Department of Natural Resources

Information Management Annual Plan

1997

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1997 Abbreviated Inforamtion Management Annual Plan

I. Summary of Information Systems Plans FY 97-98 and FY 98-99

Overview

The DNR Tactical IS Plan for FY 97-98 and FY 98-99 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)**

The **Wang Migration** initiative was originally defined to replace the Wang computers and the production systems that ran in that environment. The Surface Lease Information Management System (SLIMS) and the Colorado Oil and Gas Information System (COGIMS) were the two primary systems that had to be migrated.

A two-phase approach was used. The first phase was designed to stabilize the environment by moving the applications to a UNIX environment. The second phase was to enhance the applications and make them Year 2000 compliant.

Now that we are into the second phase of the project the initiative has been renamed the **DNR Technology Initiative.** The department received partial funding to proceed with phase two in FY 97-98.

In addition to activities planned for both the current and next fiscal year, the 1997 Condensed IMAP contains accomplishments recorded under the initiatives for last fiscal year. Accomplishments for FY 92-93, FY 93-94, FY 94-95 and FY 95-96 can be found in Appendix A.

A. Accomplishments and Progress from Last Year

The Tactical Plan will document, year by year, the key accomplishments relative to IT 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.

Many of these accomplishments represent base budget projects that were started and completed within FY 96-97.

Plan Year 1996-1997:

CORIS

- The CORIS Limited License module was audited by Arthur Andersen at the request of the Legislative Audit Committee. The audit validated the CORIS design and operating effectiveness. The auditors made ten recommendations. Five recommendations have been completed, the other five are in progress;

- Combined the functions of development, computer support, printing shop, radios and telephones into one unit, now called Wildlife Technologies;

- Achieved statewide access to WildNet. Currently 138 employees have dial-in access to WildNet, up from 52 in June of 1996. 50 more will be added by January 1, 1998;

- Procured and installed a new telephone system. The RFP was released July 3, 1997; installation is planned in December 1997;

- Helpdesk software was installed in October 1996 and has recorded 481 service requests;

- Big game brochures were made available on the Internet on March 31, 1997; the Big Game Drawing results were posted there on June 16, 1997; and

- The Division of Wildlife contracted with UNISYS to provide a cost/benefit analysis of an automated on-line point-of-sale system for over-the-counter sale of hunting and fishing licenses. The Division of Wildlife has decided not to implement a point-of-sale system due to the high operational cost and the lack of maturity of these systems.

Colorado WINS

- Installed a TCP/IP wide-area-network (WAN) in the remaining two of seven water division offices and in six satellite offices, completing the project under budget and on time;

- Established a presence on the Internet, providing the public with real-time stream flow information and other information concerning the State's water resources;

- Began the design and implementation of the new water well permit system. Completed the relational data design, investigated GIS alternatives, and outlined the business rules and objectives of the new system;

- Completed the conversion of the dBase Water Rights database to the Hydrobase design in INFORMIX and delivered the data to the Colorado River Decision Support System; and

- Established a GIS workstation in each water division office to facilitate planning and data quality efforts.

Geographic Information Systems

- With the help of the department GIS Coordinator, North Sterling State Park has combined efforts with Logan County, State Division of Wildlife and the U.S. Forest Service to develop a geographic database;

- Eldorado Canyon State Park has partnered with the City of Boulder Open Space, Boulder County Parks and Open Space and Jefferson County. Each of these have contributed data and information to assist Eldorado Canyon in development of its GIS database;

- Chatfield State Park has developed a base mapping system. Their success was largely due to the assistance of the department GIS Coordinator and a partnership with the University of Denver Graduate School;

- The Colorado Geological Survey (CGS) completed a large number of GIS database development projects during FY 96-97. Each was undertaken in response to a particular project requirement or as part of longer term efforts to create "Geographically Enabled" data products from source materials which are known to be useful to a wide range of customers;

- During the past year CGS added an additional GIS workstation to facilitate increased throughput in product completion. Also, attention was given to building awareness among project staff of GIS technologies as well as providing cross-training for staff members who can assist with GIS-specific tasks;

- CGS now has two staff members working primarily on GIS database development and an increasing number of users who are familiar with and use the technology in their projects;

- Several statewide GIS coverages were created from pre-existing tabular databases using geocoding techniques or specialized "well spotting" software. These included a digital version of the Permitted Mine database maintained by the Division of Minerals and Geology (DMG); a geocoded location file of highway related rockfall hazards, developed originally by CGS; and a digital database of Colorado earthquakes which occurred between 1867 and 1996;

- CGS also has produced eleven digital geologic map databases. These are derived from current geologic mapping projects conducted by CGS staff or from existing USGS geologic mapping. A variety of other products were also developed to support internal geologic project needs;

- Installed personal computers with ArcView software to support geographic information system applications within the Soil Conservation Board, Executive Directors Office, Division of Parks and Outdoor Recreation and the Colorado Oil and Gas Conservation Commission;

- Completed "WebMaps", a pilot project to test provision of spatial data to the public over the Internet; and

- Installed a Sun workstation to serve as a departmental server for GIS data.

DNR Technology Initiative

- Received partial funding for this initiative. The State Board of Land Commissioners (SBLC) and the Division of Water Resources did not get approval for their total request. Only the Colorado Oil

and Gas Conservation Commission (COGCC) received approval for the entire amount requested for their portion of the project;

- Hired a consultant to develop a Request for Proposal (RFP) for the imaging portion of the initiative;

- Completed the business specifications for the rewrite of the Colorado Oil and Gas Information Management System (COGIMS);

- Migrated the DMG's computer processing that was previously done on the Wang system to the local area network; and

- Completed the de-installation of the Wang VS300 as the final milestone of Phase I – Stabilization.

Technical/Administrative Support

- Completed the research for an Internet provider capable of offering local access for all Colorado State Parks offices;

- State Parks signed an agreement with SuperNet in July 1996 to provide service for all park locations and a waiver of all set up fees;

- In September of 1996 all park offices began using the Internet for file transfers, e-mail and web browsing;

- State Parks has successfully designed a Colorado State Parks Administration Bulletin Board. The Bulletin Board is being used by management, administration and field personnel to communication statewide events, opportunities and general information;

- State Parks has developed a statewide park visitation program. This project was implemented to accurately gather statistics on park visits, visitor activity and frequency of visits. In a partnership with National Park Service we were able to design our databases, install the software at all our parks and begin transferring data to our main database in Denver within 3 months;

- DMG's 286 and 386 desktop computers have been replaced. The current desktop computers conform to departmental standards and are either 486 or pentiums;

- DMG has begun the migration from DOS applications to the Windows environment;

- Installed personal computers for the Soil Conservation Board in Denver and Grand Junction that provide access to the Internet. This provides e-mail capability for the Soil Conservation Board's field office and the capability to support new software applications;

- The Colorado Oil and Gas Conservation Commission created a Home Page on the World Wide Web to provide;

    - Information on various aspects of the Agency; List of current Commissioners and Hearings schedule; COGCC's Mission and Organizational Structure; Public Room hours; Field Inspection Regional Representatives; Fee Structure; Long Range Plan; Major Rulemaking Overview and Orphaned Wells and Well-sites.
    - Colorado Oil and Gas operations at a glance.
    - Informational assistance for Oil and Gas Operators, Surface Owners and Tenants.
    - Approximate Colorado Severance and Ad Valorem Tax Rates.
    - The following documents are available for downloading:
        Rules and Regulations
        Oil and Gas Conservation Act
        Sensitive Area Identification Guidance Document

- COGCC Concentrated on becoming fully prepared for a Windows environment by performing the following:

    - Purchased 20 Pentium PC's to replace aging 286 and 386 machines.
    - Upgraded memory on all existing PC's to 16 meg minimum.
    - Enrolled employees in the following classes - MS OFFICE, MS WORD, MS EXCEL, MS ACCESS.

- COGCC in cooperation with ITS and SSG, worked to resolve problems in the Colorado Oil and Gas Information Management System during the conversion from WANG to UNIX;

- The bulk of COGCC's time was used in preparation for two very important projects: a complete re-write of COGIMS and implementation of a imaging system. COGIMS has been in use at the Commission since 1982 and does not cover all the current needs of the agency. The COGIMS rewrite is a major portion of the DNR Technology Initiative and is scheduled for completion during FY 1997-98 and the imaging system is planned for FY 1998-99;

- Created an MS-Access system to support the business needs of the Youth in Natural Resources (YNR) Program;

- Moved from Acucobol to INFORMIX 4GL the system that supports distribution of the Soil Conservation Board's "Conservator" newsletter;

- Updated all personal computers on the mid-floor local area network (LAN) to either 486 or pentium processor machines;

- Have loaded Microsoft Windows software(Microsoft Word, Excel) to the local area network and scheduled training classes for users. This moves all users from a DOS environment to a Windows environment;

- Have started to upgrade users from the Windows environment to the Windows95 environment; and

- Started the update of the mid-floor LAN segment from standard twisted-pair wire to a fiber-optic wiring.

B. Project Plan

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

The department is submitting a combined decision item again this year in support of the increased cooperation between divisions related to technology planning. As stated in last year's IMAP, we feel that a combined decision item 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. During the coming budget cycle it will again be our department's number one request. The recommendation was approved by the department's Division Directors and the 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 is managing the initiative as a 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 agreed to conduct a **Technology Summit** in the fall. The Summit will include discussions focused on technology policy and strategic planning. The information developed at the Summit will be used as we update the Department's Long Range Master Plan.

One of the over-arching themes for the department defined last year was **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 continuing and new projects planned for FY 97-98 and FY 98-99 support this concept in planning for the future.

The issue of providing public access to DNR data through various delivery systems has received a great deal of attention during the past two years. We have completed our grant requirements for both the National Biological Service (NBS) and the Colorado Advanced Technology Institute (CATI). These grants were established to develop an Internet presence for the department.

We predicted that these partnerships would have promising results. This prediction has come true. The DNR Internet presence developed under these grants has lead to several other opportunities for the department.

The Colorado Ecosystem Partnership (CEP) is a high level initiative designed to improve natural resource management within the state. Federal, state and local agencies are working together to improve and preserve our state's natural resources. This partnership is intended to develop, exchange and transfer natural resources information developed at local, state and federal levels. The use of Geographic Information Systems data and meta-data play a critical role in this effort.

Another opportunity that the department may be able to take advantage of relates to a grant being pursued by the University of Colorado with the National Center for Atmospheric Research (NCAR) and the National

Science Foundation (NSF). The purpose of this alliance is to establish high-speed telecommunications links between NCAR, the State of Colorado and the State of California. DNR's participation may enable us to use this network for more than just data sharing. Opportunities are currently being explored that could lead to some innovative uses for the type of bandwidth being proposed. We anticipate a refinement of our needs during the next few months.

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

Increased hunting and fishing enthusiasts have had a significant impact on the CORIS system. Greater workloads and larger volumes of both data and transactions have begun to impact the four year old UNIX server.

The Division of Wildlife is currently reviewing a plan to upgrade the operating environment. The plan, if approved, will improve response times and service delivery to customers. It is also important to remain current on software release levels to ensure the best support possible.

Another effort currently under review by the division is the result of recommendations made by Deloitte & Touche in the 1995 DOW Management Review Final Report. The recommendation is to provide employees with a standardized configuration of hardware and software to effectively and efficiently use WildNet. WildNet is the communications network that delivers application support to DOW users.

The technology supporting this project includes the CIN, frame relay and dial-up access through US West and the DNR standards for desktop PCs, both hardware and software. Dial-up phone lines must be installed in numerous remote offices to accomplish the goals of this project. Dialing into remote terminal servers with local phone calls will eliminate the expense of dedicated circuits while providing full access to DOW information systems. It also opens the door for use by other DNR divisions.

DOW is developing a PC replacement program to ensure the most efficient operation possible in a geographically distributed environment. The division's strategy of replacing a portion of the total PC base each year will balance the workload for PC support and minimize the disruption to field staff. This project is also under review by the division.

Colorado WINS

The long range plans of both the Division of Water Resources (DWR) and the Colorado Water Conservation Board (CWCB) describe the extension of the capabilities of the Colorado River Decision Support System (CRDSS) into the other river basins of Colorado. Those major basins are Rio Grande, Arkansas, and South Platte and North Platte.

