
Secretary of State

State of Oregon

PARKS AND RECREATION DEPARTMENT

**Limited Review of Cash Handling,
Accounting for Credit Card Sales, and
Selected Reservations Northwest Information Systems Controls**



Audits Division

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Audits Division

OFFICE OF THE
SECRETARY OF STATE
Phil Keisling
Secretary of State
Suzanne Townsend
Deputy Secretary of State



AUDITS DIVISION
John Lattimer
Director

(503) 986-2255
FAX (503) 378-6767

Auditing for a Better Oregon

The Honorable John Kitzhaber
Governor of Oregon
State Capitol Building
Salem, Oregon 97310

Robert Meinen, Director
Parks and Recreation Department
1115 Commercial Street NE
Salem, Oregon 97310

The enclosed report, titled *Parks and Recreation Department: Limited Review of Cash Handling, Accounting for Credit Card Sales, and Selected Reservations Northwest Information Systems Controls*, presents the results of our review of selected processes of the Oregon Parks and Recreation Department (department).

The purpose of our audit was to evaluate cash handling, recording, and reconciliation procedures used by the department to control and record cash and credit card receipts collected by the parks and the department's central reservation center, Reservations Northwest. The audit also reviewed controls over access to the reservation system, program change management, disaster recovery planning, and selected application controls over the reservation software.

The audit identified a number of ways the department could improve controls over cash in the parks and reduce the risk of theft or loss. In addition, the department needs to improve and refine accounting processes related to cash and credit card receipts. The audit also found areas of significant risk to the central reservation system. Improvements are needed in controls over system security, program change management and testing, documentation, and disaster recovery planning.

The department generally agrees with our recommendations. During the course of the audit, the department implemented a number of our recommendations and developed several new policies to immediately address certain of the issues noted in this report.

OREGON AUDITS DIVISION

John N. Lattimer
Director

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SUMMARY

PURPOSE

This audit evaluates cash handling, recording, and reconciliation procedures used by the Oregon Parks and Recreation Department (department) to control and record cash and credit card receipts collected by the parks and the department's central reservation center, Reservations Northwest. This audit also reviews controls over access to the reservation system, program change management, disaster recovery planning, and selected application controls over the reservation software.

BACKGROUND

The department operates Oregon's state parks system, which includes 48 overnight campgrounds and 172 day use areas and is visited by over 40 million people annually. During the period July 1, 1997, through April 30, 1998, the department reported receiving approximately \$10 million in park user fees. Of this amount, credit card sales represented approximately \$4.6 million; the remainder was paid by cash or check.

In January 1996, the department established a central reservation center, Reservations Northwest, which books reservations in 26 state parks, 35 Washington state parks, and two federal recreational areas. Management reports that in 1997 the center processed over 200,000 reservations.

RESULTS IN BRIEF

The audit identified a number of ways the department could improve controls over cash in the parks and reduce the risk of theft or loss. In addition, the department needs to improve and refine accounting processes related to cash and credit card receipts. The department is currently unable to reconcile credit card receipts due to significant limitations in the accounting system. The department uses TEAMS, the accounting system of the Oregon Department of Transportation (ODOT).

The audit also found areas of significant risk to the central reservation system. Improvements are needed in controls over system security, program change management and testing, documentation, and disaster recovery planning.

RECOMMENDATIONS We **recommend** the department do the following:

- Develop guidelines for park managers to use to limit the number of persons with access to park safes, funds used for making change, controlled items such as gift certificates and discount books, keeping in mind the need to maintain an adequate separation of duties.
- Provide additional training to all staff involved with cash handling and monitoring responsibilities to heighten awareness of issues and requirements.
- Work with ODOT to identify solutions to the several accounting problems presented by TEAMS related to credit cards.
- Develop policies and procedures addressing systems security, problem management, and disaster recovery planning.
- Complete the installation of the test computer, and perform tests and quality control on all system upgrades and program changes prior to moving them into the live production setting.

AGENCY'S RESPONSE The department generally agrees with the recommendations.

INTRODUCTION

Oregon Parks and Recreation Department was initially created as a branch of the Highway Department (now Oregon Department of Transportation) in 1921. The 1989 Legislature created a separate department effective January 1, 1990.

The department operates Oregon's state parks system under the provisions of Oregon Revised Statutes chapter 390. The Parks and Recreation Commission sets policy for the department and has specific authority to purchase and sell property and set fees for use of parks facilities. The state parks director administers the system, which includes 48 overnight campgrounds and 172 day use areas, through a headquarters staff in Salem and field staff located at the various park sites. More than 40 million people visit Oregon parks annually.

In January 1996, the department established a central reservation center, Reservations Northwest, which books reservations in 26 state parks, 35 Washington state parks, and two federal recreational areas. The center includes a toll-free information line that provides park and recreational information about campgrounds and other visitor attractions, both public and private, in Oregon and Washington. In 1997, the center reported processing over 200,000 reservations.

