

**Colorado Transportation Commission
Audit Review Committee Agenda
Friday, July 24, 2015**

**Gary Reiff, Chair
District 3, Englewood**

**Bill Thiebaut
District 10, Pueblo**

**Sidny Zink
District 8, Durango**

All commissioners are invited to attend this Committee meeting.

1.	*	Call to Order	
2.	*	Approval of March 2015 Minutes	Audit Chair
3.		Election of Chair	Audit Chair
4.		Release of Audit Reports	Audit Chair
		a. WIMS System Implementation	
	*	b. CDOT Mobile Smart Phone Application	

THE AGENDA MAY BE ALTERED AT THE CHAIR'S DISCRETION

*Those items marked with an asterisk will be presented to the committee.

Confidential Audit Document – Not for Public Release
Colorado Transportation Commission
Audit Review Committee
MEETING MINUTES

March 18, 2015
4:00 p.m. – 4:30 p.m.
CDOT Headquarters Room 225

COMMISSIONERS PRESENT: Les Gruen, Sidney Zink, Bill Thiebaut, Ed Peterson.

ALSO PRESENT: Barbara Gold, Audit Director; Trent Josten, Audit Supervisor; Daniel Pia, IT Auditor; Melissa Canaday, Audit Supervisor; Lisa Gibson, Program Administrator

AND: Other Senior Management Team members, staff members, organization representatives, and the public.

1. Call to Order

Commissioner Gruen chaired the meeting in Chairman Reiff's absence. ARC Commissioner Gruen called the meeting to order on March 18, 2015, at 3:57 P.M. The meeting was held in Room 225 at the Headquarters of the Colorado Department of Transportation. Attendance was taken by the ARC Secretary. Commissioner Aden and Chairman Reiff were not present.

2. Approval of Minutes of the Last ARC Meeting

ARC Commissioner Gruen asked for approval of the meeting minutes for January 22, 2015. Approval of the minutes was moved by Commissioner Zink and seconded by Commissioner Thiebaut. The minutes were adopted as published in the agenda. Commissioner Zink noted that under Item #4 of the minutes, she is referred to as Chairman Zink. Correction will be made. The minutes were approved with no opposition.

3. Release of Audit Packet

Barbara Gold discussed with the Commissioners the proposed audits for public release. Commissioner Zink stated that the term "Release of Audit Report" rather than "Release of Audit Packet" should be used. This change will be made.

4. Revised Audit Charter

Ms. Gold explained that she, Herman Stockinger, Mary Frances Nevans, Kathy Young, Commissioner Zink and Commissioner Thiebaut have been working diligently to update the Charter. Ms. Gold briefly discussed those changes. Commissioner Zink requested that Ms. Gold distinguish between released and final reports. Ms. Gold requested Mary Frances Nevans to clarify the difference between released and final reports. Ms. Nevans advised that pursuant to our revised Audit Charter a report remains confidential until released by the Audit Review Committee. Once released by the Audit Review Committee, the Audit Director signs the report and it becomes final and available for public distribution. The various options were discussed such as, move to release without questions, move to release but then discuss, release on a limited basis or move not to release.

Commissioner Zink commended Ms. Gold for her efforts in protecting her independence and authority. Commissioner Zink stated that objectivity is critical to ensure that reports are not withheld from public disclosure because the Commissioners or other parties do not like its contents.

5. Status of Office of the State Auditor (OSA) Audits

Barbara Gold reviewed the status of the OSA Audits. Ms. Gold provided the committee with an informational update on the OSA audits, including the progress of the audits and their estimated completion time.

6. Fuel Report

Commissioner Thiebaut made a motion to release the CDOT Fuel Card Exception report. Commissioner Zink seconded. The item was opened for discussion. All voted to release the report and it passed with no opposition. Trent Josten gave a high level overview of the report, explaining that it focused on exception reporting related to the fuel cards. Recommendations were presented and are being implemented and followed-up on by Audit Division. Trent said that Kyle Lester has developed an exception tracking system that will be used by management to monitor exceptions from identification through resolution. Kyle provided a presentation of this tracking system and the four phase control program. Phase 1 is reconciliation. Phase 2 is exception reporting and tracking. Phase 3 is the AVL (Automatic Vehicle Locator). Weekly exception reports are generated and need to be cleared within seven days. Commissioner Gruen asked if any new issues had been identified. Kyle said none yet, however, it's still premature. Kyle also will be working closely with the consultant regarding reports utilizing the AVL data. Phase 4 consists of automated controls for the Bulk Fuel tanks. Currently, there are 64 locations that have only tank measurements as controls. Commissioner Gruen said that CDOT has had a lot of data for a long time and it needs to determine if the new processes are working. He asked that the Audit Division and the Division of Highway Maintenance report back in three months to brief on the progress of the new system and the new processes.

Meeting was adjourned at 4:40 p.m.



COLORADO

Department of Transportation

Division of Audit

4201 E. Arkansas Ave, Shumate Bldg.
Denver, CO 80222-3400

DATE: July 27, 2015

MEMORANDUM FOR: David Ulane,
Director
Aeronautics Division

SUBJECT: **Released Audit Report**
Review of the Web-based Information
Management System (WIMS)

The attached audit report presents the results of our review of WIMS (Project number 15-013) reviewed and released by CDOT Audit Review Committee on July 24, 2015. This audit adds value by assisting management with reducing information system risk.

We conducted this audit pursuant to Section 43-1-106, C.R.S., which authorizes us to conduct internal audits on CDOT. This report presents our findings, conclusions, recommendations and the responses of CDOT Management. Our audit was completed at the request of CDOT Management.

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact me at (303) 757-9687.

Barbara Gold, CPA CISA
Audit Division Director

Attachment

cc: Shailen Bhatt, CDOT Executive Director
Amy Ford, Director Communications
Kathy Young, Senior Assistant Attorney General

PERFORMANCE AUDIT REPORT



CO L O R A D O

Department of Transportation

Division of Audit

Web-Based Information Management System (WIMS)

The Audit Review Committee has released this report for public review.

Released Report

Report Date: May 8, 2015

Audit No: 15-013

EXECUTIVE SUMMARY

Purpose of Review and Objectives:

The purpose of this review was to assess the Web-Based Information Management System (WIMS) at the Division of Aeronautics. This audit was made at the request of the Aeronautics Division Director. Our objective was to assess the implementation of WIMS and the quality of the discretionary grants drawdowns.