At the end of the current development contract year, which is now in progress, the major functional components of CRDSS will be complete. Phases 1 and 2 of CRDSS development have proved

successful, on-time, and under-budget, and there is no reason to expect less from Phase 3 now in development.

The DWR and CWCB are now pressed with an urgent need to have decision-support capabilities to be able to make objective analysis of increased pressures for water resources development in the San Luis Valley, which constitutes the Rio Grande River basin in Colorado. We therefore have proposed to extend the capabilities of the CRDSS into that basin, as the next phase of water decision support development.

That proposal was advanced as a factor in consideration of HB 97-1214 in the last legislative session. Although that bill was not passed, the support for this capability was not lessened.

Fortunately, the data-centered design of the CRDSS system both contemplated extension of this technology and was implemented in a way that allows relatively easy transfer to the other basins. One major new component required for extension of the system into the Rio Grande as an RGDSS is the necessity of incorporating a ground water modeling component into the planning model used by CRDSS. Since good ground water models are already available in the public domain, this fusion of models is expected to be relatively painless. Another work component of a RGDSS would be a significant increase in the amount of data now in the statewide database, called HydroBase, that would make the model results meaningful.

DWR and CWCB therefore intends to proceed to extend the CRDSS into a RGDSS as follows:

1. We will contract out a feasibility study for RGDSS, which must answer the questions of ground water model preference, additional data needs, and development cost. The CWCB severance tax fund has been designated to fund accomplishment of the feasibility study. The study must be finished by January 31, 1998.

2. Based upon the results of the feasibility study, the CWCB and DWR will ask the Water Conservation Board to recommend inclusion of the RGDSS development in the 1998 Water Conservation Board's construction fund bill, which when passed would fund projects in FY98-99. Although the feasibility study will likely recommend an implementation period, it is possible that RGDSS could be developed in one contract year, as opposed to CRDSS' three years. That expectation results from the high confidence that CRDSS technology will transfer easily to the other basins.

We therefore are proceeding as specified in our long range plans, and for which we have an urgent need (in the San Luis Valley) to have the efficient services of a water decision support system.

Geographic Information Systems

Implementing GIS technology at DNR continues to occur in a variety of ways. DNR continues to chair the Colorado Geographic Information Coordinating Committee (GICC). GICC submitted a grant application to the Federal Geographic Data Committee (FGDC) this spring. If funded, these monies will be used to create an indexed metadata clearinghouse for DNR, the Department of Local Affairs (DOLA), the Colorado Department of Transportation (CDOT) and the Colorado Department of Public Health & Environment (CDPH&E), and other federal and local agencies.

The State Board of Land Commissioners is using GIS technology to assist in implementing Amendment 16. Geographic databases will be used to quantify decision making for state land parcels and to develop a variety of maps in the public education process.

Other divisions within DNR continue to implement GIS technology to support several projects. State Parks has developed geographic databases to support park management at North Sterling and Eldorado Canyon State Parks. The Division of Water Resources has installed ArcView software at Division offices for field staff to access geographic data for decision making. The Division of Wildlife (DOW) continues developing geographic databases to support wildlife habitat and protection. DOW is developing a modeling capability with GIS technology which will be deployed over the Internet. The Colorado Geologic Survey continues to develop several maps and applications of geographic data to support hazards assessment, track mine inventories and other geologic concerns. Other divisions within DNR will develop GIS technology consistent with department standards in the future as their demands warrant.

DNR Technology Initiative

The DNR Technology Initiative is a two-year effort. During FY 97-98, we will be implementing the new COGIMS computer application enhancements, completing the application requirements for the SBLC and begin imaging for DWR.

The computer application enhancements represent the majority of the department's Year 2000 efforts. This work has been funded through last year's budget process and, when completed, will make both COGIMS and SLIMS Y2K compliant. The department worked closely with the Y2K Team to develop information to be used in their report for the Joint Budget Committee.

Even though we did not receive the total amount of funds requested in our FY 97-98 budget request, our project plans for the SBLC computer enhancements and imaging components have only been modified slightly to fit within our business requirements.

The major change in our Tactical Plan has been to extend the time frame for implementing DWR imaging from one year to three. This had been a fall back position in the event we would be unable to secure general funds for implementation in a single year.

A combined decision item for FY 98-99 is being submitted as the second year of the two year DNR Technology Initiative. This request encompasses the original two technology components: 1) computer application enhancements, and 2) imaging. It is the department's number one priority again for this year.

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 three 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 98-99.

The Colorado Minerals, Energy and Geology Advisory (MEGA) Board oversees the spending from Severance Tax fund. The MEGA Board has been asked to give approval to the Colorado Oil and Gas Commission (COGCC) to proceed with their plan to integrate imaging and GIS into the new COGIMS.

The imaging component of the FY 97-98 decision item addresses only the imaging needs for DWR. The department hired a consultant in May to assist with the development of a Request for Proposal (RFP). We expect to release the RFP in September of this year and anticipate contract signing in October. At this point, we will begin implementation of imaging for DWR. As agreed last year, the DNR has been working with Central Services and the State Archivist to solicit their input for inclusion into the RFP.

The decision item for FY 98-99 includes funding requests for continued imaging efforts for DWR and to begin the COGCC imaging process. We are requiring a scalable solution to imaging because we anticipate other divisions pursuing this technology as in the future.

Technical/Administrative Support

Our interest in the Colorado Outdoor Recreation Resource Project (CORRP) continues. Very little activity occurred with CORRP last year. We plan to stay involved with this effort but do not see significant time commitments during the planning period.

A shift in desktop software standards has been made in the department. We are moving to a Microsoft environment and eventually will no longer support WordPerfect or Quattro Pro. The move will be complete during the current planning period.

State Parks is currently developing an **Automated Citation Reporting System** for statewide use by the University of Southern Colorado under the direction of Pueblo State Park. This is a base budget project and will promote efficiency by allowing all parks to enter citation information at the park level and track the citation through the legal process. Data entry is eliminated at the Law Enforcement Unit level and statewide citation statistics will be available through downloads sent by the park areas to a central server.

The ITS section and State Parks met with Representative Ron May in July of 1997 to discuss the possibility of using the Central Indexing System, as authorized last year in **SB-155**, to provide interactive transaction capability using the Internet. We are currently exploring whether or not it is possible to sell State Park's visitor passes over the Internet. This effort will continue in the coming months and may result in the DNR participating in a pilot project designed to serve as a proof of concept application.

The issue of just-in-time training has been raised internally by the ITS section. We feel that due to the change in desktop standards and other operating environment variables training will continue to be a challenge for the department. Several training delivery systems will be evaluated to determine our options. For example, we plan to explore class room courses, computer based training, video assisted training and interactive training using the Internet. We feel that a combination of these delivery systems will eventually be put into place to meet the various needs of our customers.

Agency Stakeholders

Executive Director's Office (EDO)
In addition to the stakeholders for specific interest areas listed below, EDO stakeholders include the state legislature; Colorado's U.S. Congressional delegation; Governor, Lt. Governor, their staff, the cabinet and their agencies; institutions of higher education; libraries; industry organizations and professional associations related to those industries; environmental organizations; federal natural resource agencies; local government officials and agencies; Attorney General and staff; general public; K-12 education; community based organizations; youth employment entities; other state natural resource management agencies; environmental educators and associations; and planners and their associations. For these stakeholders, information is a bi-directional exchange, although not always in electronic form.

Information technology needs with respect to almost every one of those stakeholder groups includes two-way exchanges of all sorts of data and information, from e-mail to GIS data, plus virtually all records that are subject to open records laws: reports, publications, correspondence, technical studies, contracts, meeting agenda and minutes and directories

Minerals and Energy
Regulation of the oil and gas industry, including service companies. Protection of mineral owner's correlative rights and surface owner's ground water rights. Federal agencies, Indian tribes, other DNR departments and other state agencies, local governments in Colorado, title companies, and any parties interested in oil and gas operations within Colorado use information collected and stored by the department to assist them in making important determinations: Volume and value of oil and gas produced and sold during a given period of time from a property or properties; projected tax revenues and/or accuracy of tax monies received; economic evaluations of oil and gas properties; existence of oil and/or gas wells on properties for sale.

Provide to other state agencies and to federal agencies advice and support in analysis of geologic problems. This includes traditional geologic information such as paper maps and satatisitics as well as digital maps, databases and other computer based products.

Provide to Russia and China assistance in developing rules and regulations for their mining industries. Associate with other states in transfer of data and documents to improve the environment and mining regulation. Provide to mining consultants data, documents and maps pertaining to mining permit submittal, amendments and reclamation. Provide requested data to the public. Provide public with notice of mining regulatory activities and give public the opportunity to comment or respond.

Water
Stakeholders include water users, to whom the department is responsible to deliver the correct amount of water to those who are entitled to that water, based on natural streamflow, reservoir releases, or transmountain diversions. To document these actions, the department keeps extensive water records which become valuable to those seeking potential sources of water in the future. Bi-directional information exchange. There is a similar two-direction information exchange with the general public; federal agencies; city government water agencies throughout Colorado; people with water rights or people applying for them; water attorneys and consultants doing long term planning or adjudicating water right cases. In addition, the department provides services to and obtains information from people who want a permit to drill a water

well; provides services to and exchanges information with water agencies in downslope western states; and provides information to rafters and anglers.

The department provides and exchanges data and ideas, as well as cooperating and debating on various water issues with the Colorado Water Congress; Colorado cities and counties; water conservancy districts; public sector; other state agencies; and federal agencies. In addition, the department may also negotiate or litigate settlements with entities over disputed water right issues/cases. Through its Construction Fund Program, the department may provide loans for water projects to Colorado cities and counties, water conservancy districts, and the public sector.

Recreation

The department provides information to local and out-of-stateTourist Information Centers, including trail maps and brochures. Imaps and brochures are also provide to local, federal and other state governments. The department makes available to the general public maps, brochures and phone numbers to park offices throughout the country.

Land

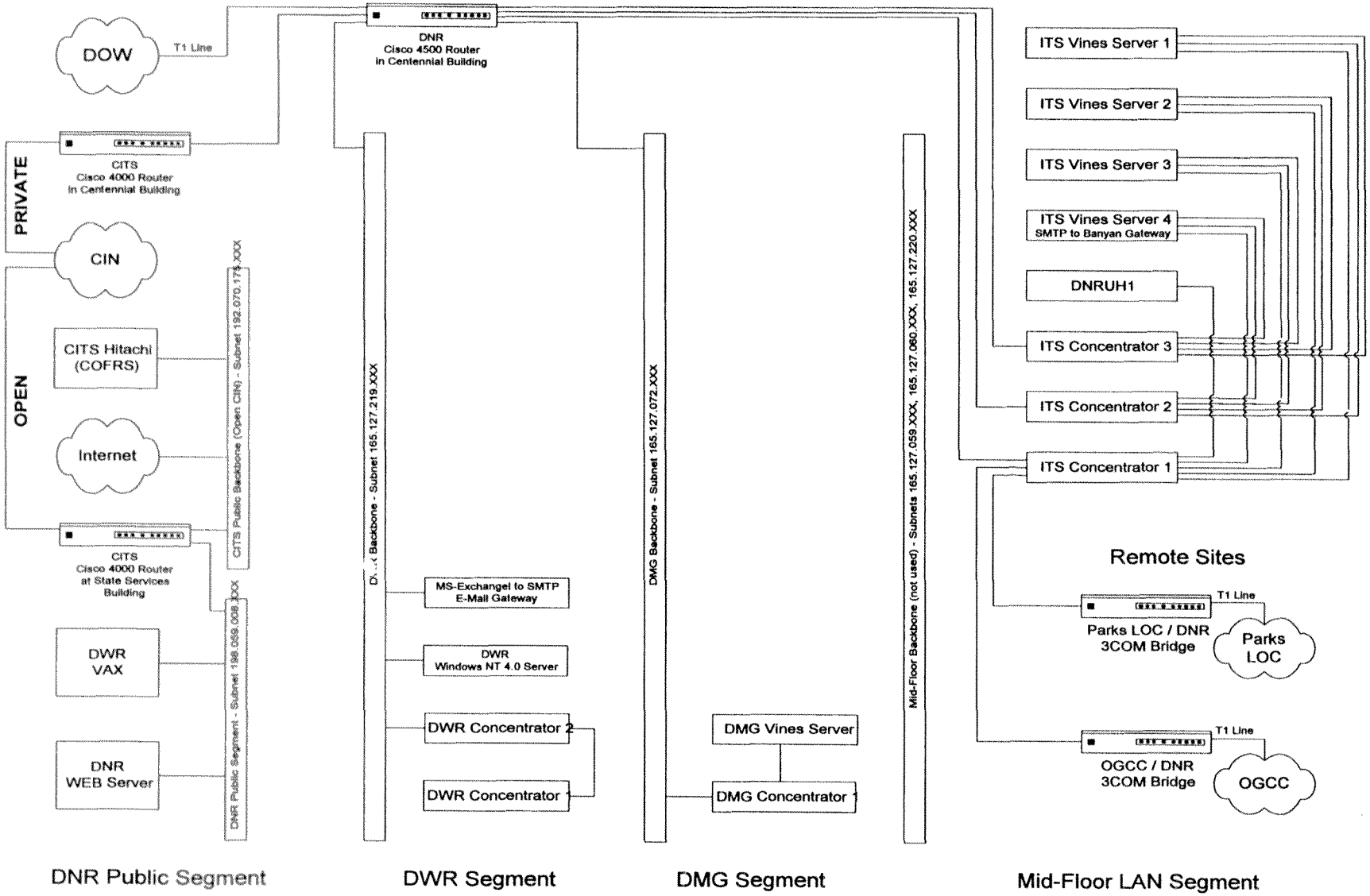
The department works with 78 Soil Conservation Districts offices; the nine-member State Soil Conservation Board; and the ten-member Board of the Colorado Association of Soil Conservation.
For these stakeholders we provide administrative, financial, and technical assistance for conservation concerns; coordination of federal, state, and local natural resource conservation programs; and information and education.