This audit reviewed the adequacy of procedures being used to process, safeguard, deposit, record, and reconcile cash and credit card receipts from user fees. Additionally, we reviewed the adequacy of selected information systems controls for the reservation center.

SCOPE AND METHODOLOGY

The scope of our review focused on cash handling, recording, and reconciliation procedures used by the department to control and record receipts collected by the parks and the department's central reservation center.

We made on-site visits to two parks and to the department's reservation center in Portland. At those locations, we observed and made inquiries about cash handling processes and physical security controls.

We gained a basic understanding of the roles of park administrative and program staff, Oregon Department of Transportation's (ODOT) Financial Services Branch staff, and Parks headquarters staff in accounting for and balancing the department's daily transactions and recording revenues into TEAMS, ODOT's accounting system.

We tested the timeliness of deposits and reviewed credit card activity for one park and the reservation center. We expanded the review to an analysis of the credit card accounting and reconciliation processes department-wide. This encompassed gaining an understanding of how credit card deposits are processed in TEAMS and the state's R*STARS financial reporting system, a similar system.

We identified several specific issues related to the department's central reservation system that warranted further review. As a result, we performed a limited review of controls over access to the system, program change management, disaster recovery, and selected application controls over the reservation software. Consequently, at the reservation center we interviewed reservation center management and technical staff about access to the computer system, software testing, certain software application controls, and other practices in place intended to minimize risk to the reservation center's computer system and data. We obtained and reviewed available reservation center policies and procedures, computer logs and records, and other relevant data. We observed the actual booking of reservations and payment posting processes. Work performed was limited primarily to the central reservation program. However, limited procedures were also performed related to the reporting module of the system.

This audit was conducted in accordance with generally accepted government auditing standards. We limited our review to the areas specified in this section of the report.

CHAPTER I:
CASH HANDLING AND ACCOUNTING FOR
RECEIPTS FROM CREDIT CARD SALES

The department separated from ODOT in 1990, but continued using ODOT's accounting system, TEAMS. Other than the monthly reconciliation of TEAMS to the department's Treasury (bank) account, which is still performed by ODOT's Financial Services Branch, Parks personnel perform the daily accounting activity. The daily accounting activity is decentralized. Most transactions originate and are recorded at the individual parks by administrative specialists and park rangers. The individual parks deposit their user fees at local banks around the state; these deposits go into the department's Treasury account.

For the 1997-1999 biennium, total department budgeted revenues are projected at approximately \$81.7 million. Of this amount, \$27 million, or 33 percent, is expected to be obtained from park user fees. During the period July 1, 1997, through April 30, 1998, the department reported receiving approximately \$10 million in user fees. Of this, approximately \$4.6 million was taken in the form of credit card sales.

**RISKS TO CASH IN
PARKS**

Due to the following conditions, cash collected in the parks may be exposed to a higher than necessary risk of loss:

- At the parks we visited, several people had access to cash on hand. In these situations, if funds are missing, the widespread access to cash makes it difficult or impossible to identify the responsible person.
- Some parks do not summarize their own deposits. Instead, each person balances his or her own till. The money is sealed in an envelope for deposit. The related paperwork goes to the park office for comparison to the deposit slip after it has been completed by the bank. This process shifts control over the accuracy of the deposit amount from the park to the bank. Furthermore, in the event a shortage occurs, this process makes it more difficult to identify at which point the loss happened.
- Parks recently changed its policy on the amount of undeposited receipts that park locations can hold before needing to make a deposit. This increases the risk of loss and decreases interest earned due to undeposited funds.

Oregon Revised Statutes 293.265 and Oregon State Treasury policy require that receipts be deposited no later than the next business day, unless an agency elects to document a valid business reason for a “reasonable, longer period.” In any case, deposits are to be made not less than weekly. The department submitted documentation for an exemption from daily deposits for the parks, stipulating certain dollar limits that could be retained before a deposit had to be made. The policy change that was made recently increased the amount of receipts that could be held during peak season months before a deposit had to be made. Given the risks posed to undeposited cash at many of the parks due to their remote locations, we do not believe this to be a reasonable change.

- Each till begins the day with a set (imprest) dollar amount for making change. These change funds have not been adequately accounted for or controlled. The imprest amounts are recorded for each park on the TEAMS accounting system; however, some of the amounts recorded by the parks do not agree to the amounts on TEAMS. The department is aware of the issues surrounding change funds and is currently reviewing possible solutions.

Without adequate controls in place to safeguard cash, procedures may not be adequate to prevent or detect loss or theft of funds during the normal course of daily business. The department has recently updated its procedures manual, including addressing some of the issues described above. The department distributed copies of the manual to the parks and provided training on the new procedures, with additional training planned this fall. The department also has established a field support position to train the parks’ personnel in proper cash handling procedures.

