TEXAS DEPARTMENT OF HOUSING AND COMMUNITY AFFAIRS
An Internal Audit of the Continuity of Operations Program
Audit Report # 20-002

Executive Summary

The TDHCA COOP document, although it contains the elements required by the Texas Administrative Code, should be expanded and enhanced to more fully facilitate continuity of the agency's essential functions in the event of a disruption. The COOP document relies on the assumption that critical systems will be recovered within three business days; this recovery time has not been fully validated. Because of this assumption, there is a lack of alternative detailed business processes documented within the COOP. While the current COOP document provides for an alternate processing site with information systems requirements and necessary supplies, the COOP strategies available to TDHCA have expanded based on the Agency response to the COVID-19 Pandemic (such as remote telework for most employees), so management should revisit those plans. Disaster Recovery Exercises have been completed annually by the Information Systems Division as required by statute; however, the overall COOP has not been tested within the last two years nor have TDHCA personnel been consistently trained. With additional test objectives defined and involvement from the Program (business operations) areas, the COOP and Disaster Recovery strategy and resulting documentation could be more thoroughly validated in future exercises and additional problems or issues identified and solved in advance of a disaster event.

The OIA has identified the following recommendations to reassess and document revised COOP strategies based on lessons learned from the COVID-19 Pandemic Response and realistic Recovery Time Objectives for critical systems resumption.

Observations and Recommendations

1. OIA recommends that management take steps to update the COOP document as soon as reasonably possible, ensuring all essential programs and processes are included with the inclusion of realistic recovery time objectives.
2. Management should establish procedures to ensure that, going forward, the COOP is updated and tested annually, with COOP employee training conducted at hire and annually. An updated copy of COOP should be accessible via intranet and hard copy offsite.
3. OIA recommends that management considers selecting a team of individuals to advise and assist in completing and maintaining the COOP document. All Divisions, including the MHD, should be a part of this team to provide necessary input.
4. Management should review additional scenarios for COOP that assume loss of key personnel and/or critical systems for a timeframe longer than three business days, to determine any manual workarounds or additional resources required to respond to the disaster and continue processing business.
5. Management should reassess the designation of space in the building where MHD resides as an alternative site; if continued, the agreement between TDHCA and MHD should be reviewed annually along with COOP.
6. OIA recommends that the TDHCA Succession of Authority is reviewed annually for any updates required.
7. OIA recommends that the current Disaster Recovery Plan included in the Information Systems Division SOP 1264.04 be updated in tandem with COOP completion and guidance, including critical systems priority and attainable recovery times.
8. OIA recommends that ISD perform a review and validation of the files to be backed up by DIR at the time of any new server implementation and annually for all critical server files.
9. OIA recommends that management consider expanding testing the Disaster Recovery Plan in light of COOP requirements for recovery times and involving the Program areas to incorporate business-related COOP functions.

Management Response

Management agreed with our recommendations. Detailed responses are included in the body of the report.

Objective, Scope and Methodology

Our scope included reviewing TDHCA's COOP function, as well as the draft of the COOP. In reviewing the COOP, we evaluated complete and incomplete tasks, including whether:

- The plan meets the requirements of Texas statutes and rules;
- The plan is sufficient to ensure recovery of operations in the event of a disaster;
- The plan has been put into operation;
- The document has been distributed throughout the agency;
- The document has been stored offsite as required;
- The document has been tested;
- Employees have been trained on the stated procedures;
- Appropriate exercises have been conducted; and
- A Disaster Recovery Plan (DRP) was included in the COOP and whether it has been tested.

Our methodology included research of the Texas Government Code §552.156. *Exception: Confidentiality of Continuity of Operations Plan*; §418. *Emergency Management*; Texas Labor Code §412.054. *Continuity of Operations Plan*; Texas Administrative Code § 616.022. *Designation of Emergency Interim Successor to State or Political Subdivision Officer*, as well as Federal Emergency Management Agency and Department of Public Safety guidelines.