Additional stakeholders include individuals and entities involved with State Trust lands, such as trust beneficiaries, surface and mineral lessees, private landowners adjacent to trust lands, local government entities and the general public. Part of the department's connection is regulatory; much of it centers around discussion and resolution of land use issues. It is the department's responsibility to maintain timely, accurate information for these stakeholders.

Wildlife

The department regulates, exchanges information with and provides other customer related information services to the Colorado Bowhunters Association, the United Sportsmen's Council, the Colorado Environmental Coalition, the Colorado Wildlife Federation, Trout Unlimited, Pheasants Forever, the Colorado Bass Federation, Colorado Muzzleloaders Association, the Audubon Society, and the Colorado Trappers Association.

Format 1015: Network Diagram



State of Colorado
Department of Natural Resources
Hardware Inventory Summary
Date: June 30, 1997

Hardware	Count
PCs	
808X-class machines	0
80286-class machines	12
80386-class machines	100
80486-class machines	521
Pentium-class machines	646
Pentium Pro machines	13
Portable PCs	264
Other PCs (engineering workstations)	20
Macintoshes	17
Network Computers	0
TOTAL	1593
Larger Machines	
LAN servers	49
Mid-Range Systems	12
Mainframe-class machines	0
TOTAL	61
Peripherals	
Personal printers	741
Work group printers	121
Production printers	31
Terminals (3270 type, etc.)	0
	893

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, 1997

Software (by product name and version)	**Number of Licenses in Use**
Operating Systems	
MS/PC-DOS version 3.x or earlier	11
MS/PC-DOS version 4.x to 6.x	1151
Windows 3.x	1151
Windows 95	261
Other PC operating system or GUI	133
Mac System 6.x or earlier	2
Mac System 7.x	15
Novell 3.x or earlier	0
Novell 4.x	0
Banyan	400
LAN Manager	1
Windows NT	16
Other network operating system	20
Word Processing	
Word for DOS	0
WordPerfect for DOS	362
Other DOS word processors	0
Word for Windows	1102
WordPerfect for Windows	462
Other Windows word processors	0
Spreadsheets	
Lotus 123 for DOS	65
Quattro Pro for DOS	72
Other DOS spreadsheets	0
Excel for Windows	1102
Lotus 123 for Windows	10
Quattro Pro for Windows	250
Other Windows spreadsheets	0
Databases	
DBase for DOS	396
Paradox for DOS	8
Other DOS data bases	27
DBase for Windows	74
Paradox for Windows	8
Access	999
Other Windows data bases	0

Prepared by Diane Huling Phone: 866-5485 Approved by L. Shuford

Format 1050, 1996

State of Colorado
Department of Natural Resources
Staffing Requirements

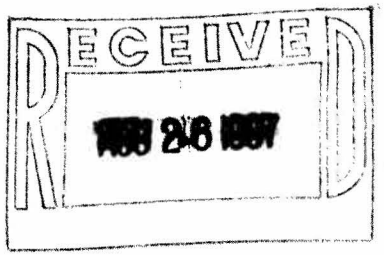
	Current Staff			1998 - 1999 Staff				1999 - 2000 Staff			
Project	Prog./ S.A.	User Support	Totals	Prog./ S.A.	User Support	Totals	New FTE Requests	Prog./ S.A.	User Support	Totals	New FTE Requests
Maintenance	6.60	14.90	21.50	6.70	13.90	20.60		7.00	14.90	21.90	
Project Category I											
COWINS: Hydrobase	3.50	2.00	5.50	4.00	2.00	6.00		4.00	2.00	6.00	
Project Category II											
COWINS: Document Imaging	0.50	0.00	0.50			0.00				0.00	
TECH	0.90	0.15	1.05	0.15	0.15	0.30		0.40	0.15	0.55	
GIS	0.50	0.50	1.00	0.50	0.50	1.00		0.50	0.50	1.00	
Project Category III											
Wang/Year 2000	2.15	0.00	2.15	2.80		2.80		0.25		0.25	
COWINS:CRDSS	3.00	0.00	3.00	4.00		4.00	1.00	5.00		5.00	
TOTAL APPLICATION STAFF	17.15	17.55	34.70	18.15	16.55	34.70	1.00	17.15	17.55	34.70	
IS Management			5.4			5.4				5.4	
Operations			2.5			2.5				2.5	
System Programmers			2.4			2.4				2.4	
Total Staff**			45.00			45.00				45.00	
Total New FTE to be Requested							1.00				

Prepared by D. Huling Telephone: 866-5485 Approved by L. Shuford Date: August 22, 1997

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

**Due to reallocation of existing positions, data processing FTE increased by 2.0 during FY96-97.

Format 3040



State of Colorado
Department of Natural Resources
Staffing Requirements

	Current Staff			1998-1999 Staff				1999-2000 Staff			
PROJECT	Prog./ S/A	User Support	Totals	Prog./ S/A	User Support	Totals	New FTE Requests	Prog./ S/A	User Support	Totals	New FTE Requests
Maintenance	6.6	14.9	19.5	6.7	14.9	19.6		9.0	14.9	21.9	
Project Category I											
COWINS: Hydrobase	3.5	2.0	5.5	4.0	2.0	6.0		4.0	2.0	6.0	
Project Category II											
COWINS: Document Imaging	0.5		0.5								
TECH	0.9	0.15	1.05	0.15	0.15	.03		0.15	0.15	0.3	
GIS	0.5	0.5	1.0	0.5	0.5	1.0		0.5	0.5	1.0	
Project Category III											
Wang/Year 2000	2.15		2.15	2.8		2.8		0.25		0.25	
COWINS: CRDSS	3.0		3.0	4.0		4.0	1.0	5.0		5.0	
TOTAL APPLICATION STAFF	15.15	17.55	32.7	16.15	17.55	33.7	1.0	17.15	17.55	34.7	
IS Management			5.4			5.4				5.4	
Operations			2.5			2.5				2.5	
System Programmers			2.4			1.4				1.4	
Total Staff			45.0**			45.0				46.0	
Total New FTE to be Requested							1.0				
Prepared by Diane Huling	Telepone: 866-5485			Approved by L. Shuford				Date: August 1, 1997			

*The "Total New FTE Requested" quantities should tie directly to the FTE requested on Format 7000 and Schedule 2D.
**Due to reallocation of existing positions, data processing FTE increased by 2.0 during FY96-97.
Format 3040

State of Colorado

Base Budget Analysis Worksheet

Department of Natural Resources

Cost Components	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY00-01	FY 01-02	Total
I. Personal Services							
Labor:							
State Employee	2,311,008	2,491,697	2,909,269	2,994,160	3,083,237	3,176,707	16,966,078
Contract & Consulting	99,972	288,600	104,000	104,500	130,000	155,500	882,572
Other	450,000	887,860	468,300	491,715	516,300	542,115	3,356,290
Total Personal Services	**2,860,980**	**3,668,157**	**3,481,569**	**3,590,375**	**3,729,537**	**3,874,322**	**21,204,940**
Total FTE	**45**	**45**	**45**	**46**	**46**	**46**	
II. Operating Expenses							
Materials and Supplies	122,772	94,323	113,290	116,457	119,781	123,275	689,898
Maintenance:							
Equipment:							
Large Systems	63,335	271,571	235,934	236,686	239,305	222,055	1,268,886
LAN Systems	31,117	32,000	37,000	42,000	47,000	52,000	241,117
Desktops	15,000	15,000	15,000	15,000	15,000	15,000	90,000
Network	7,000	7,500	12,500	13,000	18,000	18,000	76,000
Software:							
Large Systems	42,386	103,000	135,612	138,327	141,083	143,977	704,385
LAN Systems	69,467	93,817	104,310	108,003	111,881	115,953	603,431
Desktops	25,708	24,200	35,483	35,703	35,935	36,178	193,207
Network	44,000	48,000	63,960	68,480	70,911	70,911	366,262
Non-Capitalized Equipment	207,892	38,335	38,335	38,335	38,335	38,335	399,567
Processing at State Computer Center	136,626	155,709	155,709	155,800	156,000	156,000	915,844
Communications Services							
From Division of Telecommunication:							
Voice							
Data	102,030	111,254	137,254	137,254	137,254	143,254	768,300
From Outside Source							
Voice	802,100	842,100	884,100	928,200	974,505	1,023,125	5,454,130
Data	50,000	120,000	126,000	132,300	138,915	145,860	713,075

Prepared by: Larry Shuford Telephone #: 866-3410 Approved by: Ron Cattany Date: 7/31/97

Base Budget Analysis Worksheet
Department of Natural Resources

Cost Components	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Utilities/Rent							
Administrative Expenses	8,020	30,512	30,788	31,077	31,381	31,700	163,478
IT/IS Training	59,101	49,800	142,500	147,500	152,750	158,262	709,913
Travel	22,890	15,000	60,000	62,000	64,100	66,305	290,295
Other Purchased Services	15,076	4,000	3,000	3,500	4,000	4,500	34,076
Total Operating Expenses	**1,824,520**	**2,056,121**	**2,330,775**	**2,409,622**	**2,496,136**	**2,564,690**	**13,681,864**
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems	10,000	123,000	220,433	80,933	101,458	82,009	617,833
LAN Systems	96,000	83,200	121,500	124,125	126,881	129,775	681,481
Desktops	156,934	212,000	553,767	553,767	553,767	553,767	2,584,002
Network	62,400	201,000	121,000	83,500	86,125	88,881	642,906
Leased							
Large Systems - Copier	70,000	73,500	77,175	81,033	85,085	89,339	476,132
LAN Systems							
Desktops							
Network							
Software:							
Purchased							
Large Systems	5,000	190,300	130,000	35,000	35,250	35,512	431,062
LAN Systems	83,890	60,000	95,000	56,250	56,512	56,788	408,440
Desktops	37,320	81,300	87,500	52,750	53,012	53,288	365,170
Network	34,500	39,500	44,500	40,500	41,025	41,576	241,601
Leased							
Large Systems							
LAN Systems							
Desktops							
Network							
Total Capital Outlay	**556,044**	**1,063,800**	**1,450,875**	**1,107,858**	**1,139,115**	**1,130,935**	**6,448,627**
Grand Total Costs	5,241,544	6,788,078	7,263,219	7,107,855	7,364,788	7,569,947	41,335,431

Prepared by: L.J. Shuford Telephone #: 866-3410 Approved by: Ron Cattany Date: 7/31/97