We recommend Parks do the following to further decrease the risks described above:

- Develop guidelines for park managers to use to limit the number of employees with access to safes, change funds, cash equivalents (e.g. gift certificates, Camper Bucks) and other negotiable items. The guidelines also should address ways to maintain an adequate separation of incompatible functions (custody of assets, record

keeping, and authorization) or to provide compensating supervisory reviews when segregation is not feasible.

- Develop and implement a procedure for the parks to control and track deposits made when the banks are providing deposit tallying services.
- Reevaluate the recent policy change regarding frequency of deposits.
- Continue to provide training to all staff involved with cash handling and monitoring responsibilities.

AGENCY'S RESPONSE:

Guidelines for access to controlled items are addressed in the RRAP and/or Policy and Procedure manuals. The internal auditor/trainer uses these guidelines as check-off items when reviews are performed at each park. The safe is a specific line item on the check-off list.

Parks management is reviewing policy and criteria for determining different types of security access and the number of employees granted access authority. In addition, the new Accountant 3 is establishing a database listing each employee's security. The database will produce reports that will organize and disclose security access for each employee.

Each person who balances his/her till at the park puts a deposit slip (tally sheet form) in a sealed envelope with the money for deposit. It lists the change, currency, and checks from the till. This two-part form goes to the bank, bank staff open the envelope, each item (change, currency, check) is marked off on the tally sheet by the bank employee. Any error found is noted on the tally sheet and the bank employee initials the tally sheet. All the envelopes, tally sheet, and other items except the money are returned to the park in the deposit bag.

We feel the current policy regarding delayed depositing provides good cash controls and also takes into account extenuating circumstances like staffing and location. However, we will reexamine this issue in the parks and allow exceptions for parks in remote locations.

Each November or December Financial Services provides training to all park employees responsible for cash handling in the parks. This training not only addresses cash handling but also highlights changes to the RRAP for the upcoming season.

The training includes hands-on experience in reading reports, Audit Trail Inquiry (an on-line search for completed transactions), completing the new automated revenue report, researching deposit errors online, and Parks office software questions and updates. A reference manual was provided and will be updated as needed to provide a training tool for new employees.

The internal auditor/trainer conducts field reviews and makes recommendations to the Area Managers, Park Managers, and the Financial Manager on identified training needs for improving compliance with the RRAP manual. Revisions are on-going to the RRAP manual, including items that come up during the training sessions. The revisions are distributed to the field as they are made. A new RRAP manual will be issued in early 1999.

Now that financial services has additional accountants, this will be an ongoing process that will include visits to parks to provide additional training in areas such as payroll and contracts.

RECORDING RECEIPTS

The process used by the parks to record daily receipts into TEAMS could be simplified and made less prone to errors. Currently, daily revenue is entered into the accounting records on two separate forms—one for cash sales and one for credit card sales. The forms must be reconciled to total revenue for the day to assure they are correct. Revenues including credit card sales must be entered as cash. Then the credit card sales are reversed out and re-entered as credit card receipts. During the process of making these entries, errors are made. Since our review found these transactions were out of balance, it is apparent they are not being balanced as the entries are made or in a subsequent review process.

For example, when we examined June 1997 transactions for one of the more popular parks, we noted that six different recording errors were made in 29 days of input. Total absolute value of the errors was \$1080 (real value \$686¹) out of \$10,000 total credit card sales for the month. The errors occurred because cash sales and credit card sales were not reconciled to total revenues at the time of input.

Because TEAMS cash and credit card sales must reconcile to total revenues, we analyzed revenue entries for the department as a whole and found that the entries made for fiscal year 1997 were out of balance by more than \$50,000. Fiscal year 1998 entries through April 30 were out of balance by \$40,400. If all the entries had been correct and properly balanced, the result would net to zero.

From the analysis we could also see that the errors were occurring across the department. For fiscal year 1997, only

¹ The underlying transactions encompassed both positive and negative amounts.

three of the department's 34 management units were in balance for their revenue recording process; for fiscal year 1998 through April 30, 1998, only one was in balance. Corrections will need to be made to the accounting records before revenue can be considered correctly stated.

During our review of the recording process, we recommended the department combine the two separate forms into one self-balancing form to reduce the risk of errors. The department has already implemented that recommendation by drafting a single combined form and is currently in the process of testing and refining it.

We commend the department for responding proactively to our recommendation.

We recommend the department formulate a plan for addressing the existing out-of-balance conditions noted by our analysis of fiscal years 1997 and 1998 and make the necessary corrections to the accounting records.

