying rules and regulations.	Agree	12/31/95
8	Improve the accuracy of reported information by returning forms that are incomplete or cost-ineffective to review, including instructions on forms, and requiring forms to be current and legible.	Agree	12/31/95
9	Eliminate duplication in well information review by clarifying specific staff duties and holding staff accountable.	Agree	12/31/95
10	Update forms to capture all information necessary for review and data entry.	Agree	12/31/95
11	Ensure that staff spend appropriate time providing customer service.	Agree	12/31/94
12	Develop and implement a new information management system utilizing a systems development life-cycle approach to eliminate unnecessary functions, incorporate data edits and updates, detect record deletions, and interface with the plat mapping system.	Agree	07/01/97
13	Determine what information is important to route and maintain and investigate the feasibility of scanning it and maintaining it on disk.	Agree	07/01/97