State of Colorado
New Funds Analysis Worksheet
Department of Natural Resources

Cost Components	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
I. Personal Services							
Labor:							
State Employee			280,764	331,889	25,000	25,000	662,653
Contract & Consulting			567,130	321,050	27,000	27,000	942,180
Other			475,000				475,000
Total Personal Services			**1,322,894**	**652,939**	**52,000**	**52,000**	**2,079,833**
Total FTE			**1**				**1**
II. Operating Expenses							
Materials and Supplies			6,500	15,000	15,500	15,550	52,550
Maintenance:			16,950	16,950	16,950	16,950	67,800
Equipment:							
Large Systems							
LAN Systems				14,250	14,250	14,250	42,750
Desktops							
Network							
Software:							
Large Systems			15,360	15,360	15,360	15,360	61,440
LAN Systems			40,000	40,000	25,000	105,000	210,000
Desktops							
Network							
Non-Capitalized Equipment			1,200	1,100	1,100	1,100	4,500
Processing at State Computer Center							
Communications Services							
From Division of Telecommunication:							
Voice							
Data							
From Outside Source							
Voice							
Data			57,800	57,800	57,800	57,800	231,200

Prepared by: L.J. Shuford Telephone #: 866-3410 Approved by: Ron Cattany Date: 7/31/97

New Funds Analysis Worksheet
Department of Natural Resources

Cost Components	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Utilities/Rent							0
Administrative Expenses			1,750	1,750	1,750	1,750	7,000
IT/IS Training			41,100	12,500			53,600
Travel			38,380	21,500	15,000	15,000	89,880
Other Purchased Services			38,100	38,100			76,200
Total Operating Expenses			**257,140**	**234,310**	**162,710**	**242,760**	**896,920**
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems			113,000				113,000
LAN Systems			227,400	143,400			370,800
Desktops			618,220	358,300	358,300	358,300	1,693,120
Network							
Leased							
Large Systems			102,400				102,400
LAN Systems							
Desktops							
Network							
Software:							
Purchased							
Large Systems							
LAN Systems			56,500				56,500
Desktops							
Network							
Leased							
Large Systems							
LAN Systems							
Desktops							
Network							
Total Capital Outlay			**1,117,520**	**501,700**	**358,300**	**358,300**	**2,335,820**
Grand Total Costs			2,697,554	1,388,949	573,010	653,060	5,312,573

Prepared by: L.J. Shuford Telephone #: 866-3410 Approved by: Ron Cattany Date: 7/31/97

NOTE: The total amount of new funds for State Employee Personal Services related to IT positions is $51,401 and $94,445 in FY 98-99 and FY 99-00 respectively.

State of Colorado
Total Funds Analysis Worksheet
Department of Natural Resources

Date: 7/31/97

Cost Components	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 00-02	Total
I. Personal Services							
Base Budget	2,860,980	3,668,157	3,481,569	3,590,375	3,729,537	3,874,322	21,204,940
New Funds			1,322,894	652,939	52,000	52,000	2,079,833
Total Personal Services	**2,860,980**	**3,668,157**	**4,804,463**	**4,243,314**	**3,781,537**	**3,926,322**	**23,284,773**
II. Operating Expenses							
Base Budget	1,824,520	2,056,121	2,330,775	2,409,622	2,496,136	2,564,690	13,681,864
New Funds			257,140	234,310	162,710	242,760	896,920
Total Operating Expenses	**1,824,520**	**2,056,121**	**2,587,915**	**2,643,932**	**2,658,846**	**2,807,450**	**14,578,784**
III. Capital Outlay							
Base Budget	556,044	1,063,800	1,450,875	1,107,858	1,139,115	1,130,935	6,448,627
New Funds			1,117,520	501,700	358,300	358,300	2,335,820
Total Capital Outlay	**556,044**	**1,063,800**	**2,568,395**	**1,609,558**	**1,497,415**	**1,489,235**	**8,784,447**
Grand Total Costs	**5,241,544**	**6,788,078**	**9,960,773**	**8,496,804**	**7,937,798**	**8,223,007**	**46,648,004**
Source of Funds							
General Funds	1,203,232	1,057,006	2,163,024	2,485,644	1,739,374	1,785,616	10,433,896
Cash Funds	3,829,865	4,640,458	7,554,288	5,892,699	5,997,220	6,261,187	34,175,717
Federal Funds	23,462	26,204	26,204	26,204	26,204	26,204	154,482
Other	184,985	1,064,410	217,257	92,257	175,000	150,000	1,883,909

Prepared by: L.J. Shuford | Telephone #: 866-3410 | Approved by: Ron Cattany | Date: 7/31/97

State of Colorado
Department of Natural Resources
Reallocation of Base Costs to Existing Systems

A	B	C	D	E	F	G	H	I
System or Function	Personal Services	Maintenance	Computer Processing Costs	Communication Services	Training	Capital Outlay	Other	TOTAL
DNR Tech Initiative	651,860	31,250				381,300		1,064,410
IT Admin Support	967,738	282,873	155,709	29,254	22,000	331,000	3,000	1,791,574
CORIS	1,323,354	369,112		1,010,000	17,300	238,500	1,000	2,959,266
COWINS:								
Hydrobase	725,205	90,023		34,100	10,500	113,000		972,828
TOTAL	**3,668,157**	**773,258**	**155,709**	**1,073,354**	**49,800**	**1,063,800**	**4,000**	**6,788,078**

Prepared by L. Shuford Phone: 866-3410 Approved by R. Cattany, July 31, 1997

NOTE: Communicaiton Services Costs include $840,000 for the DOW telephone system. The costs for the DNR Technology Initiative have been included in this format for FY 97-98 but will not be ongoing.

Format 5040, Page 1 of 1

State of Colorado
Department of Natural Resources
Project Detail

Date: July 31, 1997

Project Title: DNR Technology Initiative	Category: III	New: Completed:	Budget Decision Item Request: XX Supplemental:
		Continuing: XX Future:	Capital Construction Request:

Business Requirements:

Customer and staff multi-user access to tabular and imaged data and to GIS data. Information available to customers via the Internet. Automated support for changed and changing business mandates and responsibilities.

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.

Technical Architecture:

Unix-based servers tied into emerging GIS applications; existing LAN and telecommunications technology; Internet presentation of data.

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; provide all multiple-user access.

Project Management:

ITS staff will manage the various projects, with assistance from technical and business staff.

Stakeholders/Communities of Interest:

Oil and gas industry, including service companies; mineral owners and surface owners. Federal agencies, Indian tribes, other state agencies, local governments in Colorado, title companies, and any parties interested in oil and gas operations within Colorado. State Trust Land trust beneficiaries, surface and mineral lessees, private landowners adjacent to trust lands, local government entities and the general public. Department staff.

Prepared by L. Shuford Phone: 866-3410 Approved by R. Cattany, July 31, 1997 Page 1 of 5

Project Detail

Department of Natural Resources

Date: July 31, 1997

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				03/01/96		09/10/96	100%
2. Develop, evaluate and release RFPs				10/01/96	01/31/98		45%
3. Imaging, Phase I Water wells and oil and gas wells; documentation; training			11/01/97		06/30/00		
4. Imaging, Phase II Water: Court documents and remaining oil and gas historical documents; begin integration with other systems			07/01/00		06/30/01		
5. Imaging, Phase III Remaining water documents			07/01/01		06/30/02		
6. Design, rewrite legacy systems Soil Conservation, Parks, OGCC, State Land Board			09/01/96	09/01/96	06/30/02		10%

Prepared by L. Shuford Phone: 866-3410 Approved by R. Cattany, July 31, 1997 Page 2 of 5

Project Detail
Department of Natural Resources

Date: July 31, 1997

Project Title: DNR Technology Initiative

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
I. Personal Services							
Labor:							
State Employee							
Contract & Consulting	18,000	210,000	528,790	294,050			1,050,840
Other		441,860	475,000				916,860
Total Personal Services	**18,000**	**651,860**	**1,003,790**	**294,050**			**1,967,700**
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			25,000	25,000	25,000	25,000	100,000
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 L. Shuford | Phone: 866-3410 | Approved by R. Cattany, July 31, 1997 | Page 3 of 5

Project Detail
Department of Natural Resources

Project Title: DNR Technology Initiative

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Utilities/Rent							
Administrative Expenses							
IT/IS Training				12,000			12,000
Travel							
Other Purchased Services							
Total Operating Expenses		**31,250**	**25,000**	**51,250**	**39,250**	**39,250**	**186,000**
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems		78,000					78,000
LAN Systems		14,200	84,000				98,200
Desktops		100,000	32,000				132,000
Network							
Leased							
Large Systems							
LAN Systems							
Desktops							
Network							
Software:							
Purchased							
Large Systems		160,300	56,500				216,800
LAN Systems							
Desktops		28,800					28,800
Network							
Leased							
Large Systems							
LAN Systems							
Desktops							
Network							
Total Capital Outlay		**381,300**	**172,500**				**553,800**

Prepared by L. Shuford Phone: 866-3410 Approved by R. Cattany, July 31, 1997 Page 4 of 5

Project Detail
Department of Natural Resources
SUMMARY

Project Title: DNR Technology Initiative		Category: III	New:	Completed:	Budget Decision Item Request: XX	Supplemental:	
			Continuing: XX	Future:	Capital Construction Request:		

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
GRAND TOTAL PROJECTED COSTS	**18,000**	**1,064,410**	**1,201,290**	**345,300**	**39,250**	**39,250**	**2,707,500**
Base Budget Cost	18,000	1,064,410	1,201,290	345,300	39,250	39,250	2,707,500
New Funds Required							
Federal Cost							
Other Cost							

Benefit Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	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 in FY 99-00.							
GRAND TOTAL PROJECTED BENEFITS				131,040	6,031,040	6,031,040	12,193,120
Benefits Less Costs (subtract Total Costs from Total Benefits)	**-18,000**	**-1,064,410**	**-1,201,290**	**-214,260**	**5,991,790**	**5,991,790**	**9,485,620**

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

IS Unit/Division: Department
Department Priority 1 of 22
IS Unit Priority 1 of 5

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 L. Shuford Phone: 866-3410 Approved by R. Cattany, July 31, 1997 Page 5 of 5

State of Colorado
Department of Natural Resources
Project Detail

Date: August 1, 1997

Project Title:		New: Completed:	Budget Decision Item Request XXX Supplemental:
COWINS: Colorado River Decision Support System (CRDSS)	Category III	Continuing XXX Future:	Capital Construction Request:

Business Requirements:

Accurately evaluate water resource management decisions. Assist in administration of the western slope rivers of Colorado. Assist in sharing relational and spatial data with other state and with federal agencies, the private sector and the general public.

Project Description:

Develop a data-driven decision support system to provide those concerned with Colorado River issues a tool for making informed and timely decisions regarding the operation of the river's water resources. The CRDSS will be used to support interstate compact analysis, water resource management, and water rights administration, using hardware and software that supports a wide range of users with diverse needs.

Technical Architecture:

Relational database is Informix; Geographic Information System is Arc/Info and Arc/View; data and tools will be available via Internet to state and federal agencies, the private sector and the general public. CITS will manage the network in compliance with the Network Infrastructure Guidelines. DNR water staff will use Windows-based PCs.

Benefits:

Litigation with Kansas over water disputes has cost the state nearly ten milion dollars so far. The CRDSS will put the state in a better position to negotiate and resolve water disputes before they go to trial. In addition, CRDSS will facilitate timely decision making, visualization of situations and better communication between water users and administrators. Improved water administration will allow the state to maximize the beneficial use of Colorado's water resources by appropriate water right holders.

Project Management:

Project Manager: Ray R. Bennett; Senior Management: Gene Jencsok, Will Burt; Staff: Ray Alvarado and Dick Stenzel.

Stakeholders/Communities of Interest:

Both Colorado and western state water user communities (state agencies, federal agencies, local governments, private sector, and general public) will benefit from CRDSS. The tools, relational database and spaital data developed will be available to this community in a new, cost-effective, user-friendly manner not available previously.

Prepared by R. Bennett Phone: 866-3581 Approved by L. Shuford, June 30, 1997 Page 1 of 5

Project Detail

Department of Natural Resources

Date: August 1, 1997

Project Title: COWINS: Colorado River Decision Support System (CRDSS)

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**
Maintenance and Operation*	4		07/01/98				
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

*In fiscal year 1998-99 the database and tools developev over four previous phases are expected to near completion and enter maintenance mode. Some new development and/or refinement of previously developed tools is anticipated to respond to comments as the products are implemented in the field.