AGENCY RESPONSE:

As recommended by the Secretary of State, the Park's staff worked to create a new revenue form to address reconciliation concerns. A change with the new revenue form allows for the reconciliation of the cash sales and credit sales to the total revenue. The form was sent to the audit staff for their input. The pilot test has been completed and will be fully implemented in the field beginning in January 1999. Training on using the new form was provided in the recent training session. Using the new revenue report and its back up documentation will reduce daily input errors.

Our review of the existing out-of-balance conditions show they relate mostly to credit card issues. The credit card reconciliation process that we will design will allow us to identify and correct past errors and identify errors as they occur monthly.

Training has been given on how to read the files and take care of reconciling items by looking on the CD file.

We have been working with ODOT technical IS staff for identifying problems on the CD file for credit cards.

TEAMS RECONCILIATION FILE

The TEAMS reconciliation file, called the "CD" file,² is a temporary file that automatically reconciles deposit activity between TEAMS and Treasury. If the total for a deposit transaction as entered in TEAMS agrees to the total of the same transaction as recorded in the Treasury system, the document is "reconciled" (in balance) and will be automatically purged from the file after six months. The identifier for the transaction in both systems is the document number, such as a deposit slip number. All Parks suspense account deposits run through this file. Reports are generated monthly to reflect all the transactions that did not have a match between TEAMS and Treasury. These reports are used to identify the transactions for which corrections may be needed either on the Treasury system or on TEAMS to bring the two systems into balance on a document-by-document basis.

TEAMS is Not Designed to Handle Credit Card Receipts

The automatic reconciliation process between TEAMS and Treasury described above does not work for credit card transactions because it is not possible to assign a unique document number to each credit card deposit.

The actual deposits for credit cards are made electronically through the commercial banking system. Each park that takes credit cards is assigned a merchant number. This number is used to process the credit card sales through the banking systems. In Treasury's system and in TEAMS, since deposit slips are not used, the merchant numbers are used as the document numbers. These "document numbers" are used over and over — every time credit card transactions are processed. Thus, each credit card transaction at a given park will be labeled with that park's merchant number.

The totals for these "document" numbers (i.e. the merchant numbers) continue to change in TEAMS as new deposits are added. Since the totals between TEAMS and Treasury never stop changing long enough to agree, the transactions never clear from TEAMS. As a result, all of Parks' credit card

² "CD" stands for check deposit.

transactions since the agency first started taking credit cards in 1993 are still reflected in the TEAMS CD file. As of the middle of April 1998, the Parks portion of the file contained nearly 100,000 records with 1997 dates and earlier. The vast majority of these records are for credit card activity.

This problem has significant negative impacts on both Parks and ODOT. The file will grow with all future credit card deposits. This affects the processing time of the system, which impacts not only Parks, but ODOT as well. Besides tying up valuable on-line resources, each credit card batch requires an override in TEAMS because the document number already exists. The system alerts the user that the document number has already been used in a previous transaction. Therefore, in order to use the document number again, the user must override this warning by telling the system to accept it anyway. This is an extra step that wastes time and could potentially condition staff to ignore system warnings in general.

The sheer volume of Parks credit card activity and limited accounting staff prevents the department from performing an effective reconciliation process. Parks has approximately 47 locations processing credit card deposits. Without being able to reconcile the activity, the department does not know if revenue is accurately stated.

Furthermore, the problem has a potentially broader impact. Within ODOT, currently only the Motor Carrier Transportation Branch takes credit cards. Since this branch only takes credit cards at eight locations, its volume of transactions is manageable. However, the ODOT accountant responsible for reconciling branch deposits must perform manual reconciliations of its credit card deposits. If a higher-volume branch such as Driver and Motor Vehicle Services (DMV) also starts taking credit cards, the system would quickly get overburdened with unreconciled transactions.

Recently, Parks compared the credit card deposit balance in TEAMS as of June 30, 1997, for each park, to what was reflected in the Treasury system as of the same date. Under the assumption that Treasury transactions were more accurate, adjustments were made to each park to increase or decrease each park's balances on TEAMS to agree to Treasury.

Because timing differences between TEAMS and Treasury transactions were not taken into account, some balances may have been erroneously adjusted. The adjustments may also have inadvertently concealed errors and irregularities that would have been identified in a transaction-based reconciliation process.

The concerns over reconciling credit card receipts, and other accounting issues, have prompted management to add two new accounting positions. One of the positions will be reconciling credit card transactions.

We commend the department for its prompt attention to this issue.

We recommend the department do the following:

- Review credit card transactions to determine more reliable balances for each location. Make adjustments as necessary to correct erroneous balances.
- Begin reconciling credit cards deposits on a periodic basis.
- Determine how to account for credit card transactions to eliminate the compilation of errors. This may require evaluating whether TEAMS can actually meet the department's accounting needs.