Mark Scott
_____
Mark Scott, CPA, CIA, CISA, CFE, MBA
Director, OIA

1/29/2021
Date Signed

TEXAS DEPARTMENT OF HOUSING AND COMMUNITY AFFAIRS

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Greg Abbott
GOVERNOR

January 29, 2021

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Board Members of the Texas Department of Housing and Community Affairs ("TDHCA")

RE: INTERNAL AUDIT OF THE TDHCA CONTINUITY OF OPERATIONS PLAN ("COOP")

Dear Board Members:

This report presents the results of the Office of Internal Audit ("OIA") *"Review of the TDHCA Continuity of Operations Plan ("COOP")."* The review was identified in the Fiscal Year 2020 Annual Audit Plan. The review of COOP rated high on the risk assessment and was selected for audit due to its level of complexity as well as Texas Administrative Code requirements. Our work began in February 2020 and was deferred to later in the year primarily due to the urgency of the COVID-19 Pandemic response. The Agency demonstrated its flexibility by quickly implementing additional technology and enhanced business processes to address the challenges of allowing telework from home for all Agency employees. TDHCA successfully responded to the Pandemic by maintaining the Agency's mission during the event while making systems infrastructure changes that could affect future COOP strategies and updates. It should be noted, however, that the COVID-19 Pandemic did not immediately result in the loss of key resources such as personnel and information resources. As a result, the TDHCA management team did not need to utilize the current COOP document to assist in executing its response.

This report is divided into the following sections:

A.   Audit Results
B.   Background
C.   Noteworthy Accomplishments from COVID-19 Pandemic Response
D.   Scope and Methodology
E.   Status of TDHCA's COOP Document
F.   Information Resources/Disaster Recovery

A. Audit Results

The TDHCA COOP document, although it contains the elements required by the Texas Administrative Code, should be expanded and enhanced to more fully facilitate continuity of the agency's essential functions in the event of a disruption.   The COOP document relies on the assumption that critical systems will be recovered within three business days; this recovery time has not been fully validated. Because of this assumption, there is a lack of alternative detailed business processes documented within the COOP. While the current COOP document provides for an alternate processing site with information systems requirements and necessary supplies, the COOP strategies available to TDHCA have expanded based on the Agency response to the COVID-19 Pandemic (such as remote telework for most employees), so management should revisit those plans. Disaster Recovery Exercises have been completed annually by the Information Systems Division as required by statute; however, the overall COOP has not been tested within the last two years nor have TDHCA personnel been consistently trained. With additional test objectives defined and involvement from the Program (business operations) areas, the COOP and Disaster Recovery strategy and resulting documentation could be more thoroughly validated in future exercises and additional problems or issues identified and solved in advance of a disaster event.

B. Background

Continuity of operations planning is essential so that an entity will be able to continue critical functions across a wide range of potential emergencies and disruptions, from large-scale disasters to smaller-scale events such as power outages, any of which could affect all, or the most basic of services. Texas Labor Code §412.054, *Continuity of Operations*, as updated in 2015 to represent the singular Texas Code reference for all state agencies regarding COOP, directs that TDHCA works with the State Office of Risk Management (SORM) to:

> "… develop an agency-level continuity of operations plan that outlines procedures to keep the agency operational in case of disruptions to production, finance, administration, or other essential operations. The plan must include detailed information regarding resumption of essential services after a catastrophe … " (Described at page 6 of this report.)

Beyond the requirements of Texas Labor Code §412.054, guidance by SORM has been provided as of April 2020 within its "COOP Evaluation Report" dated April 21, 2020 for TDHCA. SORM states in the report that "each year your (TDHCA) development goals should include:

1. Ensuring the plan meets Federal Emergency Management Agency (FEMA) guidelines (as per Chapter 412, Texas Labor Code),
2. Modifying the plan to accommodate changes in your (the Agency's) mission or duty,
3. Building a stronger and more robust plan by systematically testing and evaluating where more detailed development could minimize uncertainties and avoid decision-making delays at the onset of an incident."

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C. Noteworthy Accomplishments from COVID-19 Pandemic Response

On March 13, 2020, the first two Travis County cases of COVID-19, a novel coronavirus for which there was no known therapy or cure, were reported in the news media. The Governor cancelled all non-essential travel. As a result, TDHCA Executive Management took immediate action to inform the staff of its plan to address the following:

- Establishing workplace safety protocols.
- Individual telecommuting policies for staff needing to work from home due to school closings, illness of a family member, or staff with an underlying condition that would be at increased risk.
- Implementing travel guidelines and procedures based on public health authority guidance.
- Identifying technology for staff needed to work remotely in the event of office closures.