Background:

The Division of Aeronautics began developing the WIMS in 2012 with the aim of providing better customer service while reducing staff time needed to administer grants. The intent of this system is to provide the Division of Aeronautics with a database to keep complete records on capital improvement planning, fuel tax collection and distribution, grant applications, administration, and project close out.

Conclusion:

Overall, WIMS was properly implemented. Generally, discretionary grant drawdown information contained in the system was valid and complete. However, we identified opportunities that would improve future implementation phases of WIMS, as well as the quality of the discretionary grant drawdown information. Specifically, we found:

- Implementation documentation was incomplete.
- User access accounts were not properly established.
- Supporting documentation was not standardized for payments (drawdowns) within the drawdown module of WIMS.
- Copies of the final signed contracts were not always uploaded into the system.
- Surplus sales were not always approved within the system.
- Fields and standard reports were not fully identified and utilized.

These conditions occurred because management was not completely knowledgeable of policies and procedures relating to both software implementation and information requirements. Consequently, functionality of WIMS was reduced and the WIMS system contained inaccurate information regarding discretionary grant drawdowns. We recommend that the Director of the Aeronautics Division ensure: 1) documentation of WIMS is completed by both the Division and the developer 2) administrative rights access is restricted and that the generic user information is properly updated 3) written policies and procedures for grant reimbursement are developed that would include a summary, as well as supporting documentation for the payment 4) signed copies of contracts are uploaded into WIMS 5) supporting documentation is contained in WIMS for surplus sales and 6) fields and standard reports are identified and utilized.

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Introduction

The Division of Aeronautics (Division) and Aeronautical Board (Board) are responsible for: (1) promoting safe and accessible general and intrastate commercial aviation in Colorado and (2) ensuring that the State has an aviation system that can support the needs of its residents, visitors, and businesses [Section 43-10-101, C.R.S.]. The Division's key duties include disbursing aviation fuel tax reimbursements, overseeing grants to airports, conducting airport pavement and safety inspections, and providing planning and technical advice to airports. The Board statutorily oversees Division operations. The Board and Division do not regulate the State's airports or oversee the airline industry. Rather, the Federal Aviation Administration (FAA) is charged with these responsibilities. See [Appendix B](#) for additional information about this audit.

The Division does not receive any state general funds. All of its revenues (100 percent) derive from aviation fuel taxes which are deposited in the State Aviation Fund. Fuel taxes are collected on all aviation fuel. Currently, the Division consists of eight employees, including three planners, who support a system of 74 public-use airports in Colorado.

The Division contracted with an outside vendor for the development of a Web-based Information Management System (WIMS) in 2011. The WIMS is intended to increase Division efficiency by reducing staff time needed to administer grants and to improve its effectiveness through better customer service. When complete, WIMS will have three phases. Phase I, capital budget planning, airport revenue and expenditure tracking, has been completed; and the Division began using it in 2012. Phases II, revenue reconciliation and Phase III, SAP/WIMS integration, are expected to be completed in the near future. While all three phases have different functional purposes, they all require similar development and implementation processes.

The Division of Aeronautics began developing the WIMS in 2012, with the aim of providing better customer service while reducing staff time needed to administer grants. The intent of this system is to provide the Division of Aeronautics with a database to keep complete records on Capital Improvement Planning (CIP), fuel tax collection and distribution, grant applications, administration, and project close out.

Conclusion:

Overall, WIMS was properly implemented. Generally, discretionary grant drawdown information contained in the system was valid and complete. However, we identified opportunities that would improve future implementation phases of WIMS, as well as opportunities to improve the quality of the discretionary grant drawdown information. Specifically, we found:

- Implementation documentation was incomplete.
- User access accounts were not properly established.
- Supporting documentation was not standardized for payments (drawdowns) within the drawdown module of WIMS.

- Copies of the final signed contracts were not always uploaded to the WIMS system.
- Surplus sales were not always approved within the system.
- Fields and standard reports were not fully identified and utilized.

These conditions occurred because management was not completely knowledgeable of policies and procedures relating to both software implementation and information requirements. Consequently, functionality of WIMS was reduced and the WIMS system contained inaccurate information regarding discretionary grant drawdowns. We recommend that the Director of the Aeronautics Division ensure: 1) documentation of WIMS is completed by both the Division and the developer 2) administrative rights access is restricted and that the generic user information is properly updated 3) written policies and procedures for grant reimbursement are developed that would include a summary, as well as supporting documentation for the payment 4) signed copies of contracts are uploaded into WIMS 5) supporting documentation is contained in WIMS for surplus sales and 6) field and standard reports are identified and utilized.

Audit Results

WIMS Implementation (Phase I)

Generally, the Phase I implementation of WIMS was properly conducted. However, we did identify opportunities for improvement with regard to documenting the implementation process. Specifically, we reviewed eight implementation areas and found five of the eight were not fully implemented by the Aeronautics Division. In addition, two of the seven implementation areas that required documentation by the developer were not completed. [Table 1](#) shows the eight implementation areas along with the completion status of the documentation required by the Aeronautics Division. [Table 2](#) shows the seven implementation areas along with the completion status of the documentation required by the developer.

Documentation of the implementation process is one of the requirements provided by the Information System Audit and Control Association (ISACA)¹ guidelines. These guidelines require that each stage of the development and implementation process be documented. These guidelines also require the developer and the user identify specific user requirements of the system and that these requirements be documented and agreed-upon. Documenting the agreed-upon user requirements provides assurance that all requirements have been identified and provides accountability for the developer's implementation of them.

¹ The Information System Audit and Control Association (ISACA) have adopted information system standards, guidelines and procedures for auditing and control professional (Sections G21 Enterprise Resource Planning – System Review and section G29 Post-Implementation Review).