AGENCY RESPONSE:

The new Accountant 3 is in the process of gathering information for items that need review to obtain more accurate balances for credit card transactions. The approach will include researching duplicate entries, mismatched items, and comparing monthly credit card bank statements to the CD file. We have trained the field personnel to go online and verify that revenue is reconciled.

This reconciliation is a top priority for the new Accountant 3. A new reporting system for TEAMS was implemented (GENEVA) and the CD file had some adjustments which had to be made before the reconciling could begin.

The new Accountant 3 will be receiving training in early December on Microsoft Access (database) so it can be used as a reconciliation tool.

The new Accountant 3 has obtained a list of agencies using credit cards from the SFMS Analyst to contact as a help resource to determine the best approach for reconciling credit card deposits.

OPRD will be pursuing discussions with ODOT on an on-going basis concerning the need for TEAMS changes. ODOT technical staff are addressing issues as time and available resources permit but Y2K, GENEVA report writer, and SFMS are top priorities for their programmers to take TEAMS into the year 2000.

Parks, along with the State Controllers Division, is in the beginning stages of discussing and working on an RFP for the purchase of a simplified accounting system to interface with SFMS and payroll sometime during 1999. The purpose of the new system is to find a more efficient and easier way to handle financial transactions by non-accountants in the field.

The new Accountant 3 reconciliations will be a resource to determine recurring errors that can be reduced or eliminated through additional training or reevaluating our processes and implementing procedures to find and correct errors. Park's goal will be to get the reconciliations on a monthly cycle.

Screen Edits

The system has insufficient screen edits to prevent invalid deposit document numbers from being entered. While reviewing Parks data downloaded from TEAMS, we found a wide variety of document numbers being used. Examples include a mix of numeric and alpha characters, all alpha characters, special characters such as a quotation mark or blank spaces, and varying field lengths.

Transaction data entered for processing should be subject to a variety of controls to check for accuracy, completeness and validity. Mechanisms should be in place to ensure that input data is validated and edited as close to the point of origination as possible. Screen edits are a traditional global system approach to providing such control.

Incorrectly input document numbers require additional staff time to investigate and correct. This reduces staff productivity overall which is costly to the agency.

As a short-term solution, management has indicated that the parks' data entry processes will be reviewed to determine the common errors being made, and this information will be used as a basis for additional field training. Those parks with the most problems will receive specialized one-on-one training.

We commend the department for a timely response to this issue.

We recommend Parks discuss with ODOT the feasibility of adding screen edits to the document number field to facilitate entering only agreed-upon characters and length.

AGENCY RESPONSE:

OPRD agrees that TEAMS edits are inadequate to prevent document number errors. OPRD management will discuss the feasibility of adding document edits to revenue entry screens with ODOT programmers. ODOT technical staff are addressing issues as time permits but are focusing on Y2K, a new report writer, and SFMS priorities to take TEAMS into the year 2000.

**CASH CONTROLS AT
RESERVATIONS
NORTHWEST**

Parks' reservation center in Portland needs to improve controls over its cash receipting and recording processes. Reservations may be paid either with credit cards or checks and other negotiable items, such as money orders. Because the center does not take any walk-in business, much of its business is conducted by mail. Management has stated that during the peak reservation season the center may receive as many as 200-225 checks a day.

While reviewing the center's daily cash receipting and revenue accounting processes we noted the following problems:

- The mail receipts logs were not being completed with all the necessary information to tie each check received to the deposit in which it was eventually included. The audit trail for an individual transaction is not complete without such information.
- Checks received did not always note the applicable reservation number and this was not added as part of the receipting process. This made it difficult (and sometimes impossible) after the fact to match up checks received with payments in the reservation system.
- The center is not always able to reconcile a day's deposit amount to that day's system reports. Differences between the two occur often and have been quite large at times. The differences are posted to a separate account to balance the day's entry. The transactions that caused the

differences are not identified in all instances. From July 1996 through April 1998, the net amount accumulated in the “balancing account” was approximately \$10,600. If amounts posted to the balancing account were related only to timing issues, no balance would accumulate. The presence of a net balance likely indicates uncorrected errors in transaction recording over time.

Controls and safeguards over cash must be adequate to provide management with a reasonable degree of assurance that cash and cash related transactions are properly accounted for and controlled. Without such controls, errors and irregularities can be inadvertently or intentionally concealed. The accounting records may not be an accurate reflection of the department's true revenue position at any point in time.

In response to this issue, management has recently redesigned the check receipting process at the reservation center. Procedures have been updated and are now in the process of being tested and refined.

We commend management for responding quickly to the problems noted above and our suggestions for improvement. These changes should address most of the problems noted.

We recommend management review the accounting entries used to record each day's business. This may result in the need to post additional accounting entries to appropriately record all transactions in accordance with generally accepted accounting principles.