Management provided guidelines for working at the office and procured additional cleaning and sanitizing supplies, scheduled additional cleanings in the building and began tracking personnel that were working onsite. Employees were kept apprised of the developing situation, and most employees started working from home within two weeks.

Management quickly pivoted to provide technological solutions to allow for telecommuting. First, all computer equipment, both TDHCA owned and employee personal computers, had to be reviewed to determine how to allocate existing equipment and what additional was needed. A solution that has historically been utilized for Information Systems Division (ISD) support purposes, was creatively implemented for universal login. Once that had been completed, ISD considered that the network connection between TDHCA and the Department of Information Resources (DIR) which also provides internet access, may not provide enough bandwidth to handle all the new connections and internet based services and that upgrade was completed.

Once personnel were working offsite, there was an urgent need for both conference call and video chat solutions both for internal work coordination and to host safe and secure Board meetings. ISD implemented many new applications and expanded the use of certain technologies to sustain productivity across TDHCA's information systems environment as a result of the Pandemic response including:

- LogMeIn– new Software as a Service ("SaaS") application that allowed TDHCA employees to access TDHCA information resources from his or her personal computing devices.
- Palo Alto Cortex – new software that provided security and malware software for agency owned computing devices.
- Microsoft Office 365 / Teams – new SaaS suite of applications that provided office processing and collaborative applications using a cloud based platform.
- DocuSign – new SaaS application that provided secure electronic document routing and signature.
- GoToWebinar/GoToMeeting – expanded the number and use of GoToWebinar accounts for such activities as agency board meetings. Purchased GoToMeeting accounts for all divisions in the agency.

The Pandemic came at a very busy time for the Agency, as Multifamily Finance was processing, scoring, and awarding competitive Housing Tax Credits. All Divisions had to quickly respond to major changes in their processes, especially as it related to incoming mail and checks; these are processed at a high volume on a manual basis. The lessons learned and tools that have been implemented will not only lay the foundation for the next disaster response, but also increase the effectiveness and efficiency of operations.

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D. Scope and Methodology

Our scope included reviewing TDHCA's COOP function, as well as a draft of the written COOP document. In reviewing the COOP, we evaluated complete and incomplete tasks, including whether:

- The plan meets the requirements of Texas statutes and rules;
- The plan is sufficient to ensure recovery of operations in the event of a disaster;
- The plan has been put into operation;
- The document has been distributed throughout the agency;
- The document has been stored offsite as required;
- The document has been tested;
- Employees have been trained on the stated procedures;
- Appropriate exercises have been conducted; and
- A Disaster Recovery Plan (DRP) was included in the COOP and whether it has been tested.

Our methodology included research of the Texas Government Code §552.156. *Exception: Confidentiality of Continuity of Operations Plan*; §418. *Emergency Management*; Texas Labor Code §412.054. *Continuity of Operations Plan*; Texas Administrative Code § 616.022. *Designation of Emergency Interim Successor to State or Political Subdivision Officer*, as well as Federal Emergency Management Agency and Department of Public Safety guidelines.

OIA reviewed the COOP document in detail, comparing the elements of the COOP strategy and documentation with the authoritative sources listed above. Each section was reviewed to determine if key attributes were in place, such as: identified essential business functions; critical systems priority; alternative manual processing in absence of critical systems availability; evidence of training, testing and exercise of the plan; and the inclusion of a Disaster Recovery plan.

We researched the location of all available COOP documents for accessibility, including the shared drive, Intranet, and any offsite storage. In addition, we reviewed the details of the current alternate location in the building that houses the Manufactured Housing Division (MHD) including required supplies and equipment, network and internet access, and agreements in place to secure the required space.

OIA reviewed the documented Succession of Authority that specifies who will lead the Agency required in the event of a disaster should the Executive Director become unavailable.

To determine if the Agency management and staff had knowledge of and could access the COOP as well as exercise it in the event of a disaster, OIA interviewed TDHCA's Risk Manager and the Director of Information Systems, along with key TDHCA management and staff. (See summary of survey questions and responses at Exhibit A.)

OIA reviewed the Disaster Recovery testing results from 2016 to the exercise completed in October 2020 to determine if the effort was coordinated with COOP and successfully brought up critical systems within the specified time to recovery (often called the Recovery Time Objective or RTO). OIA also observed the completion of the FY2020 Disaster Recovery exercise, received status updates from DIR Shared Technology Services (STS) and ISD, inquired about specific processes, and reviewed relevant documentation.