Prepared by R. Bennett Phone: 866-3581 Approved by L. Shuford, June 30, 1997 Page 2 of 5

Project Detail
Department of Natural Resources

Date: August 1, 1997

Project Title: COWINS: Colorado River Decision Support System (CRDSS)

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
I. Personal Services							
Labor:							
State Employee			280,764	292,389	292,389	292,389	1,157,931
Contract & Consulting							
Other							
Total Personal Services			**$280,764**	**$292,389**	**$292,389**	**$292,389**	**$1,157,931**
Total FTE			**4**	**4**	**4**	**4**	
II. Operating Expenses							
Materials and Supplies			15,953	15,953	15,953	15,953	63,812
Maintenance:							
Equipment:							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Software:							
Large Systems			19,438	19,438	19,438	19,438	77,752
LAN Systems			6,976	6,976	6,976	6976	27,904
Desktops			11,073	11,073	11,073	11073	44,292
Network			13,860	13,860	13,860	13860	55,440
Non-Capitalized Equipment							0
Processing at State Computer Center							0
Communications Services							
From Division of Telecommunication:							
Voice							0
Data			26,000	26,000	26,000	26,000	104,000
From Outside Source							
Voice							0
Data							0

Prepared by R. Bennett | Phone: 866-3581 | Approved by L. Shuford, June 30, 1997 | Page 3 of 5

Project Detail
Department of Natural Resources

Project Title: COWINS: Colorado River Decision Support System (CRDSS)

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Utilities/Rent							
Administrative Expenses							
IT/IS Training			10,000	10,000	10,000	10,000	40,000
Travel			5,000	5,000	5,000	5,000	20,000
Other Purchased Services							0
Total Operating Expenses			**108,300**	**108,300**	**108,300**	**108,300**	**433,200**
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems			45,433	45,433	45,433	45,433	181,732
LAN Systems							0
Desktops			61,767	61,767	61,767	61,767	247,068
Network							0
Leased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Software:							
Purchased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Leased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Total Capital Outlay			**107,200**	**107,200**	**107,200**	**107,200**	**428,800**

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Project Detail
Department of Natural Resources
SUMMARY

Project Title: COWINS: Colorado River Decision Support System (CRDSS)	Category: III	New:	Completed:	Budget Decision Item Request: XX	Supplemental:
		Continuing: XX	Future:	Capital Construction Request:	

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
GRAND TOTAL PROJECTED COSTS			496,264	507,889	507,889	507,889	2,019,931
Base Budget Cost							0
New Funds Required			496,264	507,889	507,889	507,889	2,019,931
Federal Cost							0
Other Cost							0

Benefit Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Tangible Benefits: Improve the state's capability to resolve water disputes outside court or shorten trials.							
GRAND TOTAL PROJECTED BENEFITS							
Benefits Less Costs (subtract Total Costs from Total Benefits)							

Expected Life of Components (hardware/software):

Three years.

IS Unit/Division: Office of State Engineer
Department Priority 7 of 22
IS Unit Priority 2 of 5

Strategic Business Objective(s):

1. Provide timely and appropriate information.
3. Carry out mandates and utilization of water and administration of water rights.

Strategic System Objective(s):

4. Enhance ability to integrate and share information.
5. Provide current and accurate information.

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State of Colorado
Department of Natural Resources
Project Detail

Date: August 1, 1997

Project Title:COWINS: Implement Hydrobase-compliant Well Permitting System	Category: II	New:	Completed:	Budget Decision Item Request:	Supplemental:
		Continuing: II	Future:	Capital Construction Request:	

Business Requirements:

Reduce the time it takes to evaluate and issue a water well permit and increase the accuracy of the information related to water wells. Make the process more accessible to public customers. Tie ground water data to all other water data to increase accuracy in planning and modeling streamflows.

Project Description:

Develop a hydrobase-compliant data design which accomodates all aspects of ground water business functions and integrates related functions. Introduce work flow processing. Include GIS information for enhanced permit evaluation, more accurate location information, and to aid the public in determining location information. Include document imagiing to speed the evaluation process and allow concurrent use of the documents across all water divisions. Include rules-based logic (expert systems) in order to speed the evaluation process. Eventaully allow permit submission over the Internet.

Technical Architecture:

Store data in Informix Universal Server. Store GIS (Arc/Info) and imaging objects using data blades; store tabular data using conventional relational data base structures. Use Internet to deliver applications to staff engineers and technicians statewide. Current development tool is Visual Cafe Pro, which generates Java code and includes data base gateways. Wiide-area network is TCP/IP with NT 4.0 servers at each node. Communication speed is T1 for all destinations which will muse the new ground water applications. Project will use the existing network, servers, GIS software and database software.

Benefits:

Public benefits directly by receiving sooner a decision on well permit applications. Easier for public to apply for a permit. Improved data quality will support more accurate modelling of Colorado's water resources. Time saved in evaluating and processing permits will forestall the future need to increase engineering and technical staff. Project cost is expected to be $160,000, two-thirds of which is programmer/analyst salaries.

Project Management:

Project manager: Programmer/Analyst IV position in charge of application development. A design team of end users and programmers will review all screen design. Phases for review include data base design review; user interface review; technology implementation review; testing, training, and distribution. The leadership team of top-level management reviews the project every few months. The analyst in charge of the project will use tools for the project which the department already owns.

Stakeholders/Communities of Interest:

Public, directly and indirectly. Water engineers in Denver and around Colorado.

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Project Detail

Department of Natural Resources

Date: August 1, 1997

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

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. Data analysis and design	1.5		07/01/96	07/01/96	09/30/97		75.00%
2. System requirements and design	2.0		07/01/96	07/01/96	09/30/97		75.00%
3. Programmer training			08/31/96	08/31/96	09/30/97		25.00%
4. End user training in re-engineering concepts			08/31/96	08/31/96		08/31/96	100.00%
5. GUI design and approval	0.5		07/01/97	07/01/97	10/31/97		2.00%
6. GIS analysis and integration	0.5		07/01/96	07/01/96	06/01/98		50.00%
7. Imaging analysis and integration	0.5		07/01/98		12/31/98		0.00%
8. Prototype development	1.5		10/01/97		10/31/97		0.00%
9. User testing and approval	1.0		11/01/97		06/30/99		0.00%
10. Data conversion	1.0		10/01/98		06/30/99		0.00%
11. Production implementation	2.0		12/01/98		06/30/99		0.00%
12. End user training	1.0		09/01/98		06/30/99		0.00%

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Project Detail
Department of Natural Resources

Date: August 1, 1997

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

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
I. Personal Services							
Labor:							
State Employee	50,000	92,000	92,000	92,000			326,000
Contract & Consulting		1,000					1,000
Other							
Total Personal Services	**50,000**	**93,000**	**92,000**	**92,000**	**0**	**0**	**327,000**
Total FTE							
II. Operating Expenses							
Materials and Supplies		6,700					6,700
Maintenance:							
Equipment:							
Large Systems		3,200	3,200	3,200			9,600
LAN Systems							0
Desktops							0
Network							0
Software:							
Large Systems		3,500	3,500	3,500			10,500
LAN Systems							0
Desktops	3,000	3,000					6,000
Network							0
Non-Capitalized Equipment							0
Processing at State Computer Center							0
Communications Services							
From Division of Telecommunication:							
Voice							0
Data							0
From Outside Source							
Voice							0
Data							0

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Project Detail
Department of Natural Resources

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

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Utilities/Rent							0
Administrative Expenses							0
IT/IS Training	3,000	9,000					12,000
Travel		1,000	1,200	1,500			3,700
Other Purchased Services							0
Total Operating Expenses	**6,000**	**26,400**	**7,900**	**8,200**			**48,500**
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Leased							
Large Systems		25,000					25,000
LAN Systems							0
Desktops							0
Network							0
Software:							
Purchased		11,000					11,000
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Leased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Total Capital Outlay	**0**	**36,000**	**0**	**0**	**0**	**0**	**36,000**

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Project Detail
Department of Natural Resources
SUMMARY

Project Title: COWINS: Implement Hydrobase-coompliant Water Well Permitting	Category: II	New:	Completed:	Budget Decision Item Request:	Supplemental:
		Continuing: XX	Future:	Capital Construction Request:	

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
GRAND TOTAL PROJECTED COSTS	**56,000**	**155,400**	**99,900**	**100,200**	**0**	**0**	**411,500**
Base Budget Cost	56,000	155,400	99,900	100,200	0	0	411,500
New Funds Required							0
Federal Cost							0
Other Cost							0

Benefit Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Tangible Benefits:							
GRAND TOTAL PROJECTED BENEFITS	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Benefits Less Costs (subtract Total Costs from Total Benefits)	-56,000	-155,400	-99,900	-100,200	0	0	-411,500

Expected Life of Components (hardware/software):
Two to five years.

IS Unit/Division: Water Resources
Department Priority _____ of _____
IS Unit Priority 2 of 5

Strategic Business Objective(s):

1. Provide timely and appropriate information.
3. Carry out mandates and utilization of water and administration of water rights.

Strategic System Objective(s):

4. Enhance ability to integrate and share information.
5. Provide current and accurate information.

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State of Colorado
Department of Natural Resources
Project Detail

Date: August 1, 1997

Project Title: Colorado Outdoor Recreation Information System (CORIS) Hardware Upgrade	Category: II	New:	Completed:	Budget Decision Item Request: XX	Supplemental:
		Continuing: XX	Future:	Capital Construction Request:	

Business Requirements:

Improve response time, especially during peak business periods. Support continued growth in CORIS usage and business information volume, including history. Provide capacity to address expanded business requirements (e.g., totally limited deer licensing, which is expected to double the processing volume of limited licenses). Improve response to management information requests. Maintain availability and reliability of the mission critical CORIS system.

Project Description:

Continuation of Colorado Outdoor Recreation Information System (CORIS). Current hardware acquired in 1993 is inadequate to support continued expansion. Replace aging NCR 3455/2 server with faster server; increase data storage capacity and speed. Upgrade to current versions of operating system and database management system. Migrate current CORIS software and database. Provide Internet access infrastructure. Train technical staff.

Technical Architecture:

4+ Intel CPUs; Fast-Wide or Super SCSI controllers; RAID disk farm; high capacity backup system; high speec TCP/IP network interface. UNIX SVR4 operating system; Informix Dynamic Server RDBMS (ODBC compliant); Informix 4GL; Informix RDS and debugger; FourGen code generator; Internet development toolset.

Benefits:

Faster response time and earlier delivery of service and products (licenses) to customers. Access to expanded business history. Better system software and hardware support. Capacity to address future growth issues including data warehouse, Internet access, increased business volumes, increased information volumes, and expanded user community.

Project Management:

A Programmer/Analyst III or IV will manage the project, supplemented by technical consulting on an as-needed basis.

Stakeholders/Communities of Interest:

General public, particularly hungers. Division of Wildlife CORIS users and Division of Wildlife management. Division of Parks and Outdoor Recreation. Colorado State Patrol. Colorado Bureau of Investigation, and other law enforcement agencies.