AGENCY RESPONSE:

As mentioned in the text of the audit, management has responded to the suggestions made by the auditors concerning cash handling procedures. The following procedure changes have been made, and others are currently being reviewed.

- *Upon completion of daily posting to reservations, a copy of each check log is attached to a daily operator reconciliation report indicating the date it was posted and deposited.*
- *Check logs have been redesigned and require all fields to be filled in. A detailed list of instructions along with a reconciliation area has been incorporated. When check or money orders are posted to the reservation system, the control numbers for items are being recorded in the payment screen of the reservation system.*

- *The differences between the daily deposits and the daily revenue reports have been due to the system recording transactions incorrectly. A number of these transactions were identified and reported to the software vendor (Info 2000). With the addition of more accounting staff, a more thorough reconciliation process is being completed to identify any remaining discrepancies.*
- *All daily revenue reports are reviewed, verified and a signature is affixed by the fiscal manager upon completion of data entry into the accounting system (TEAMS).*

The implementation of these procedural changes has provided a greater assurance that cash is being received and recorded properly. In addition, the addition of accounting staff will be beneficial in identifying discrepancies and insuring proper recording of those differences according to generally accepted accounting principles.

CHAPTER II:

LIMITED REVIEW OF SELECTED SYSTEMS CONTROLS AT RESERVATIONS NORTHWEST

The reservation center uses a software package developed by a vendor specializing in park reservation system software. Though the system has been customized to a certain extent for Oregon, the basic package has been implemented by at least nine other states. Oregon's application consists of a central reservation system, a field application, and a reporting module. The software vendor maintains the reservation system software. The reservation center is prohibited by contract from making any changes to the programming for the applications.

SECURITY POLICY

Management needs to develop a formal, written information systems security policy. A policy on the various aspects of system security including organizational system security goals, criteria for determining level of access for staff, password controls, and employee awareness and responsibility would provide guidance as well as define responsibilities. The state's Department of Administrative Services Information Resources Management Division has developed state guidelines for creating a comprehensive information systems security policy that should provide a model for management's use.

We recommend management develop a comprehensive information systems security policy, and provide training on the policy to all employees.

AGENCY RESPONSE:

During the audit process, documentation of security procedures was started. Many of the recommendations made by the auditors were enacted immediately. New security policies require the use of an individual log on for all persons accessing the system, including vendors. Administrative logon passwords are changed monthly, and after a vendor has completed any work that required them having an administrative password. Password changes for all users are system driven, and must be done every 30 days.

Management agrees that a written security policy will make training users and communicating policies more effective. It will provide a written record of security policies that are already in place. In January 1999, a new Information Resources manager position will be filled. That position will draft agency wide policies, and can

help Reservations Northwest formalize a written security policy that will be consistent with other security in the agency.

DISASTER RECOVERY

The reservation center needs to develop a plan to recover operations in the event of a disaster. Disaster recovery and business continuity planning normally covers various kinds of disasters, emergency procedures, detailed plans to resume normal operations, re-establishment of hardware, software, and telecommunications/network services. Without a plan, the reservations center would experience significant delays in recovering from damage or destruction of its computerized systems and may not be able to recover in a reasonable amount of time to resume operations.

Management has recently taken steps to start the process of developing a comprehensive disaster recovery plan. They have drafted procedures covering communications issues: loss of the external power source, failure of the reservation system, and a building evacuation. The comprehensive plan is expected to be completed by the end of October 1998.

We recommend RNW continue to develop the plan, document it, and test it as soon as is feasible to ensure recovery in a timely manner from business interruptions.

AGENCY RESPONSE:

Several efforts are currently underway that will result in the production of a disaster recovery plan. The plan was started during the audit process, but the manager who was working on the plan has left to accept a position in another agency. When the new Information Resources manager comes on board in January, work on the plan will be completed. There is also planning being done by the year 2000 project team as they prepare a business continuation plan. Components of that plan will become part of the disaster recovery plan. These efforts should culminate by the summer of 1999. Testing will most likely be done after the busy season is over to minimize any potential disruption of service.

TESTING PROGRAM CHANGES

The reservation center should set up a separate computer or test region on its production computer to test programming changes and upgrades before installing them in a live production setting. This is necessary to ensure that program changes and upgrades to the reservation system operate as intended. The reservation center has experienced downtime because enhancements and/or upgrades installed in the production setting were not compatible with the existing equipment and/or software. Had the changes been tested outside of the live environment, the downtime and related problems caused by the system being off-line could have been avoided because the problems likely would have been identified in testing.

The need for an on-site testing facility at the center becomes more critical in light of the fact that the vendor cannot test all changes made to each state's version of the program. Rather, the vendor must rely on the states to test the changes for specific compatibility with its own version of the system.