**Table 1
Status of Documentation by the Aeronautics Division
As of 11/18/2014**

#	Implementation Areas	Fully Documented	Division's Approval Documented
1	Major Project Deliverables	No	No
2	Completion Dates	No	No
3	Needs / Feasibility Study	Yes	No
4	Data Conversion	No	No
5	Testing	No	No
6	Security	Yes	N/A
7	Go-Live Decision	No	No
8	Training	Yes	N/A

Source Data: CDOT Audit - Analysis of WIMS Data

**Table 2
Status of Documentation by the Developer
As of 11/18/2014**

#	Implementation Area	Implementation Area Description	Phase was Complete	Phase Properly Documented
1	Clean Up	Clean up outstanding items	Yes	Yes
2	Portal Clean Up and Tax Definition	Evaluate portal requirements and determine tax functionality.	Yes	Yes
3	Portal Page Completion	Portal page review, configuration to reconcile with business needs.	Yes	Yes
4	Supplemental Grant & Sponsors	Completions of tax integrations	Yes	Partially
5	Tax Integration Definition	Completions of tax integrations	Yes	Yes
6	Training Development & Delivery	Develop and conduct training	Yes	Yes
7	User Acceptance Test Stabilization	Complete the user acceptance stabilization	Yes	No

Source Data: CDOT Audit - Analysis of WIMS Data

By not properly documenting the approval of various phases or areas of the WIMS' implementation, management increases the risk that the WIMS system will not be efficiently and effectively implemented, and that the system will not meet the needs of the division in managing grant information. Specifically,

- Managing the contract for the WIMS' implementation to ensure the vendor complies with all aspects of the agreements (on time, on budget, functionally etc.).
- Ensuring that the developer understood the system requirements established by management in order to avoid implementation delays and or issues with the functionality.
- Ensuring that conversion of the data from the manual system (spreadsheets, hard copies, etc.) to the WIMS system and the results of the conversion were successfully performed.
- Ensuring that testing results of the WIMS Phase I implementation were satisfactory according to the initial requirements provided by management.
- Ensuring management actively participated in all the phases by reviewing and authorizing vendor's documentation after completing each phase of the project.
- Ensuring management authorized and documented the Go-Live decision (final step prior installing the system). This is essential to ensure that the final version of the implemented software is authorized by the management.

User Access

Overall, the user roles, log, and password requirements set up by the Division for its WIMS application² were in compliance with the Colorado Information Security Policies. However, we found that user access was not properly established. Specifically, assignment of administration rights was not properly established and managed. For example, the Division is composed of eight full time employees all who had system administrator's roles. The system administrator account provides unrestricted access to the assigned individual. Assigning system administrator access to all of the users in any system increases the risk for users to modify/override system configuration, as well as bypass controls within the system.

In addition, we found the use of a generic user established by the developer also had system administration rights. Access to systems is managed by giving users specific privileges related to their role and by assigning users with a unique user name and password. Generic users do not have a unique user name. For example, *user name: developer team*, as opposed to *user name: john smith*. Assigning user names that are not unique and/or generic increases the risk of improperly managing the users and/or tracking their activities.

² We obtained a list of all the active and inactive users as of August 20, 2014. We identified 182 users, of which 130 were active users and 152 were inactive users.

Colorado State policy CISP-8 requires that user accounts be properly established and safeguarded. See [Appendix C](#) for details on Policy CISP-8 related to user access.

By not properly establishing users' access, there is an increased risk of unauthorized access to the WIMS system.

Drawdowns (Discretionary Payments)

Generally, information contained in the drawdown module of WIMS relating to discretionary grant drawdowns³ (payments) was complete, valid, properly approved and supported by documentation including written contracts. Furthermore, drawdown information⁴ was properly reflected in SAP. However, opportunities to improve the quality of this information exist. Specifically,

- Supporting documentation was not standardized for payments (drawdowns) within the drawdown module of WIMS.
- Copies of the final signed contracts were not always uploaded to the WIMS system.
- Surplus sales⁵ were not always approved within the system.

Lack of Standardized Supporting Documentation:

Drawdown information contained in WIMS was not standardized. Without standard documentation, the Division is at risk of duplicate payments, payments for unsupported or inadequately supported claims, payments for services not rendered, and payments resulting from fraud and abuse. In addition, standardizing the documentation would decrease the amount of review time and increase the overall efficiency of the process.

Signed Contracts

Signed contracts were not always uploaded into WIMS. Currently, the grant manual does not require the upload of a signed copy of the contract for each drawdown. Signed copies of the grant contracts, including notice to proceed dates, grant contract terms, and invoice reconciliations should be available within the WIMS system. By including signed copies of the contracts, management ensures that all supporting documentation for the drawdown is in one location which increases the efficiency of the review.

³ Drawdowns refer to the payments for goods and services associated with the grants awarded by the Division to airports. As goods are delivered and services are provided, airports request funds from their grant budgets to pay for these goods and services.

⁴ We judgmentally selected 35 drawdowns from 374 that were paid during 2013. These included ongoing and completed grants and grants for surplus, internship, and educational programs.

⁵ Surplus sales are not directly related to discretionary grant payments, but were assessed during our review since they are contained within the drawdown module of the WIMS system.

Surplus Sales

Surplus sales approvals were not always properly documented. During our testing, we noted that the approvals for the grants from the August 2013 DIA surplus sale were omitted from the drawdown module. Management advised this was the first sale in which they had used WIMS and were still in the process of developing procedures.

We noted that a process had been developed for proper approval documentation of surplus grant drawdowns by the time of the 2014 surplus sale. Without the approval history for drawdowns within WIMS, verification of proper approvals and adequate segregation of duties of payment authorizations is not available or verifiable.

Fields and Reports

Management could better analyze information contained in WIMS through the use of fields⁶ and increasing the available number of standardized reports. During our review, we found that not all fields and or reports were available which would improve analysis of grant information. For example, there were no reports showing the different levels of approval for a specific grant. Having this information would assist in determining if proper approval for the grant was made, as well as identify the person who made the approval. There was also no standardized report available that would show the number of final payments by airport and by year. Therefore management does not have the most complete information when making decisions relating to the discretionary grants. For additional suggestions on fields and reports see to [Appendix D](#).

⁶ Fields are an expression of data within the system. Various fields can be combined based on users' needs in order to generate multiple types of reports. Users should rely on these reports to support and understand their operations.

Management Actions

During the course of the audit, management began to take corrective action. Specifically, management began:

- Documenting the implementation of the WIMS system.
- Uploading signed final copies of contracts.
- Uploading supporting documentation for surplus sales.