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Project Detail

Department of Natural Resources

Date: August 1, 1997

Project Title: CORIS Hardware Upgrade

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. Detail architecture strategy	0.15		09/01/97		10/31/97		
2. Document transition strategy	0.07		10/15/97		12/15/97		
3. Write and distribute RFP	0.2		12/01/97		03/01/98		
4. Evaluate bids and award contract	0.6		04/15/98		08/01/98		
5. Install hardware	0.02		08/15/98		08/20/98		
6. Install system software	0.04		08/20/98		08/30/98		
7. Technical training	0.22		10/01/98		02/28/99		
8. Migrate CORIS	0.15		09/15/98		10/31/98		
9. Test, measure performance	1.2		11/01/98		09/01/99		
10. Cut over to production	0.05		09/03/99		09/15/99		
11							
12							

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Project Detail
Department of Natural Resources

Date: August 1, 1997

Project Title: CORIS Hardware Upgrade

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
I. Personal Services							
Labor:							
State Employee		30,000	115,500	39,500	25,000	25,000	235,000
Contract & Consulting		4,000	13,340	2,000	2,000	2,000	23,340
Other							
Total Personal Services		**34,000**	**128,840**	**41,500**	**27,000**	**27,000**	**258,340**
Total FTE							
II. Operating Expenses							
Materials and Supplies		1,000	6,500	6,500	6,500	6,500	27,000
Maintenance:							
Equipment:							
Large Systems			16,950	16,950	16,950	16,950	67,800
LAN Systems							0
Desktops							0
Network							0
Software:							
Large Systems			15,360	15,360	15,360	15360	61,440
LAN Systems							0
Desktops							0
Network							0
Non-Capitalized Equipment			1,000	1,000	1,000	1,000	4,000
Processing at State Computer Center							0
Communications Services							
From Division of Telecommunication:							
Voice							0
Data							0
From Outside Source							
Voice							0
Data							0

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Project Detail
Department of Natural Resources

Project Title: CORIS Hardware Upgrade

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Utilities/Rent							
Administrative Expenses		950	250	250	250	250	1,950
IT/IS Training			28,600				28,600
Travel			2,600				2,600
Other Purchased Services							
Total Operating Expenses		**1,950**	**71,260**	**40,060**	**40,060**	**40,060**	**193,390**
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems			113,000				113,000
LAN Systems							
Desktops							
Network							
Leased							
Large Systems							
LAN Systems							
Desktops							
Network							
Software:							
Purchased			102,400				102,400
Large Systems							
LAN Systems							
Desktops							
Network							
Leased							
Large Systems							
LAN Systems							
Desktops							
Network							
Total Capital Outlay			**215,400**				**215,400**

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Project Detail
Department of Natural Resources
SUMMARY

Project Title:	Category:	New:	Completed:	Budget Decision Item Request:	Supplemental:
		Continuing:	Future:	Capital Construction Request:	

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
GRAND TOTAL PROJECTED COSTS		35,950	415,500	81,560	67,060	67,060	667,130
Base Budget Cost		30,000	115,500	39,500	25,000	25,000	235,000
New Funds Required		5,950	300,000	42,060	42,060	42,060	432,130
Federal Cost							
Other Cost							

Benefit Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Tangible Benefits:							
GRAND TOTAL PROJECTED BENEFITS							
Benefits Less Costs (subtract Total Costs from Total Benefits)		-35,950	-415,500	-81,560	-67,060	-67,060	-667,130

Expected Life of Components (hardware/software):

Five to seven years.

IS Unit/Division: Wildlife Technologies
Department Priority 9 of 22
IS Unit Priority 3 of 5

Strategic Business Objective(s):

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

Strategic System Objective(s):

Ensure availability and reliability of mission critical systems.
Provide timely and effective business solutions.
Enhance ability to integrate and share information.
Provide current and accurate information.
Ensure infrastructure that facilitates data sharing.

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State of Colorado
Department of Natural Resources
Project Detail

Date: August 1, 1997

Project Title: Division of Wildlife Statewide Access	Category: II	New:	Completed:	Budget Decision Item Request: XX	Supplemental:
		Continuing: XX	Future:	Capital Construction Request:	

Business Requirements:

Improve efficiency by providing access to information systems and office automation tools to ALL employees, especially those in geographically isolated areas of the state who are currently unable to access the division's systems and office automation tools. Improvetimeliness and consistency of communications.

Project Description:

Ongoing effort to provide statewide access to WildNet for ALL employees of the Division of Wildlife. WildNet uses the Colorado Integrated Network (CIN) and dial-up connections to connect DOW Regions, Areas and offices throughout the state. Access to e-mail, filesharing services, office automation tools, databases, the Internet and the Colorado Outdoor Recreation Information System (CORIS) are accomplished through WildNet.

Technical Architecture:

The CIN, dial-up access through US West, and DNR standards for desktop PC hardware and software. Dial-up phone lines must be installed in numerous remote offices to accomplish the goals of this project.

Benefits:

Universal access to the division's information systems, office automation tools, e-mail, and fax services. Improved efficiency, timeliness and consistency of communication. Provide on-line access to standardized forms. Implement DNR standards for desktop hardware and software. Reduce need for travel. Local phone connection to remote terminal servers, where remote terminal servers exist, reduces cost of dedicated circuits and long-distance phone calls.

Project Management:

In-house project management will be provided by the Manager of Wildlife Technologies and a Network Analyst III.

Stakeholders/Communities of Interest:

Division employees currently isolated by lack of connectivity to WildNet. General public, especially outdoor recreationists. Division management. Other DNR agencies.

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Project Detail

Department of Natural Resources

Date: August 1, 1997

Project Title: Division of Wildlife Statewide Access

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. Determine needs of staff	0		34,150	34,150	34,242		
2. Prioritize and schedule installs	0		34,454		34,468		
3. Order and receive equipment	0		34,515		34,607		
4. Configure equipment	0		34,607		34,789		
5. Deliver and install equipment	1		34,607		34,789		
6. Train staff	0		34,699		34,880		
7							
8							
9							
10							
11							
12							

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Project Detail
Department of Natural Resources

Date: August 1, 1997

Project Title: Division of Wildlife Statewide Access

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
I. Personal Services							
Labor:							
State Employee		4,050	59,850				63,900
Contract & Consulting							
Other							
Total Personal Services	**0**	**4,050**	**59,850**	**0**	**0**	**0**	**63,900**
Total FTE							
II. Operating Expenses							
Materials and Supplies							0
Maintenance:							
Equipment:							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Software:							
Large Systems							0
LAN Systems						0	0
Desktops						0	0
Network							0
Non-Capitalized Equipment							0
Processing at State Computer Center							0
Communications Services							
From Division of Telecommunication:							
Voice							0
Data		57,800	57,800	57,800	57,800	57,800	289,000
From Outside Source							
Voice							0
Data							0

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Project Detail
Department of Natural Resources

Project Title: Division of Wildlife Statewide Access

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Utilities/Rent							0
Administrative Expenses							0
IT/IS Training							0
Travel			14,280				14,280
Other Purchased Services							0
Total Operating Expenses	**0**	**57,800**	**72,080**	**57,800**	**57,800**	**57,800**	**303,280**
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems							0
LAN Systems							0
Desktops			227,920				227,920
Network							0
Leased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Software:							
Purchased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Leased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Total Capital Outlay	**0**	**0**	**227,920**	**0**	**0**	**0**	**227,920**

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Project Detail
Department of Natural Resources
SUMMARY

Project Title: Division of Wildlife Statewide Access		Category: II	New: II	Completed:	Budget Decision Item Request: XX	Supplemental:	
			Continuing:	Future:	Capital Construction Request:		

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
GRAND TOTAL PROJECTED COSTS	0	61,850	359,850	57,800	57,800	57,800	595,100
Base Budget Cost		4,050	59,850	0	0	0	63,900
New Funds Required		57,800	300,000	57,800	57,800	57,800	531,200
Federal Cost							0
Other Cost							0

Benefit Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Tangible Benefits:							0
							0
							0
							0
GRAND TOTAL PROJECTED BENEFITS	0	0	0	0	0	0	0
Benefits Less Costs (subtract Total Costs from Total Benefits)	0	-61,850	-359,850	-57,800	-57,800	-57,800	-595,100

Expected Life of Components (hardware/software):
Three years.

IS Unit/Division: Wildlife
Department Priority: 9 of 22
IS Unit Priority 4 of 5

Strategic Business Objective(s):
Maintain or improve service levels.
Provide timely and appropriate information
Carry out mandates.

Strategic System Objective(s):
Ensure availability and reliatility of mission critical systems.
Provide timely and effective business solutions.
Enhance ability to integrate and share information.
Provide current and accurate information.
Ensure infrastructure that facilitates data sharing.

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State of Colorado
Department of Natural Resources
Project Detail

Date: August 1, 1997

Project Title: Desktop PC Replacement - Three-year Cycle	Category: II	New:	Completed:	Budget Decision Item Request: XX	Supplemental:
		Continuing: XX	Future:	Capital Construction Request:	

Business Requirements:

Support improved staff efficiency by providing responsive, standardized hardware and software on the desktop. Reduce cost and improve quality of technical support services. Support improved business communications. Maintain access to standard office automation tools and agency information systems.

Project Description:

On-going effort to provide capable, reliable, cost-effective hardware and software to agency employees. Implement regularly scheduled replacement of desktop hardware and software every three years. Replace approximately 225 desktops each year.

Technical Architecture:

Department standards for desktop PCs, both hardware and software. Intel Pentium CPUs, fax modems, Microsoft Office software, Banyan Vines and TCP/IP protocols.

Benefits:

Modern, faster computers improve efficiency and ensure compatibility with current software versions. Improved efficiency, timeliness and consistency of communication. Provide on-line access to standardized forms. Reduced technical support costs. Implement department standards for desktop hardware and software. Reduced need for travel associated with technical support.

Project Management:

In-house project management will be provided by the Manager of Wildlife Technologies and a Network Analyst III.

Stakeholders/Communities of Interest:

General public, especially outdoor recreationists. All department and division employees.

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Project Detail

Department of Natural Resources

Date: August 1, 1997

Project Title: Desktop PC Replacement - Three-year Cycle

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. Inventory current equipment	1.00		34,181		34,514		
2. Prioritize and schedule installs	0.08		34,454		Recurs annually		
3. Order and receive equipment	1.00		34,515		Recurs annually		
4. Manage physical inventory	4.00		34,577		Recurs annually		
5. Configure equipment	4.00		34,577		Recurs annually		
6. Deliver and install equipment	4.00		34,607		Recurs annually		
7. Migrate from old desktop PC	2.50		34,607				
8							
9							
10							
11							
12							

Prepared by L. Sacry Phone: 291-7465 Approved by L. Shuford, June 30, 1997 Page 2 of 5

Project Detail
Department of Natural Resources

Date: August 1, 1997

Project Title: Desktop PC Replacement - Three-year Cycle

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
I. Personal Services							
Labor:							
State Employee		45,000	175,275	175,275	175,275	175,275	746,100
Contract & Consulting			25,000	25,000	25,000	25,000	100,000
Other							
Total Personal Services	**0.00**	**45,000**	**200,275**	**200,275**	**200,275**	**200,275**	**846,100**
Total FTE							
II. Operating Expenses							
Materials and Supplies							0
Maintenance:							
Equipment:							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Software:							
Large Systems							0
LAN Systems						0	0
Desktops						0	0
Network							0
Non-Capitalized Equipment		200	200	100	100	100	700
Processing at State Computer Center							0
Communications Services							
From Division of Telecommunication:							
Voice							0
Data							0
From Outside Source							
Voice							0
Data							0

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Project Detail
Department of Natural Resources

Project Title: Desktop PC Replacement - Three-year Cycle

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
Utilities/Rent							0
Administrative Expenses			1,500	1,500	1,500	1,500	6,000
IT/IS Training							0
Travel			15,000	15,000	15,000	15,000	60,000
Other Purchased Services							0
Total Operating Expenses	**0.00**	**200**	**16,700**	**16,600**	**16,600**	**16,600**	**66,700**
III. Capital Outlay							
Equipment:							
Purchased							
Large Systems							0
LAN Systems							0
Desktops			358,300	358,300	358,300	358,300	1,433,200
Network							0
Leased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Software:							
Purchased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Leased							
Large Systems							0
LAN Systems							0
Desktops							0
Network							0
Total Capital Outlay	**0.00**	**0**	**358,300**	**358,300**	**358,300**	**358,300**	**1,433,200**

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Project Detail

Department of Natural Resources

SUMMARY

Project Title: Desktop PC Replacement - Three-year Cycle		Category:	New:	Completed:	Budget Decision Item Request: XX	Supplemental:	
			Continuing: XX	Future:	Capital Construction Request:		

Cost Components	Total Costs Thru 6/30/97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	Total
GRAND TOTAL PROJECTED COSTS	**0.00**	**45,200**	**600,275**	**600,275**	**600,275**	**600,275**	**2,446,300**
Base Budget Cost	0.00	45,000	200,275	200,275	200,275	200,275	846,100
New Funds Required	0.00	200	400,000	400,000	400,000	400,000	1,600,200
Federal Cost							0
Other Cost							0
Benefit Components	**Total Costs Thru 6/30/97**	**FY 97-98**	**FY 98-99**	**FY 99-00**	**FY 00-01**	**FY 01-02**	**Total**
Tangible Benefits:							0
							0
							0
							0
GRAND TOTAL PROJECTED BENEFITS	**0.00**	**0**	**0**	**0**	**0**	**0**	**0**
Benefits Less Costs (subtract Total Costs from Total Benefits)	0.00	-45,200	-600,275	-600,275	-600,275	-600,275	-2,446,300

Expected Life of Components (hardware/software):

Three years.