Industry standards recommend that packaged applications be subjected to adequate testing and quality control review before the changes are moved to the live environment to ensure that the software operates as expected.

As a result of our review, management has purchased a separate computer to receive, test, and provide control over all reservation system program changes and upgrades.

We commend the department for its proactive response to our recommendation.

We recommend management and technical staff develop and implement formal written testing policies and procedures related to program change.

AGENCY RESPONSE:

While written procedures have not been completed, the separate computer that has been set up to receive any software upgrades or fixes provides an extra level of control over

program change. In addition to the extra testing this computer allows, the stability of the program itself has increased and changes are not made as frequently as they were during the period of the audit. No changes have been made since August, and no major upgrades are planned in the near future.

DOCUMENTATION OF PROBLEM MANAGEMENT PROCESSES

Management needs to improve documentation of processes used to manage problems that occur with the system software and with access to the system and its resolution. During the audit, management was unable to provide sufficient documentation of the following:

- Follow up of system security violations and subsequent investigation and disposition. Systems logs recording authorized and unauthorized access attempts are deleted weekly. Management advised that follow up is performed on unusual log entries; however, no documentation is retained to substantiate that claim.
- Communications and follow up with the vendor on problems noted with the software programs. A number of reservation center staff independently contact the vendor about problems with the system, although the vendor has requested one contact point with one back up. Each person has developed his or her own documentation needs.

Documentation provides a record that processes are occurring as they should, that problems are adequately identified and resolved in a timely manner, and that people are meeting the responsibilities assigned to them in those processes. Documentation also provides avenues for recourse in the event of legal disagreements such as breach of contract or damage to the system as a result of intentional unauthorized access.

Management has advised that steps have been taken to improve problem resolution with the vendor by assigning one staff to review the documentation of systems problems before contact with the vendor. However,

management does not agree to limit vendor contact to one person and one backup.

We recommend management do the following:

- Develop a standardized problem management system so that all staff understand and conform to procedures and documentation requirements throughout the problem identification and resolution process.
- Develop a procedure for documenting, following up on, and resolving system security violations. Such a policy should consider access violations from inside the organization as well as outside, and include a periodic review by upper management and approval of actions taken.

AGENCY RESPONSE:

In October the software vendor held their annual users conference. A new procedure was agreed upon between the vendor and users at that conference. Tracking problems and cases will be done on an Intranet site developed by the vendor, and accessible to all states using the software. This will improve documentation since problems, fixes and the case status will be available on that site.

Currently, the DBA has weekly conference calls with the vendor to track cases. The use of e-mail has helped in recording when cases were turned in and what actions have been taken to resolve them. Staff have been assigned specific areas of responsibility for problem tracking, with overall coordination being done by the DBA.

System security procedures changed as the audit recommendations became known to management. Systems logs are no longer deleted. Logs are now kept of all authorized outside access, including the reason access has been granted. Routine checks are done at random intervals by the DBA and Systems Administrator which would uncover any unauthorized access. Upper management discusses security procedures and policies with staff and periodically reviews log sheets and access that has been granted for work to be performed.

ACCESS TO SYSTEMS

We have discussed with management concerns related to access to its computerized systems. These concerns include access to the operating system and data bases, access to applications, password security and encryption, monitoring current user log-on IDs, and the need for

external compensating controls because of controls not provided for in the system.

It is the responsibility of management to provide adequate security over computer access including restricting access to those who need it to perform their duties, and providing for adequate separation of duties. For example, we noted that the director of the reservation center has access to critical system functions and files. However, because his position in the organizational structure provides the ability to override controls, he should not have access to critical system functions and files. Also, he does not need this access to perform his assigned duties. Access should be granted on a "need to know" basis for best control. Access to critical system functions and files should be restricted to the systems administrator and one technical staff member.

Management has advised that procedures to control access and some other facets of system security were in place at the time of our review but were not in writing.

We recommend reservation center management does the following:

- Continue to develop, document and implement procedures to improve secured access to the computer and its applications including restricting access to appropriate personnel and providing for adequate segregation of duties.
- Identify critical functions performed by the system (e.g. payment posting) and analyze controls in place, either built in to the system or performed manually, to determine the adequacy of the controls to reduce risk to an acceptable level.
- Implement procedures where controls are inadequate, and provide training to staff.
- Consider approaching other states about sharing the costs of obtaining needed security enhancements for the system from the software vendor.

AGENCY RESPONSE:

Immediate changes were made as the audit findings were made known to management. Only two people now have the system password, the DBA and System Administrator. Passwords may be given to vendors as needed to allow them to complete work on the system, but the passwords are changed as soon as the work is completed. All people who use administrative passwords are required to log in with a personal account, and use the su function when they use the administrative password. This is a requirement that includes the DBA and System Administrator positions. Copies of the su logs reviewed by management to ensure the policy is being followed.