Recommendations

We recommend that the Director of the Aeronautics Division ensure:

1. Documentation of WIMS is completed by both the Division and the developer.
2. Administrative rights access is restricted and that the generic user information is properly updated.
3. Written policies and procedures for grant reimbursement are developed that would include a summary, as well as supporting documentation for the payment.
4. Signed copies of contracts are uploaded into WIMS.
5. Supporting documentation is contained in WIMS for surplus sales.
6. Fields and standard reports are identified and utilized.

Management Comments

Management agreed with the findings and recommendations made in this report. Management also advised that all the recommendations have been implemented.

See [Appendix A](#) for management comments in their entirety.

Evaluation of Management Comments

The Division of Audit considers management's comments responsive to the recommendations and corrective actions should resolve the issues identified in the report.

Appendix A – Management Comments

Management Comments



April 22, 2015

TO: Barbara Gold, CPA CISA
Audit Division Director

FROM: Stanley J. Buck,
Division of Aeronautics, Interim Director

Subject: Management Response to Audit No: 15-013

Thank you for the opportunity to reply to the Audit Report on the implementation of the Web-Based Information Management System (WIMS). I would like to begin by expressing my appreciation for the effort and cooperation of you and your staff. I am certain our WIMS program is better as a result of your review and recommendations. The following are the Division Management Response to your recommendations.

Recommendation 1 Agree Implemented: 30 November 2014

After meetings with the audit staff last fall, the Division formulated a plan with the developer to collect implementation documentation for phase II. This documentation is being maintained by the developer in a Salesforce application called Vertigo.

Recommendation 2 Agree Implemented: 1 March 2015

The Division has multiple "System Administrator" Licenses because this is the level of functionality required to fully access WIMS. We have the ability to assign system administrator control to one person who then can modify the access for each of the other licenses. This primary control is assigned to the Senior Planner position.

Recommendation 3 Agree Implemented: 30 November 2014

The Division implemented a requirement for a summary sheet if there are multiple invoices in a single drawdown. The Division Planners are trained to review and approve drawdown requests using a uniform process that outlines the acceptability of backup documentation. Each drawdown approval is reviewed and approved by the Program Manager for completeness and uniformity. These requirements are re-communicated to airport sponsors each time their submittal is unacceptable. Rejection of a drawdown request automatically is recorded in the system.

5126 Front Range Parkway, Watkins, CO 80137 P 303.512.5250 F 303.261.9608 www.codot.gov



Appendix A – Management Comments

Recommendation 4 Agree Implemented: Immediately

The WIMS files identified in Recommendation 4 were a part of the transition period between the Division's legacy record keeping prior to WIMS, and directly after implementation of WIMS. The grants identified were administered in both systems as a test of the program. The contracts not included in WIMS were on file in Division legacy files both electronically and in hard copy. The files identified were transferred to WIMS on the spot and the process for all current and future grants requires contract inclusion in WIMS at the time each contract is signed.

Recommendation 5 Agree Implemented: Immediately

During the initial development of WIMS the primary consideration was to develop WIMS to manage Capital Improvement Plans and the submittal and administration of airport grants. When Denver International Airport notifies Division staff of their desire to sell surplus equipment, there is not sufficient time to go through the customary grant submittal process. When notified, Division staff has a short amount of time to set up the process. The Division asks the Board for funding and depending on the amount needed for each airport, purchase orders are created at the sale and are followed by a request for repairs to bring the equipment to an acceptable level of reliability. When the aforementioned POs from the surplus sale were created a process did not exist in WIMS. After identification of this finding by Audit, the drawdowns mentioned in the finding were annotated with comments describing the actual approval and a standard process was established to insure the documentation including approvals are recorded and consistent.

Recommendation 6 Agree Implemented: 30 November 2014

After discussions with audit staff last fall, the Division increased its efforts to develop report generation capabilities both routine and exceptional. During this effort to expand these proficiencies, the Division's developer suggested we include a program called Conga that complements Salesforce. This program has greatly expanded our ability in reporting function. This coupled with the effort our staff has put into advances, we are confident in our ability to respond to exceptional reporting and have developed multiple recurring reports.

Note: Management Comments numbers 3, 4, & 5 will be included in the Division's Program and Process (P&P) Manual. This manual will not be taken to the Board until the Division has a permanent Division Director. This manual will include any process changes identified by the upcoming performance audit. Estimated completion and acceptance by Colorado Aeronautical Board is September 2015.

Sincerely,



Stanley J. Buck, Interim Director
Colorado Division of Aeronautics



Appendix B – Additional Information

Objective, Scope, Methodology and Criteria

The objective was to assess the Colorado Department of Transportation Aeronautics Division Web-based Information Management System.

We conducted this review from August 2014 through April 2015 in accordance with *Generally Accepted Government Auditing Standards* (GAGAS) except for a peer review not conducted within the three-year requirement. This peer review is expected to be conducted by the spring of 2016. These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions. We did not identify any instances of fraud or abuse. We discussed our observations and conclusions with management on March 31, 2015 and included their comments where appropriate.

Our review did not include the following areas of WIMS: 1) capital improvement planning, 2) grant application, 3) Aeronautics Board approval and 4) contract and fuel tax collection. In addition, we did not review internal controls related to grant administration, as well as budget and cash management processes.

In order to meet our objective, we conducted interviews with Aeronautics Division management, staff and the developer. We also conducted analysis and judgmentally selected records for review. We obtained a list of all the active and inactive users as of August 20, 2014. We identified 182 users of which 130 were active users and 52 were inactive users. We judgmentally selected 35 drawdowns from 374 that were paid during 2013. These included ongoing and completed grants and grants for surplus, internship, and educational programs.

We used the following standards, policies and procedures:

- The Information System Audit and Control Association (ISACA) Sections G21 Enterprise Resource Planning – System Review and Section G29 Post-Implementation Review.
- Colorado State policy CISP-8, Sections 7.2.3.2 through 7.2.11.1.

Prior Audit Coverage

We have not previously conducted any audits or reviews regarding the Web-based Information Management System (WIMS).

Appendix C – Policy CISP-8 - Access Control

Access Credentials – No Anonymous Access

Title: ACCESS CONTROL	Document ID:	P-CISP-008
Version: 1.1	Creation Date:	December 20, 2006
	Revision Date:	August 1, 2011
	Supersedes Version:	1.0
	Document Type:	POLICY



7.2.3.2. Administrative Password

Account Passwords used for administration, paying special attention to any administrative passwords (such as "root"), is to be changed immediately on all systems when an IT staff member resigns, is transferred, or is terminated.