IS Unit/Division: Wildlife
Department Priority 9 of 22
IS Unit Priority 5 of 5

Strategic Business Objective(s):

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

Strategic System Objective(s):

Ensure availability and reliability of mission critical systems.
Provide timely and effective busines solutions.
Enhance ability to integrate and share information.
Provide current and accurate information.
Ensure infrastructure that facilitates data sharing.

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State of Colorado
Department of Natural Resources
Project EZ Form

Date: June 30, 1997

Project Title: COWINS: Water Commissioner Data Collection Category: II Completed Project XX

1. Expected life of the components:
   Hardware and software: 5-7 years
2. Department Priority: _____ of _____
3. IS Unit/Division Priority: ___ of ___
4. Date of preparation: June 30, 1997
5. Date of original estimate: July 11, 1994
6. Date of current estimate: June 30, 1997
7. Date of completion: February 28, 1997

	Original Estimate	Current Estimate	Actual to Date
8. Start date	July 1, 1994		July 1, 1994
9. End date	June 30, 1998		February 28, 1997
10. Personal Services	$12,000		$10,800
11. Operating Expenses	$3,000		$3,000
12. Capital Outlay	$116,500		$172,500
13. **Total Cost**	$131,500		$186,300
14. Base Budget	$131,500		$186,300
15. New Funds			
16. Other Financing			
17. **Total Source of Funds**	$131,500		$186,300
18. Total Hours			360
19. FTE			1.0

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

21. Risk: Failure to provide complete data in a timely manner could have a negative impact on management decisions.

22. Project status: completed.

23. Project description: Purchase computers and software for the "Water Commissioner Tool Kit" developed as part of the CRDSS and the South Platte Water Rights Management System. The kit consists of a Pentium PC, MS OfficePro and a FAX modem.

24. Technical architecture: Standalone PCs with FAX modem capability.

25. Impact: Colorado Water Conservation Board.

26. Comments: Project completed within budget and ahead of schedule.

Prepared by K. Daugherty Telephone: 866-5485 Approved by L. Shuford June 30,1997

Appendix A

Accomplishments and Progress from Previous Years' Efforts

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

The GIS Coordinator position was 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).

- 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.

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.

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 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.

Appendix B: Decision Items

SCHEDULE 2D - DECISION ITEM (DI)

PRIORITY: 1

DECISION ITEM TITLE: DNR Technology Initiative

PROGRAM ASSIGNMENT: Information Technology Section

STATUTORY AUTHORITY **STATE:** State Board of Land Commissioners (SBLC) Colorado Constitution, Article IX, Section 9 & 10, CRS 36-1-102; Oil and Gas Commission (OGCC), CRS 34-60-102

FEDERAL: N/A

TOTAL REQUEST AMOUNT

FUNDING SOURCE	REQUEST YEAR FY 1998-99	FOLLOWING YEAR FY 1999-2000
T	136,880	-808,340
GF		294,050
CF	-38,248	-750,956
CFE	175,128	-351,424
FF		
FTE	0.0	0.0

NARRATIVE

Program Description:

The Department of Natural Resources (DNR) is submitting the second year of a combined decision item 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.

This is the second year of the technology initiative request which was approved last year. This request is for a funding adjustment based on a statutory change for the State Board of Land Commissioners (SBLC) which removed the six percent limit on spending increases (SB 97-206, CRS 36-1-145(2)(a)(I)). That six percent limit forced the project to four years based solely on statutory restrictions. From a practical standpoint, this project needs to be completed over two years. Although the plan as submitted in last year's request has not changed, the timing on the components was revised based on the Long Bill appropriation. The Oil and Gas Conservation Commission (OGCC) will complete the software enhancements during FY 97-98, and delay the imaging project until FY 98-99.

An imaging team was created in FY 95-96 with representatives from all DNR divisions participating to analyze, from a departmental perspective, imaging needs and to develop an imaging work plan. Of the seven divisions in that plan, two were ready to move forward; the Division of Water Resources (DWR) and the Oil & Gas Commission.

The software enhancements is Phase II enhancements of the original Wang Migration project approved by the IMC several years ago. Updating the applications supporting the State Board of Land Commissioners and the Oil and Gas Commission continues to build on the work begun three years ago as a part of moving applications to department standards. SLIMS/COGIMS (surface lease and oil and gas information systems) is a tightly integrated automated system that benefits the SBLC and the OGCC by providing common data and functionality to both divisions. This effort requires two funding sources. One is from the SBLC cash funds and the other source is from OGCC severance tax fund.

Problem Statement:

IMAGING:

The current system of paper documents limits our ability to serve our customers statewide. The DWR is unable to efficiently transmit documents to other locations in the state for public access. The State Engineer's office 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. These documents exist at no other location and there is no backup should the documents be destroyed or damaged.

OGCC estimates approximately 1.6 million sheets of paper are stored in 88 file cabinets for records on the 60,000 oil and gas wells in the state and Commission hearings. The current growth in active wells in the state will result in about 90,000 additional pages of documents annually. These file documents are accessed daily by staff and the public. The use of a paper file system is cumbersome, time consuming, inefficient and creates problems relative to file integrity. There is no disaster recovery system for these files.

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 SBLC. An additional system, built in 1985, in conjunction with COGIMS, the Surface lease Information Management System (SLIMS) manages the 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, and support the land management and trust fund accounting functions. The approved decision item request reduced the portion of the request funded by the SBLC because of the statutory cap on their expenditures.

Goal Statement:

To improve the delivery of information to our customers.

Objectives:

IMAGING:

DWR:

- Serve the water records access needs of the citizens of the state by prompt transfer of water records data to various location in the state.
- Provide a system for backup of original documents.

OGCC

- Provide simultaneous access to oil and gas documents by the public and staff.
- Improve records management and operation efficiency and effectiveness.
- Manage information about gas, oil, and water injection wells in Colorado.

SOFTWARE ENHANCEMENTS:

SBLC

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

Performance Measures:
IMAGING:
DWR and OGCC:

- Percentage of documents imaged and available in electronic form to the public.
- Access time for the electronic documents compared to the present access time.

SOFTWARE ENHANCEMENTS:
SBLC:

- Increase data available to customers as well as for agency use in management decision making.
- Increase accessibility to available data by remote field offices.

OGCC:

- Increase efficiency and accuracy of application processing and reports.
- Reduce current backlog by 20 percent per year.
- Percentage of records accessible to the public.

Strategy/Justification:

IMAGING:
The Request for Proposal will be released in August 1997. Imaging for DWR will begin shortly after that and continue into FY 98-99. This request is to begin imaging for OGCC in FY 98-99. Request for record retrieval increase yearly and the process must be improved to provide adequate public service. Re-filing is eliminated when documents are delivered as electronic images. Simultaneous access to documents by multiple users, both internally and externally, will greatly improve the efficiency of internal workflow and application processing. Transferring documents into electronic images will allow off-site backup storage thus eliminating the risk of loss.

SOFTWARE ENHANCEMENTS:
To implement recommendations in the 1994 Report of the State Auditor, Public Land Management Performance Audit, areas for improvement were identified for upgrades to the automated system. OGCC also requires systems changes to serve their current customers.

Current Budgetary Constraints:
Projects of this magnitude cannot be funded from current appropriations.

ASSUMPTIONS AND CALCULATIONS

IMAGING:
The original total expenditures of 694,050 for DWR has not changed; based on the Long Bill appropriation for FY 97-98, this has been revised to a three year time line. This second year of the request is the same as the first year of 200,000. OGCC will complete the imaging project in the request year.

document scanner and scanner pc	23,000
optical disk jukebox	24,000
optical disk image server	15,000
optical disk software server	5,000
document scanning and retrieval software	30,000
image document management file server	7,000
image document management software	21,500
image document FAX server	7,000
desktop hardware (large monitors)	32,000
image system printers	8,000
vendor project management	30,000
1.6 million documents x $0.18/image captured	288,000
document preparation costs**	157,000
TOTAL	647,500

** these costs were not included in the request last year but have been identified during the research on imaging.

SOFTWARE ENHANCEMENTS:
From page EDO 28 of the decision item request for BR 97-98.

Database design and establish database tables and relationships; convert upload data from existing COGIMS and SLIMS data files	73,090
Design and develop system menus; design, code, and test data entry forms and standard queries and reports.	150,000
Informix licenses	25,000
Design and develop system menus; design, code and test data entry forms and standard queries and reports.	105,700
TOTAL	353,790

REQUEST BY LINE ITEM

LINE ITEM	FUNDING SOURCE	REQUEST YEAR FY 1998-99	FOLLOWING YEAR FY 1999-2000
EDO Information Tech Services Technology Initiative	T	136,880	-805,840
	GF	0	294,050
	CF	-38,248	-748,456
	CFE	175,128	-351,434
	FF		
	FTE	0	

COMPARISON TO THE BASE

PROGRAM	FUNDING SOURCE	PRIOR FY 1996-97 ACTUAL	CURRENT FY 1997-98 ESTIMATE	REQUEST FY 1998-99 BASE
Technology Initiative	T	0	1,064,410	1,064,410
	GF			
	CF		827,264	827,264
	CFE		237,146	237,146
	FF			
	FTE		0.0	0.0

Cash = 141,516 from the Land Board Administration Fund and 647,500 from the Operational Account of the Severance Tax Trust Fund (OGCC).

Cash Fund Exempt = 212,274 from the Land Board Administration Fund and 200,000 from reserves in the Ground Water Management Fund.

SCHEDULE 2D - DECISION ITEM

Dept. Priority:

DECISION ITEM TITLE: Colorado River Decision Support System -- Long Term Maintenance Plan

PROGRAM ASSIGNMENT: Colorado Water Conservation Board (CWCB) and Division of Water Resources (DWR)

STATUTORY AUTHORITY: C.R.S. 37-60-106; 37-80-102; 37-61-101; 37-62-101

TOTAL FUNDING REQUEST

FUNDING SOURCE	REQUEST YEAR FY 1998-1999	FOLLOWING YEAR FY 1999-2000
TOTAL	$496,264	$507,889
GENERAL FUND	$496,264	$507,889
CASH FUND	0	0
CASH FUND EXEMPT	0	0
FEDERAL FUNDS	0	0
FTE'S	4.0	4.0

DESCRIPTION OF DECISION ITEM

Program Description:
Water management on the Colorado River is governed by a series of interstate river compacts, an international treaty, a U.S. Supreme Court decree and numerous other federal and state laws. In 1992, the Colorado state legislature authorized the Colorado Water Conservation Board, in cooperation with the Colorado Division of Water Resources, to conduct a needs analysis and feasibility study for a Colorado River Decision Support System (CRDSS). Subsequently, in 1993, the Colorado State Legislature authorized the Colorado Water Conservation Board, again in cooperation with the Colorado Division of Water Resources, to design and construct the CRDSS. The principal goal of the CRDSS is to provide the capability to develop and effectively present factual information on which to make informed decisions concerning the management of Colorado River water resources.

Problem Statement:
The development of the CRDSS system will be complete in FY98. The planning tools developed in phases 1 and 2 are now in active use by water planners, and the water administration tools being developed in phase 3 will be used in daily water administration beginning next year. It is now necessary to maintain the system, the hardware, software, and data upon which accurate results from decision tools rely. Furthermore, the system is expected to be actively used by both State and private sector users. The training and support for those users is essential to furthering the usefulness of this system.

Goal Statement:
Our goal is to provide a computerized system that contains excellent tools and accurate and complete data to assist both public and private sector users in making objectively-based decisions. The system is intended to provide efficient and effective support for those who plan for the use or future development of water, and those who are responsible for the day-to-day distribution of water according to Colorado's priority system.

Objectives:

1. CRDSS software and hardware is maintained and continuously available for immediate use by any person who wishes to use it. Programming errors are corrected when reported. Update model rules for current operating conditions, and develop new modeling components when required to simulate new water operations.

2. New users are introduced to and trained in the capabilities and benefits of the system, and software and data is provided so that they may efficiently use the tools, models, and data contained in the system.

3. New water data is added into the central database at least annually, so that it is available to include the most recent water conditions in future modeling and water administration tool results.