Finally, we examined the COOP Evaluation Report received from SORM dated April 21, 2020, to confirm the submission and review of the COOP submitted on March 31, 2020 as required. The SORM report provided

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feedback to TDHCA regarding the COOP document's structure and general information to include in the plan; however, SORM did not assess the document's alignment with the current TDHCA processing environment nor evaluate whether the COOP could be useful in the event of a disaster.

E. Status of TDHCA's COOP Document

TDHCA's most current COOP document, shared in the network drive, is the Continuity of Operations Plan for TDHCA, dated March 31, 2020. Based on our review of the document and interviews with the Risk Manager, the plan was submitted to SORM in its current form but has not been fully updated since 2018. The 2018 version resides on the Intranet and can be found by searching "COOP".

The COOP incorporates the TDHCA building health and safety plan that guides TDHCA's Additional Duty Safety Officers, who are responsible for any first emergency response procedures such as calling 911, assisting people out of the building, reporting injuries, and accounting for staff. This plan is well-known; during the COOP interviews with management and staff, OIA found that all employees knew where to congregate in the event the building was impacted by a disaster.

Management plans to update the COOP using the SORM recommended format which is currently in development at SORM. The existing COOP document includes, among other items, a description of TDHCA's essential functions, activation tasks, delegation of authority, instructions for relocation and reconstitution (process to return to fully functional status), a section on testing, training and exercises, and instructions for disaster recovery. (Please see the table of contents at Exhibit B.) The COOP document is designed to include certain items such as contact information, roles and responsibilities, and other elements that should be readily accessible in the event of an emergency, as well as specific continuity plans for each operational unit that performs essential functions.

OIA found that while certain functions and responsibilities are outlined in the existing COOP, it is not comprehensive and does not include functions such as Community Affairs or Compliance, which are subject to various external rules. The COOP does not include documentation of the processing details necessary to conduct business should key resources such as technology or personnel be lost for an extended period of time. Each essential business function should include as a minimum, updated Standard Operating Procedures for key processes and related system documentation so that less experienced personnel could perform necessary functions if required.

The business functions which TDHCA has identified as essential in the existing COOP document are (1) Manage contracts; (2) Conduct closings and service loans; and (3) Service Qualified Allocation Plan (QAP) awards. The COOP includes only those operations that provide TDHCA's defined essential functions. The plan states a recovery time objective (which defines when critical business systems must be available) of within three business days if the Department is the only Agency affected, and 21 days if the entire state system or multiple Agencies within the system are affected by the disaster event. They are further identified in the COOP as follows:

Manage contracts
- Service contracts for sub-recipients and developers
- Process reservations, setups and draws within the contract system
- Conduct payments to sub-recipients, developers, contractors

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Conduct closings and service loans for single family homes
- Conduct loan closings
- Fund loans
- Service loans
- Conduct budget transfers
- Provide letters of instruction

Service QAP awards (primarily federal tax credits)
- Manage awards and underwriting
- Act on applicant appeals

The program areas documented as impacted include HOME and Homelessness Programs, Single Family Loan Servicing, and Multifamily Finance. All essential functions depend entirely upon the recovery of the underlying systems and data for each critical business process. There are no manual workarounds defined within the COOP as they are not considered feasible within the current business environment, assuming the three business day RTO for critical systems defined by the COOP.

The COOP addresses the elements required by the Texas Labor Code, § 412.054, *Continuity of Operations*, as shown in the table below.

Rule	Text	Included in the COOP
§412.054(a)(1)	Coordination with public authorities	Assigned
§412.054(a)(2)	Management of media	Assigned
§412.054(a)(3)	Customer service delivery	Included in individual essential business functions, although no manual processes are defined
§412.054(a)(4)	Assessing immediate financial and operational needs	Funding has not been appropriated for emergencies; operational elements are included under (a)(3)
§412.054(a)(5)	Other services as determined by the office (SORM)	Management indicates SORM has not issued directives for other services
§412.054(b)	A continuity of operations plan that meets the requirements of this section must be submitted by each state agency that is:	Management submitted existing version 3/31/2020; reference SORM report dated 4/21/2020
§412.054(b)(1)	Involved in the delivery of emergency services as a member of the governor's Emergency Council;	TDHCA is a member of the State Emergency Management Council
§412.054(b)(2)	Part of the state data center program;	TDHCA is part of the State Data Center Program

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As noted previously, the COOP document has not been substantially updated since March 2018. According to the Institute of Internal Auditor's Global Technology Audit Guide: Business Continuity Management as well as best business practices, plans such as the COOP should be kept up to date and tested periodically. Most enterprises test their plans one or two times a year and update them at least annually with key contact names, telephone numbers, essential records, alternative site details, etc. TDHCA should ensure that the plan is updated at least annually, as indicated in the current draft of COOP.