7.2.4. System Access Request

7.2.4.1. Employee File or Staff Record

Agencies are to develop procedures that ensure, prior to initial access, each Agency's Human Resources (HR) representative has verified that an Agency Acceptable Use Policy (AUP) has been distributed to each user and a record of receipt and acknowledgement is maintained in the user's employee file or staff record.

7.2.4.2. Record Retention

Agencies are to retain written records of IT System Access Requests, changes, terminations, and transfers for one year after the term of employment.

7.2.4.3. System Owner

All Agency systems are to have a "System Owner" that is responsible for approving and disapproving access requests for each given system. The System Owner grants access to requestors using a "least privilege" methodology.

7.2.4.4. Physical Security

All Agencies are to employ a similar Access Request procedure for granting access to Sensitive Areas. See Physical Security, P-CISP-010, for details.

7.2.5. Access Credentials

7.2.5.1. No Anonymous Access

Systems, which are not intended to be used anonymously, must require a unique username to access.

7.2.5.2. Unique Password

All systems must at a minimum require a password or other unique, private token to be validated prior to access.

7.2.5.3. System Administrators

System Administrators must have individual accounts or use utilities such as "sudo" or "Run As" to perform system administration tasks.



Appendix C – Policy CISP-8 - Access Control

Password Requirements / Log-in Requirements

Title: ACCESS CONTROL	Document ID:	P-CISP-008
Version: 1.1	Creation Date:	December 20, 2006
	Revision Date:	August 1, 2011
	Supercedes Version:	1.0
	Document Type:	POLICY



7.2.5.4. Service Accounts

Service accounts must be unique per application and not allow interactive access by providing a user shell.

7.2.5.5. Privileged Accounts

Privileged accounts are not to be used for non-administrative uses if possible. System administrators are to use their individual access accounts when making changes to systems to ensure accountability.

7.2.6. Password Requirements

7.2.6.1. Strong Passwords

Strong passwords are required to log in to critical state systems.

7.2.6.2. Strong passwords must:

7.2.6.3. Password Length

Be at least eight (8) characters in length.

7.2.6.4. Password Rotation

Be changed at least every 90 days.

7.2.6.5. Password Complexity

Require the use of three out of four of the following:

- Capital letters
- Lower case letters
- Numbers
- Special characters

7.2.7. Log-in Requirements

7.2.7.1. Logging Attempts

All systems must record successful and failed access attempts.

7.2.7.2. Unique IDs

Users are required to utilize their own individual, unique User IDs when logging in to the Agency networks and applications.

7.2.7.3. Technical controls

Where technically feasible, technical password controls must be implemented that enforce the guidelines in this document.



Role Based / Least Privileged Access

Title: ACCESS CONTROL	Document ID:	P-CISP-008
Version: 1.1	Creation Date:	December 20, 2006
	Revision Date:	August 1, 2011
	Supercedes Version:	1.0
	Document Type:	POLICY



7.2.8. Portable Computers

7.2.8.1. Portable Devices

Portable systems must be considered a stand-alone “enclave” and, therefore, have a local firewall deployed to restrict access to it.

7.2.8.2. Disk Encryption

Portable systems (laptops) must use full disk encryption with pre-boot authentication enabled (see Mobile Computing Policy, P-CISP-018).

7.2.9. Role Based / Least Privilege Access

7.2.9.1. Least Privileged

System owners must ensure that system roles are defined, establish varying levels of access, and are appropriate for the varying levels required for users to perform their job duties.

7.2.9.2. Minimum Access

Roles must only be granted based on the minimum functions required by users to perform their duties, including system or service accounts.

7.2.9.3. Approval

The data owner must approve role access requests.

7.2.9.4. Access Request Form

Roles must be clearly listed on a System Access Request Form.

7.2.10. Administrative Credentials and Sessions

7.2.10.1. Encryption

Connections to the systems to perform administrative functions must be encrypted (e.g., SSH, SSL, RDP).

7.2.10.2. Multiple Factor

Administrative credentials must use two-factor authentication or must adhere to password standards in this document if not using two-factor authentication. If using a password, it must be changed at least every 90 days.

7.2.11. Physical Access Controls

7.2.11.1. Physical Security

Specific physical access control guidance can be found in the Physical Security Policy, P-CISP-010.

7.2.9.



Appendix D – Fields and Reports

Fields:

Section: Drawdown detail

- 12 fields exist within WIMS: Account, Drawdown Name, Grant Full Name, Description, Grant, Date and Status, SRM PO, SAP PO, SAP Service Entry Sheet (ML81N) and SAP Park Invoice (MIR7)
- **Four fields were not available for reporting:** SRM PO, SAP PO, SAP Service Entry Sheet (ML81N) and SAP Park Invoice (MIR7)

Section: State Claim Amount

- Four fields exist within WIMS: State Amount to be Paid, Claim Amount, Public Notes, and State Amount Remaining.
- **All of these fields were available for reporting.**

Section: Financials

- Nine fields: Total Element Amount, Grant Element Balance, Created by, Created Date, State, Local, Federal / Other, Last Modified by, and Last Modified Date.
- **All of these fields were available for reporting.**

Section: Drawdown History

- Three fields: Date, User, and Action.
- **All of these fields were available for reporting.**

Section: Approval History

- Seven fields: Action, Date, Status, Assigned to, Actual Approver, Comments, and Overall Status.
- **None of these fields were available for reporting.**

Section: Notes & Attachments

- Five fields: Action, Type, Title, Last Modified Date and Created by.
- **None of these fields were available for reporting.**

Reports

Module Capital Improvement Plan (CIP)

- 12 reports: CIP Summary by Airport, Project by Status, Carry Over Amount by Year, CIP Update History, Project by Airport and Year, Project History, Project History by Airport, Board CIP Summary, CIP 2015, CIP Greg, Grant Detail Report, and SOAR's Comparison.
- **All of these reports were available within WIMS.**

Module Grant Application

- Six reports: Number of Applications by Year, Number of Applications Missing Information by Year, Number of Application Missing Information by Planner, Number of Application, Number of

Appendix D – Fields and Reports

Application by Type of Grant and Year, Status of all the Application by of Grant and Year.

- **Opportunity for improvement:** One of these reports could not be created, but data exists within WIMS.