4. Maintain the network to key locations around the state, and to the Internet, providing ready access to the decision support tools and data when needed by water decision makers.

5. Maintain the engineering and computer expertise that has developed in four staff members of the agencies throughout the development of the system, so that those experienced users are available to assist and train new users, as well as to efficiently use the system themselves in support of decision-making requirements of agencies.

Performance Measures:

1. CRDSS system is available continuously and models are operating correctly.
2. Water data is up-to-date.
3. System is user-friendly, and easily available to any interested party via the Internet.
4. Apply CRDSS models to resolve issues related to (1) Colorado River reservoir operations under the compacts, treaties, supreme decrees and federal and state laws, (2) Colorado River Basin negotiations on the efforts by California, Arizona, and Nevada to increase lower basin water supply through better management, (3) Implementation of the San Juan and Upper Colorado River Recovery Programs for Endangered Fishes, and (4) Implementation of the Colorado River Salinity Control Program.

Strategy\Justification:

- Statutory provision to develop CRDSS - HB 93-1273, SB 94-029, HB 95-1155, and SB 96-153.
- Statutory provision for the CWCB's authority and responsibility to represent the State of Colorado in negotiating and entering into compacts and agreements between other states - C.R.S. 37-60-106.
- Statutory provision for the State Engineer's authority and responsibility to represent the State of Colorado in negotiating and entering into compacts and agreements between other states - C.R.S. 37-80-102.
- Statutory provision for the Colorado River Compact - C.R.S. 37-61-101.
- Statutory provision for the Upper Colorado River Compact - C.R.S. 37-62-101.
- Statutory provision for the La Plata River Compact - C.R.S. 37-63-101.
- Colorado River Basin Salinity Control Forum - C.R.S. 37-61-101 and C.R.S. 37-60-106 (a) and (b); (organization established by the 7 Colorado River Basin States).
- Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin - C.R.S. 37-61-101 and C.R.S. 37-60-106 (a) and (b); (Program established by 3 of the 4 Upper Colorado River Basin States).

Current Budget Constraints:

There are no funds allocated to the CRDSS project in FY 1997-1998, thus, once development funds are expended there are not adequate funds available in either the CWCB or the Division of Water Resources budgets to maintain long term operation and maintenance of the CRDSS.

ASSUMPTIONS AND CALCULATIONS

Personnel			
Prof Engr III (1.0 FTE: grade 115, step 6)	$ 82,260	$ 84,732	
Phy Sci Res/Sci III (1.0 FTE: grade 107, step 5)	69,528	71,064	
Phy Sci Res/Sci I (1.0 FTE: grade 96, step 2)	42,684	45,816	
Prog/Analyst III (1.0 FTE: grade 98, step 1)	42,684	45,816	
PERA	27,273	28,455	
H/L/D	12,398	12,398	
STD	498	520	
Medicare	3,439	3,588	
Total Personal Services	$ 280,764	$ 292,389	
Equipment - Tool Kits	$ 74,600	$ 74,600	
Equipment - Network & Servers	48,100	48,100	
Equipment - CWCB & DWR	20,700	20.700	
Data maintenance	15,000	15,000	
Operating **	38,100	38,100	
Travel	6,500	6,500	
Training		12,500	12,500
Total Operating	$ 215,500	$ 215,500	
Totals	$ 496,264	$ 507,889	

** includes software, hardware, cable hubs, books, tape backup units, phone lines, data cartridges, supplies.

REQUEST BY LINE ITEM

Line Item	Funding Source	Request Year FY 1998-99	Following Year 1999-2000
Colorado River	T	$496,264	$507,889
Decision Support	GF	$496,264	$507.889
System	FTE	4.0	4.0

COMPARISON TO THE BASE

PROGRAM FUNDING	PRIOR FY 1996-97 SOURCE	CURRENT FY 1997-98 ACTUAL	REQUEST ESTIMATE	REQUEST WITH DECN. ITEM FY 1998-99 BASE
T	0	0	0	$496,264
GF	0	0	0	$496,264
FTE	0	0	0	4.0

SOURCE OF FUNDING

Source of Funding for Decision Item:

Colorado River Decision Support System		
General Fund	$496,264	$507,889

Attachments:

See attached memorandum concerning CRDSS maintenance plan for additional details

SCHEDULE 2D - DECISION ITEM

PRIORITY: 9

DECISION ITEM TITLE: Program Expansion

PROGRAM ASSIGNMENT: Administration Line Item

STATUTORY AUTHORITY **STATE:**
FEDERAL: (if applicable)

TOTAL REQUEST AMOUNT

FUND SOURCE	REQUEST YEAR FY 98-99	FOLLOWING YEAR FY 99-00
T	$1,200,000	$600,00
GF	0	
CF	1,200,000	600,00
CFE	0	
FF	0	
FTE	0.0	0.

NARRATIVE

Program Description
Funds appropriated for Administration are used to administer and support the organization Administration pays for costs for the Director's office, planning, budgeting and evaluation, support services administration, and financial services. Administration is charged with providing quality customer service to both its internal and external customers, and quality services that are necessary for the efficient operation of the agency.

Problem Statement:
Improve customer service, facilitate the efficient and timely flow and exchange of information, fully integrate information technology strategies with business strategies, enhance communication systems both internally and externally, and improve effectiveness and efficiencies in our daily operations are several recommendations that resulted from a management review of the agency in 1995. The Division was directed by the Colorado Wildlife Commission to undertake a full review of the agency to ensure the organization was operating as efficiently and effectively as possible. Recommendations from that review were well received with legislation enacted requiring the agency to implement those recommendations by January 1, 1998. Funding is requested to implement a number of technological initiatives that will support several of the recommendations in the Management Review.

In FY 1998, a proposal to implement a state-wide communication network was approved by the legislature with the first phase of the project funded under capital construction. Phase I of the project will link the Denver Headquarters with its three regional service centers located in Fort Collins, Grand Junction, and Colorado Springs. The second phase of that project scheduled for FY 1998-99 will connect fourteen remote sites across the state. A request for funding for the second phase of the project will be included in the Division's capital construction request. Installation of the new system is expected to be complete in November or December 1998. Dollars are requested in this decision item for operating and maintenance of the system.

Currently, approximately 85 locations across the statewide can not access the Division's internal network, Wildnet and information systems. Access to e-mail, file sharing services, office automation tools, databases, the Internet and CORIS are all accessible through Wildnet. Additional funding is requested in FY 1998-99 to acquire, install and setup computers in these locations so that employees have statewide access to the Wildnet.

Funding is requested for an on-going PC replacement program to reduce the amount of downtime and staff support required to maintain aging computers. This request would support regular PC and software replacement on a three-year rotating basis and expand the level of technological support for users in the agency.

Funds are requested to Upgrade the CORIS server, and its operating systems and database management system. The current server hardware which was purchased in December 1993 when the CORIS system was first implemented has reached its capacity and will not support continued growth anticipated for the system.

Goal Statement

To improve and enhance internal and external customer service, provide adequate communication capabilities and provide an infrastructure that supports the effective and efficient operation of its business processes.

Objectives

- Provide all Division employees with statewide access to the Division internal communications network - Wildnet.
- Provide employees with necessary technological tools to work more efficiently and effectively.,
- Reduce the amount of downtime spent by employees due to computer failure and repairs.
- Increase efficiency and effectiveness of business processes.
- Operate and maintain the new voice communication network purchased to improve and enhance customer services and communication and reduce operating costs.
- Maintain availability and reliability of mission critical systems.
- Plan for future growth and customer demands for information.

- **Performance Measures**:
- 85 additional locations connected to Wildnet
- Replace 200 computers annually with more reliable and improved software and hardware.
- Meet current limited licensing deadlines with the addition of more customers.
- 100% of employees/offices connected to a single phone system.

Strategy/Justification

Approval of this request will allow the Division to implement several of the recommendations in the management review and comply with SB-96-05 which requires that the recommendations in that review be implemented. Information technology request have been included in the Department's Information Management Plan.

Acquiring a integrated voice communications system will provide a number of capabilities not available now to improve service to CDOW customers. Information will be more readily available to customers statewide through 1-800-Access numbers, customer service representatives assigned to a central call center , automated attendants, and automatic customer data retrieval systems.

With the linkage of CDOW offices statewide, inter-office communications will be enhanced and long distance calls reduced. The system will provide a statewide mail system which will provide more efficient contact methods for customers and employees. It will also provide better accounting and auditing capabilities, more efficient administration of the system, and the ability for the agency to setup a customer service quality assurance program. Operating dollars are required to pay circuit/line charges to the 17 offices, and the annual maintenance contract for the system. Operating costs for the system were estimate at about $293,724 but that number is reduced to $200,000 due to cost savings realized from the purchase of a new system. Once the system becomes fully operational for an entire year, the Division will be able to better access what savings may occur from reduced long distance calls.

To provide all employees state-wide access to the Division's internal data network, a one-time increase of $300,000 is being requested. Dollars will be used to buy computers, software, and printers for 85 remote locations currently without access. Network access will provide those employees with access to the various information systems like CORIS, office automation tools, e-mail, file sharing services, and a variety of data to assist them with effectively and efficiently performing their jobs duties .

CDOW employees duties stations are located all over the state. In many cases, these duty stations are in very remote areas. To ensure the most efficient operation of its technological services in a geographically distributed environment, reliable computers must be available. Currently, the Division has a number of aging 286 and 386 computers that require major maintenance. Technical support staff are required to travel all over the state to service these computers. Software and hardware is obsolete and the ability to exchange data with other users is hampered because of software incapability. Downtime because computers are in need of repair reduce employee productivity.

Current hardware acquired for the CORIS system in 1993 is inadequate to support planned business expansion. The request will provide funding to replace the aging server with new hardware with faster processing capabilities and increased data storage capacity. Current versions of the operating software and database management system will also be purchased. The CORIS project was developed as a result of an antiquated license accounting and limited licensing system, the need for a database of wildlife customers, and improve the services to license buyers, license agents. CORIS provides valuable information on license sales, and statistics of the license buying public. Its used to analyze trends of license buyers, conduct game harvest surveys, and promote goods and services offered by the Division. Business process such as license accounting and administration of the limited licensing system are critical to the agencies mission. A crash of the system in the spring when the Division is holding their limited license drawing or at the time when licenses for the big game season are being consigned will cause major customer relation problems for the agency. Industry standards for computer replacement is every 3 to 5 years. Replacement of the hardware will allow the agency to maintain or improve services levels and provide timely and accurate information. It will support an infrastructure that enhances the ability to integrate and share information, and provide the flexibility needed to quickly respond to business changes.

Current Budgetary Constraints: The current appropriation for these two programs is not adequate to fund on-going programs and these new initiatives. Inflationary increases and additional workload requirements have maximized the Division's ability to do more without additional resources. Two of the four initiative are one-time costs and do not require on-going funding

ASSUMPTIONS AND CALCULATIONS

	FY 1998-99	FTE	FY 1999-00	FTE
Complete Statewide Access	$ 300,000	0.0	$ 0	0.0
PC Replacement Program	400,000	0.0	400,000	0.0
Statewide Phone System	200,000	0.0	200,000	0.0
CORIS Hardware/Software Upgrade	300,000	0.0	0	0.0
Total	$1,200,000	0.0	$600,000	

REQUEST BY LINE ITEM

LINE ITEM (S)	FUND SOURCE	REQUEST YEAR FY 98-99	FOLLOWING YEAR FY 99-00
Administration Operating	T	$1,200,000	$600,000
	GF	0	0
	CF	1,200,000	600,000
	CFE	0	0
	FF	0	0
	FTE	0.0	0.0

COMPARISON TO THE BASE

PROGRAM	FUND SOURCE	PRIOR FY 96-97 ACTUAL Period 12	CURRENT FY 97-98 ESTIMATE	REQUEST FY 98-99 BASE	REQUEST FY 99-00 WITH DECISION ITEM
Administration	T	$2,420,783	$3,121,160	$4,321,160	$3,721,160
Personal Services		1,541,618	2,164,890	2,164,890	2,164,890
Operating		879,165	956,270	2,156,270	1,556,270
	FTE	0.0	31.8	31.8	31.8
	GF	0	0		0
	CF	0	$3,121,160	$4,321,160	$3,721,160
	CCE	0	0	0	0
	FF	0	0	0	0