Revision of the document has been assigned to TDHCA's Risk Officer. According to management, one of the reasons the COOP has not been updated is primarily due to continuous turnover in the positon, with the current coordinator having been in place six months before the COVID-19 Pandemic emerged. The existing COOP document describes a COOP Project Team of staff from all Divisions working with the Risk Officer as advisors and subject matter experts during planning, editing, and updating of COOP. TDHCA should consider utilizing this model to make informed decisions regarding recovery time objectives, critical system priority, and essential business functions and to facilitate timely updates.

When the COOP has been fully updated, TDHCA should ensure that it is approved and signed by the Executive Director and distributed to key personnel. A copy of the plan should be stored offsite and posted to the TDHCA internal website or other network resource. COOP testing, training and exercises should be planned for at least annually and coordinated with the Disaster Recovery exercise completed by the ISD annually.

While the COOP contains a wide-ranging study of various threat risks, it does not necessarily provide for scenarios that would elongate the critical systems recovery such as unavailability of key personnel. In addition, there are no provisions for any scenario that does not meet the business RTO for critical systems of three business days, so these possibilities should be further explored in forthcoming COOP updates. Divisions should make decisions about how to move forward with processing the business without full systems access, should that be required.

Along with the existing version of TDHCA's COOP, OIA found a similar COOP document for the Manufactured Housing Division (MHD) that has not been updated and coordinated with the TDHCA COOP. This collaboration is necessary since MHD shares services with TDHCA such as Information Systems, Financial Administration and Staff Services, all of which have components within both COOP plans. MHD should be involved with discussions of recovery time objectives and shared services to determine overall priorities for any overlapping tasks such as critical systems recovery.

OIA reviewed the Memorandum of Agreement between TDHCA and the MHD securing space at the MHD location, noting that it has not been reviewed since it was signed in 2018. Based on discussions with ISD management, setting up the necessary network infrastructure and services for internet access could be difficult and time consuming, while taking resources away from other recovery tasks. With the advent of teleworking and its relative success, management should assess whether the use of the MHD space as an alternative site is the best option or strategy available.

As an essential part of COOP and as directed in TAC § 616.022. *Designation of Emergency Interim Successor to State or Political Subdivision Officer*, an updated Succession of Authority for decision making in a crisis should the Executive Director be unavailable. The Succession of Authority Rule requires at least three individuals and no more than seven in the definition of successors. The most recent Succession of Authority that was approved by the Executive Director is dated January 2019. Management is in the process of updating this document for Executive Director and Board approval.

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Observations

Observation Number	Status Pertaining to the Recommendations and Action to be Taken	Target Completion Date	Responsible Party
20-002.01.a	OIA recommends that management take steps to update the COOP document as soon as reasonably possible, ensuring all essential programs and processes are included with the inclusion of realistic recovery time objectives.	8/31/2021	Office of Risk Management
20-002.01.b	Management should establish procedures to ensure that, going forward, the COOP is updated and tested annually, with COOP employee training conducted at hire and annually. An updated copy of COOP should be accessible via intranet and hard copy offsite.	8/31/2021	Office of Risk Management
20-002.01.c	OIA recommends that management considers selecting a team of individuals to advise and assist in completing and maintaining the COOP document. All Divisions, including the MHD, should be a part of this team to provide necessary input.	8/31/2021	Office of Risk Management
20-002.01.d	Management should review additional scenarios for COOP that assume loss of key personnel and/or critical systems for a timeframe longer than three business days, to determine any manual workarounds or additional resources required to respond to the disaster and continue processing business.	8/31/2021	Office of Risk Management
20-002.01.e	Management should reassess the designation of space in the building where MHD resides as an alternative site; if continued, the agreement between TDHCA and MHD should be reviewed annually along with COOP.	8/31/2021	Office of Risk Management
20-002.01.f	OIA recommends that the TDHCA Succession of Authority be reviewed annually for any updates required.	8/31/2021	Office of Risk Management