Module: Grant Evaluation

- Two reports: Number of Applications Approved by Year and Number of Application Approved by Type and Year.
- **Opportunity for improvement:** None of these reports exist within WIMS, but the information is stored within WIMS.

Module: Grant Contracting

- Two reports exists within WIMS: Number of Contracts Executed by Airport / Year and Number of Notice to Proceed by Airport / Year.
- **Opportunity for improvement: Two reports:** Number of Applications Submitted to Procurement by Year and Status of all the Applications Submitted to Procurement by Year. These reports do not exist within WIMS, but the information is stored within WIMS. One report: Number of Notice to Proceed by Airport and Year. This report cannot be created due to WIMS' limitations.

Module: Drawdowns

- Three reports exists within WIMS: Drawdown by Airport and Year, Drawdown Status by Airport and Year, and Drawdown Aging by Airport and Year.
- **Opportunity for improvement:** One report: Number of Final Payments by Airport and Year. This report cannot be created due to WIMS' limitations, but the information is stored within WIMS.

Module: Interface WIMS-SAP

- Four reports: Number of PO by Year and Vendor (airport), Number of Payments by Year and Vendor (airport), Number of Amendments to PO by Year and Vendor (airport) and Number of Closed PO by Year and Vendor (airport).
- **Opportunity for improvement:** None of these reports exist within WIMS, but the information is stored within WIMS.



COLORADO

Department of Transportation

Division of Audit

4201 E. Arkansas Ave, Shumate Bldg.
Denver, CO 80222-3400

DATE: July 24, 2015

MEMORANDUM FOR: CDOT Transportation Commission

SUBJECT: Released Audit Report – CDOT Mobile Smart Phone Application Performance Audit

The attached report presents the results of our performance audit on the CDOT Mobile Smart Phone Application (Project Number 15-019) reviewed and released by the CDOT Audit Review Committee on July 24, 2015. This audit adds value by assisting management with reducing revenue risk and reputation risk.

We conducted this audit pursuant to Section 43-1-106, C.R.S., which authorizes us to conduct internal audits on CDOT. This report presents our findings, conclusions, recommendations and the responses of CDOT Management. Our audit was completed at the request of CDOT Management.

We appreciate the cooperation and courtesies provided by management. If you have any questions or need additional information, please contact me at 303-757-9687.

Barbara Gold, CPA, CISA
Audit Division Director

Attachment

cc: Shailen Bhatt, CDOT Executive Director
Amy Ford, CDOT Director of Communications
Kathy Young, Senior Assistant Attorney General

PERFORMANCE AUDIT REPORT



COLORADO

Department of Transportation

Division of Audit

CDOT Mobile Smart Phone Application

The Audit Review Committee has released this report for public review.

Released Report

Report Date: May 14, 2015

Audit No: 15-019

EXECUTIVE SUMMARY

Purpose of Audit and Objectives

The purpose of this performance audit included assessing the status of contract #12 HAA 41387, dated May 2012, between the Colorado Department of Transportation (CDOT) and The Hub Companies, LLC dba urHub (urHub) regarding the CDOT mobile smart phone application (app).

Our audit objective included assessing whether both parties had adequately completed the statement of work in the contract and whether the contract promotes the public policy of the State of Colorado.

We prepared this report for the Colorado Transportation Commission, CDOT Administration, and CDOT management. The report presents the results of the CDOT Performance Audit of the Hub Companies, LLC dba urHub contract. We conducted this audit at the request of CDOT management.

Background

CDOT entered into a five-year public-private initiative with urHub in May 2012 to develop and implement a smart phone application (app). The contract specifies urHub's responsibility of developing the app and multi-media platform, which includes the marketing strategy to increase public awareness and generating advertising revenue. CDOT is contractually responsible for enhancing public awareness, encouraging usage, and providing urHub with necessary travel data. The partnership does not cost CDOT any dollars as the parties agreed to share the advertising revenue with 65 percent allocated to urHub after the cost thresholds are met.

The app, which went live in September 2012, can be downloaded for free, and provides users with relevant travel information including closed circuit traffic cameras, estimated travel times, road conditions including weather and alerts, incidents and closures, and construction activities. As of February 17, 2015, the app has grown to approximately 450,000 users.

Conclusion

Overall, we found that both parties met the majority of the contractual requirements, but the contract did not sufficiently promote the public policy of the State.

We identified opportunities to add value by enhancing the smart phone application for the citizens and visitors of Colorado by providing relevant, accurate, and timely travel information. Specifically, we found:

- Inconsistent project manager assignments over contract milestones, deliverables, and key advertising items
- Lack of oversight and procedures over revenue and reporting
- Unresolved conflict over data requirements and prioritization of additional areas of coverage

These conditions occurred due to significant turnover, lack of succession planning, and inconsistent designation of project managers. Consequently, the lack of clear responsibility and authority for project management on the part of CDOT has resulted in a less effective collaboration with urHub personnel. Disagreements and strained working relationships have affected the ability of CDOT to ensure this project's success.

We identified several recommendations for improvement regarding the following areas:

- Designate a project manager to ensure contractual requirements are met
- Enhance advertising oversight and develop a system for documenting approvals
- Develop procedures to ensure completeness and accuracy of reported revenue
- Resolve disagreements about certain data to provide an alternate route feature

In addition, the contract did not sufficiently promote public policy due to the risks created by the missing elements below. Specifically, the contract:

- Forfeits intellectual property rights over the application
- Lacks clearly defined milestones and annual renewal clause
- Lacks support for cost thresholds and revenue sharing targets

These conditions occurred because prior management was inexperienced in developing complex contractual agreements outside the scope of their regular activities. The missing elements created avoidable risks that exposed CDOT to potential financial liability and damage to public perception. Consequently, the contract was not in the best interest of CDOT or the State of Colorado.

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Introduction

The General Assembly enacted the Public-Private Initiatives (PPI) Program Act of 1995, C.R.S. 43-1-1201 through 1209 as the legislative framework that enables CDOT to enter into PPI agreements for transportation system projects. The program provides flexibility in delivering public services more cost-effectively and efficiently by allowing non-traditional agreements between one or more private or public entities that provides for sharing of resources and cooperation in researching, developing, and implementing transportation projects. See [Appendix A](#) for additional information about this audit.