The DBA checks daily for any unauthorized data changes. Any unauthorized changes are analyzed to determine if a system control can be used prevent further occurrences or if a manual control such as monitoring needs to be enacted. Training is also provided for staff so they understand what the scope of their authority is, and what functions they can and cannot perform.

Currently, Texas and Oregon are getting quotes from the software vendor for enhancement of the system's ability to track and restrict access. The intent is to share the cost of this work with other states that use the software.

ACQUIRING SYSTEMS

Management purchased \$42,000 of software and training that has never been used. Upon receipt of the product, management discovered that it could not be installed due to lack of space on the production computer. The purchase was made to address various inadequacies of the reservation software in its first year of operation. Since the purchase, the vendor has modified the reservation software to improve operating efficiency, making the additional software unnecessary. Thus, all costs associated with the purchase, including the license renewal fee for 1998, appear to be wasted. Additionally, the purchase did not comply with state purchasing guidelines in effect at the time which required the use of a request for proposal (RFP) process for purchases over \$25,000.³

All computer equipment and software should be subjected to a thorough technical review and alternatives examined to ensure the needs of the organization are being met with the acquisition of such. Management has stated that it has

³ The threshold was raised to \$50,000 on January 6, 1997, and to \$75,000 on October 4, 1997. Thus, this purchase, if made presently, would not require an RFP process.

no current plan to use the software and will not renew the license for 1999.

We recommend management establish standards and develop procedures to ensure that the acquisition of information systems and components meet business and management objectives and strategy. Such procedures also should assure compliance with the state's purchasing regulations in effect at the time.

AGENCY RESPONSE:

Major acquisition is planned for during the biennial budget process. The agency's Information Resource Management Plan is provided to DAS for input and then in turn submit it for legislative review. One staff person is now responsible for preparing all purchase orders, and ensuring that state purchasing guidelines have been adhered to by staff when they purchase products. A policy is in place that requires all purchases over \$10,000 be reviewed and approved by the RNW director. While key staff no longer make major purchases, training has been provided to familiarize them with state purchasing guidelines.

**YEAR 2000
COMPLIANCE**

As part of the audit, we made inquiries of management and the vendor as to the ability of the department's reservation system hardware and software, including operating system, to process transactions in year 2000 without date-related complications. At the auditors' request, the vendor provided a statement of Year 2000 compliance for its product; however, the department had not yet obtained such certifications for the hardware or operating system.

Department of Administrative Services (DAS) has issued Year 2000 (Y2K) compliance and reporting standards for state agencies.⁴ The policy requires that agencies evaluate and test their existing systems and issue a certificate of Year 2000 Compliance to the director of DAS at the point at which the agency has met compliance. DAS recommends this be completed by June 30, 1999.

⁴ DAS IRMD policy 03-20, November 1996.

We were advised by Parks management that a plan is in place at Parks to meet its compliance responsibilities. We did not audit or otherwise review the plan. Parks has not yet been certified as Y2K compliant.

We recommend management make every effort to complete its Y2K plan and testing by June 30, 1999, as recommended by DAS policy.

AGENCY RESPONSE:

The agency has an active Y2K Project Team comprised of 14 members who represent each area of the field and the central office section, two full time Project Coordinators, and a Project Manager.

During 1998, the Y2K Project Team has completed inventories of non-PC equipment (to analyze embedded chip issues), reviewed and refined inventories for computer hardware and water and waste treatment systems, and developed a comprehensive list of electronic interfaces important to on-going business operations. Led by the Project Coordinator, this team is currently developing the agency's Business Continuation Plan. Research on vendor compliance is being conducted by the other Project Coordinator.

Based on advice from the Department of Administrative Services, the agency had delayed making any statements regarding Year 2000 compliance efforts. We have received revised guidelines from the Attorney General's Office and the DAS Y2K Project Team regarding communication with vendors, and we will be following those guidelines as we request information and respond to requests for information.

REPORT DISTRIBUTION

This report is a public record and is intended for the management of the Parks and Recreation Department, the governor of the state of Oregon, the Oregon Legislative Assembly, and all other interested parties.

COMMENDATION

The courtesies and cooperation extended by officials and employees of the Parks and Recreation Department during the course of this review were commendable and sincerely appreciated.

AUDIT TEAM

Sharron E. Walker, CPA, CFE
Ann Waterman, CPA
Nancy Winston, CPA
Alan Hirata
Mark Wilborn, CPA
David Dunne
Beth Taylor, CIA

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DIRECTORY OF KEY OFFICIALS

Director

Deputy Director

Deputy Director

John N. Lattimer

Catherine E. Pollino, CGFM

Sharron E. Walker, CPA, CFE



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Public Service Building
Salem, Oregon 97310

503-986-2255

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Hotline: 800-336-8218
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