Management Responses

Management acknowledges all of the above observations. As previously noted, we experienced turnover in our Risk Manager position, as well as turnover to management staff, with purview over the COOP. We will consider selecting a team of individuals to advise and assist in completing and maintaining the COOP document. This team will encompass the entire Department, including the Manufactured Housing Division. Management will also update the succession of authority and arrange to have it reviewed/updated at the beginning of every fiscal year.

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E. Information Resources/Disaster Recovery

According to the ISD Standard Operating Procedure (SOP) 1264.04, the Disaster Recovery Plan (DRP) contains the critical information needed to prepare for and recover from disasters that result in the loss of systems, hardware, software, and agency data. This plan includes roles and responsibilities, policies and procedures, vendor contact information, and plan testing procedures. The plan describes how the ISD Disaster Recovery Center is planned to function and provides the detailed procedures for recovery operations and restoration of data from backup. OIA reviewed the DRP and noted its last update was in progress as of April 2019. It does not appear that the systems recovery priority and timeframe aligns with the COOP, and the DRP does not include all necessary information to complete the recovery requirements.

ISD contracts with the Texas Department of Information Resources (DIR) Shared Technology Services (STS) for BackUp as a Service ("BUaaS") and Disaster Recovery as a Service ("DRaaS") to execute disaster recovery services as well as an annual Disaster Recovery exercise (DRE). Review of prior year test plans along with the current FY2020 plan shows that ISD selects two or three servers to be restored. The servers are selected in rotational manner while also considering other factors such as if the server was recently added to the BUaaS/DRaaS services or has had a significant change. Tasks during the test will include a full restore of the services and functionality of the server. However this does mean that ISD may not restore the full functionality of an application because of the limited nature of the test. For example, the database may be restored but not the necessary application server and vice versa (having both would be required in order to transact business). The most recent DRE was completed in October 2020; there were two out of eleven DIR backed-up servers recovered. The plan entailed the recovery of the defined environment by DIR with additional tasks completed by ISD staff, who configures the environment to TDHCA's needs and restores the critical business systems.

The Disaster Recovery exercise was successful in going through the required tasks to restore the environment for the Oracle-based database for one of the most critical TDHCA processing systems (referred to as the Central Database) as well as a network file server for the MHD. TDHCA ISD went a step further in this test than in the past, by connecting the recovered Central Database server to a test environment server and ensuring that data, processes, and application functionality could be accessed by an ISD employee. This represents an additional benefit to the comprehensiveness of the test and continuing to develop and enhance the goals of the annual DRE.

While preparing for the DRE, the team went over all the files and directories on the two servers being tested to ensure all critical files were being backed up by DIR nightly as required. The team discovered key directories that were not being backed up, so ISD initiated a review of all eleven servers being backed up by DIR to ensure critical files are not missed. As a result of this review, ISD ensured critical files and directories were being backed up daily as required. The team also identified some files and directories that do not need to be backed up and provided that feedback to DIR for removal from the schedule.

Based on review of the DIR agreement and discussions with management, the commitment to TDHCA to have any environment restored is three business days if TDHCA is the only agency affected; and 21 days if multiple agencies are affected. However, based on existing test results, the time required by DIR for recovery of the environment in addition to the time required by ISD to restore applications and databases would exceed the currently stated RTO in the COOP of three business days.

OIA suggests that the exercise plans be enhanced to take steps toward a more robust restoration of the environment to better measure the timeframe for recovery. For example, the test could be improved by restoring connections among unrelated servers or to restore an application and database and test accordingly for full application functionality. These changes could identify both problems that may be encountered and resolved

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upfront as well as better measuring the timeframe for recovery. Once this timeframe is known, management will have more information to make decisions relative to funding and support for additional solutions. Using this type of exercise or other projections, management could better define a more realistic timeline for recovery and communicating to impacted areas that are depending on the availability of information resources.

Including Program (business operations) user involvement would allow for additional scenarios and functions to be tested during DRE. While it may require more resources, the efforts put forth will allow for better updates to the COOP document, detailed checklists as well as processes, and more thoughtful preparation as well as a higher level of awareness of what the Agency could face in the wake of a disaster that affected information resources and/or personnel.