In May 2012, CDOT entered into a five-year public-private initiative with urHub to develop and implement a smart phone application to enhance traveler information by making it more accessible, interactive, and useful. urHub's responsibilities include developing, maintaining, and updating the app and the multi-media platform. The platform includes the marketing strategy and campaign to increase public awareness and to generate advertising revenue. CDOT's contractual responsibilities include enhancing public awareness with media buys, federally mandated campaigns, press conferences, news coverage; reaching out to internal constituents and other branches of government to enhance use of the application; and providing urHub with necessary travel data. In lieu of any direct payments exchanged, the parties contractually agreed to share the advertising revenue. The contract states that CDOT will receive 35 percent of every advertising dollar earned over specified urHub cost thresholds. The cost threshold for the first contract year is \$443,750 and increases 7 percent each year. In its original proposal, urHub established revenue projections, which are compared to actual revenue on the table in [Appendix A](#). If advertising revenue reached the projections, CDOT's 35 percent share over the five year contract period would total approximately \$600,000. A detailed table of this calculation is documented in [Appendix A](#). To date, gross revenue has not exceeded the cost threshold in any contract year, resulting in CDOT receiving no revenue share.

The app can be downloaded for free and provides users with relevant travel information including closed circuit traffic cameras, estimated travel times, road conditions including weather and alerts, incidents and closures, and construction activities. The app became available on September 22, 2012 and as of February 17, 2015, has grown to approximately 450,000 users.

Conclusion

Overall, we found that both parties met the majority of the contractual requirements, but the contract did not sufficiently promote the public policy of the State.

To date, both parties have met the majority of the contractual requirements, however, we identified opportunities to add value by enhancing the smart phone application for the citizens and visitors of Colorado by providing relevant, accurate, and timely travel information. Specifically, we found:

- Inconsistent project manager assignments over contract milestones, deliverables, and key advertising items
- Lack of oversight and procedures over revenue and reporting
- Unresolved conflict over data requirements and prioritization of additional areas of coverage

These conditions occurred due to significant turnover, lack of succession planning, and inconsistent designation of project managers. Consequently, the lack of clear responsibility and authority for project management on the part of CDOT has resulted in a less effective collaboration with urHub personnel. Disagreements and strained working relationships have affected the ability of CDOT to ensure this project's success.

We identified several recommendations for improvement regarding the following areas:

- Designate a project manager to ensure contractual requirements are met
- Enhance advertising oversight and develop a system for documenting approvals
- Develop procedures to ensure completeness and accuracy of reported revenue
- Resolve disagreements about certain data to provide an alternate route feature

In addition, the contract did not sufficiently promote public policy due to the risks created by the missing elements below. Specifically, the contract:

- Forfeits intellectual property rights over the application
- Lacks clearly defined milestones and annual renewal clause
- Lacks support for cost thresholds and revenue sharing targets

These conditions occurred because prior management was inexperienced in developing complex contractual agreements outside the scope of their regular activities. The missing elements created avoidable risks that exposed CDOT to potential financial liability and damage to public perception. Consequently, the contract was not in the best interest of CDOT or the State of Colorado.

Audit Results

On May 8, 2013, the U.S. Department of Transportation and the White House Office of Public Engagement hosted a Champions of Change event on "Transportation Technology Solutions for the 21st Century. The program honored urHub and CDOT representatives as a "White House Champion of Change for Transportation Innovation" at a ceremony in Washington D.C. for the app, which has the potential of benefitting more than five million Colorado residents and 52 million visitors. Both parties should strive to live up to the expectations of this recognition and continue to improve on their collaborations and communications.

Based on our review, we identified opportunities to add value by enhancing the smart phone application for the citizens and visitors of Colorado by providing relevant, accurate, and timely travel information. The recommended improvements are even more

critical, due to the constantly evolving nature of technology in which innovations quickly become obsolete. Management should consider a shorter contract period with better-defined responsibilities and expectations of all parties involved in contracts related to technology. For example, an annual contract with an option to renew each year would be best practice. This five-year contract expires in May 2017 and could prove to be problematic as it precludes CDOT from contracting with any other parties to develop a similar application in the event the current project is not successful. The areas of improvement we have identified are sound management practices consistent with the policies of the State of Colorado. In addition, they will contribute toward CDOT's position as a national leader in reducing congestion, improving travel efficiency, and adding significant value to citizens' lives. We discuss each of the areas for improvement in the following sections.

Project Management

According to the National Conference of State Legislatures, public-private partnerships are agreements that allow private companies to take on traditionally public roles in infrastructure projects, while keeping the public sector ultimately accountable for projects and the overall service to the public. As such, CDOT is both responsible and accountable for the success of the urHub project. One of the fundamental ways in which CDOT can better ensure success of this project is to provide adequate oversight by designating internal project managers. Project managers are essential for holding both parties to contractual obligations to ensure the parties meet the objectives. CDOT had a designated project manager from the contract's inception in May 2012 through November 2012. However, due to staff turnover and a lack of succession planning, for almost two years, (from December 2012 through September 2014) CDOT had no specific project manager assigned to this project. Rather, project management was fragmented among various staff, none of whom had clearly designated responsibilities or overall authority for project oversight.

The lack of clear responsibility and authority for project management on the part of CDOT has resulted in a less effective collaboration with urHub personnel. Disagreements and strained working relationships have affected the ability of CDOT to ensure this project's success.

Every user has the choice to add a review on their device's app store. Based on these independent user reviews, the overall user ratings for Apple and Android devices were 2.4 out of 5.0 (86 reviews) and 3.3 out of 5.0 (575 reviews), respectively. This is an indication that CDOT could improve project management to ensure success in enhancing the application.

Project managers are critical to ensure both parties meet contractual obligations, identify potential delays early in the process, and take the necessary steps to address any problems. We also found that urHub did not always meet the contractual delivery dates associated with its development of the application. Table 1 shows urHub did not complete three of the five tasks within the required dates.