Observations

Observation Number	Status Pertaining to the Recommendations and Action to be Taken	Target Completion Date	Responsible Party
20-004.02.a	OIA recommends that the current Disaster Recovery Plan included in the Information Systems Division SOP 1264.04 be updated in tandem with COOP completion and guidance, including critical systems priority and attainable recovery times.	4/30/2021	Director of Information Systems
20-004.02.b	OIA recommends that ISD perform a review and validation of the files to be backed up by DIR at the time of any new server implementation and annually for all critical server files.	4/30/2021	Director of Information Systems
20-004.02.c	OIA recommends that management consider expanding testing the Disaster Recovery Plan in light of COOP requirements for recovery times and involving the Program areas to incorporate business-related COOP functions.	TBD, October 2021	Director of Information Systems

Management Response
- 20-004.02.a – TDHCA ISD agrees with this recommendation and will complete the review of the ISD Disaster Recovery Plan by 4/30/2021
- 20-004.02.b – TDHCA ISD agrees with this recommendation and will complete this task as part of the update of the Disaster Recovery Plan identified in observation 20-004.02.a.
- 20-004.02.c – TDHCA ISD will evaluate the expansion of the annual disaster recovery exercise (DRE) to include the following: (1) full recovery of selected business critical applications, (2) involving Continuity of Operations (COOP) and programmatic staff in the testing and verification process, and (3) incorporating an annual COOP test into the DRE. TDHCA ISD will conduct a full review of DRE planning and procedures. As part of this review TDHCA ISD will perform a cost benefit analysis on expanding the scope of the test to include the three aforementioned items. At this time, TDHCA ISD believes a test of this nature could be disruptive to the projects and daily tasks performed by ISD. This could have a significant impact to the day to day business of the agency as well as to the overall status of significant information technology (IT) projects and other critical IT related deadlines. This type of test would also increase the costs associated with the DRE that would impact the annual cost of the BUaaS/DRaaS services delivered by DIR STS.

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Ultimately, all of these concerns and every other aspect, which might be impacted positively or negatively, of expanding the DRE will be explored during the cost benefit analysis.

As mentioned on page #9 "TDHCA ISD went a step further...", TDHCA ISD will continue to look at ways to evaluate and improve our disaster recovery testing procedures and goals. At the very least TDHCA ISD will continue to connect recovered servers to test environments to fully test applications and functionality of recovery environment. TDHCA ISD will either perform testing procedures to verify functionality or involve programmatic staff to test recovery environment.

TDHCA ISD will also incorporate any suggested activities from the cost benefit analysis into the next annual DRE. The agency's next DRE will be scheduled around October 2021.

OIA extends our sincere appreciation to the Director of the Information Systems, the Office of Risk Management and their respective teams as well as representatives from all Divisions for their cooperation and assistance during the course of this audit.

Sincerely,

Mark Scott

Mark Scott, CPA, CIA, CISA, CFE, MBA
Internal Audit Director

MS/SN

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1. Do you know where to go immediately to be accounted for after an incident occurs, if we were working in the TDHCA office under normal circumstances?

   Out of 16 surveyed, all employees knew where they would be expected to congregate if the building was impacted by a disaster.

2. How can you access an updated copy of the TDHCA COOP? Are you a member of the COOP Planning Team or the Emergency Relocation Group? Reconstitution Team?

   6 of the 16 (38%) employees said with varying degrees of confidence that they could find the COOP via the intranet, but none had seen a recent copy (updated within the last year). No employees were clear about what the referenced teams were and/or whether they were a member of them.

3. Do you have updated call lists (including internal employees, contractors, and external partners), essential files, and an updated COOP document where you can access it offsite? (your home, for example)

   10 of the 16 (63%) employees had call lists, however no employees had an offsite copy of the COOP.

4. Where is the alternative site referenced in the current TDHCA COOP?

   5 of the 16 (31%) employees were aware of the alternate site defined in the most current version of COOP, which is TTOC (where Manufactured Housing Division offices).

5. When was the last time you were contacted or trained regarding COOP? Have you ever participated in a COOP exercise?

   None of the employees have been contacted or trained within the last year. Only 3 had ever participated in a COOP exercise, and it had also been several years ago.

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