Table 1

CDOT urHub Audit #15-019			
App Development Due Dates vs Actual Delivery Dates			
May 2012 – May 2013			
	Task	Due Date	Delivery Date
1	Provide demo application	30 days following contract execution	9 days late
2	Provide application (I-70 corridor)	60 days following contract execution.	60 days late
3	Upgrade (expand coverage to I-25)	150 days following contract execution	122 days late
4	Upgrade (integrate business incentives component)	210 days following contract execution	67 days early
5	Upgrade (expand coverage to entire state)	360 days following contract execution	62 days early

Source: Contract Exhibit A, Development, page 16

Necessary design updates and longer than expected approvals contributed to these development delays. The absence of ongoing oversight jeopardizes the project’s deadlines completion and overall success. Continuity of management oversight is also imperative in identifying potential staffing shortfalls due to turnover and developing a succession plan.

Advertising Oversight

In the contract, CDOT specified that the contractor would absorb the financial risk in delivering the application to the public. In addition to agreeing to this requirement, urHub agreed to share revenues from the application with CDOT. Specifically, the contract between CDOT and urHub states that CDOT will receive 35 percent of revenues that exceed the cost thresholds. While the application is free to users, advertisers must pay a fee to advertise on the application. Thus, advertising revenue is a critical component of this partnership. It has also been a topic of ongoing disagreement between CDOT and urHub involving specific advertising content that has affected design and functionality. These disagreements, in turn, have led to development delays and a consistent decline in advertisers. We performed audit work to determine whether urHub complied with the advertising requirements in the contract. We focused on whether urHub had obtained CDOT’s approval related to advertising contracts and content. Specifically, items 2 and 5-7 in the Advertising and Sponsorship Monetization section of the contract states that urHub will:

- Create a tiered sponsorship plan, approved by CDOT
- Include a detailed, CDOT approved disclaimer on the application similar to the example in the contract
- Obtain CDOT approval for all advertising contracts and content. Before executing any advertising contract, urHub should furnish to CDOT the name of the sponsor and proposed terms of the agreement. In addition, before posting any advertising content the contractor will obtain CDOT approval.

Our audit work identified a significant lack of documentation that would support CDOT's approvals for the items noted above. We sampled 15 advertisers to determine if CDOT approval was documented. Of the 15 sampled advertisers, CDOT could not provide evidence of approval for 11 (73 percent) of the contracts and for 5 (33 percent) of the content posts. Further, CDOT could not provide evidence of its approval for the tiered sponsorship plan or the disclaimer. In addition, urHub implemented interest-based advertising, which they automatically generated based on each user's recent search history, without CDOT's prior approval. urHub could not filter advertisers to CDOT's specifications, which resulted in an inappropriate advertisement popping up on the site. urHub has removed this particular advertisement from the website. CDOT has requested an analysis from urHub detailing the estimated revenue compared to the associated risks of inappropriate advertising showing up on the site.

CDOT experienced significant turnover of personnel involved with the contract. In addition, CDOT did not develop a succession plan to mitigate the risk of a lack of personnel involved with monitoring the contract, specifically the advertising. We found between November 2012 and October 2014, CDOT did not have designated staff assigned with responsibility for overseeing the advertising components of the urHub contract, including authority for approving advertising.

Designating project managers, developing a succession plan, and documenting approvals ensure CDOT reviews all potential advertising to reduce the risk of inappropriate advertising. Inappropriate advertising can negatively influence CDOT's public perception, which could lead to a loss in public trust and awareness of CDOT's travel tools. Having documented procedures for project managers is an internal control procedure that ensures the project manager follows all steps and appropriately document evidence.

Revenue & Reporting

The contract between urHub and CDOT requires urHub to report advertising revenue earned to CDOT in *Quarterly Financial Reports (QFRs)*. The nature of the revenue sharing agreement makes it imperative that data about the revenue collected by urHub and reported to CDOT is complete and accurate.

We assessed the accuracy and completeness of the advertising revenue reported to CDOT by urHub in the required *QFRs*. We tested the *QFRs* by comparing them with the Revenue Share Agreement section of the contract, as well as urHub's financial records, including its accounting system reports and bank statements. We also requested to observe urHub's reconciliation process regarding the advertising revenue, but urHub denied this request. Without observing the reconciliation process, we could not obtain reasonable assurance that their reporting procedures are sufficient to ensure revenue reported to CDOT is accurate and complete.

CDOT management requested we review the actual yearly expenses urHub has incurred specific to development and advertising. According to urHub, they do not track actual

expenses but provided us with estimated expense detail based on personnel hours spent on the project. urHub estimated they spent \$645,450, \$468,900, and \$372,000 for contract years one, two and three, respectively. Year three included estimated expenses incurred through December 2014. urHub did not provide sufficient supporting documentation for this detail although the contract requires that “the State may review all financial records including all costs and revenue associated with development and maintenance of the app and the multi-media platform.” Accordingly, we were not able to test the validity or completeness of the data but included it for informational purposes.

We performed audit procedures to determine if urHub accurately reported all revenue to CDOT and identified the following:

- *Incomplete records* - urHub did not report three payments totaling \$20,000 as revenue to CDOT including a \$10,000 and a \$5,000 payment in contract year one, and a \$5,000 payment in contract year three. In addition, the QFRs submitted to CDOT do not contain all of the financial information required in the contract. Specifically, the reports do not include contract amounts and actual receivables for the advertisers.
- *Inaccurate Records* - urHub incorrectly included June 2013 revenue in both contract year one and contract year two. urHub also incorrectly included June 2014 revenue in both contract year two and contract year three.

CDOT has a responsibility to ensure it collects all revenues it is due in accordance with the contract. While these errors and omissions have not resulted in a material impact to date, they did result in the errors noted above. In addition, the continued absence of accurate and complete financial data could negatively affect revenue owed to CDOT. Complete *QFRs* and proper reconciliation procedures give CDOT assurance that urHub identifies and corrects errors in a timely manner. urHub personnel stated that they were providing what CDOT requested, and CDOT did not appear to notify urHub that its reports were incomplete and/or inadequate. CDOT and urHub need to work together to address reporting needs and capabilities and agree upon solutions.

Data Requirements

The contract between CDOT and urHub requires urHub to develop the applications in accordance to the specifications. One of CDOT’s responsibilities includes supplying urHub with relevant travel data so that urHub can complete development of the application in accordance with the contract. urHub stated that this data would aid in adding key routes to the app for which CDOT has no speed data. The addition of this data would give travelers the ability to plan trips potentially relieving congestion.

We reviewed correspondence between urHub and CDOT that documented five requests specifically related to the alternate route and mode planning features. urHub requested this data between December 2012 and January 2015. CDOT stated that sharing the data

with urHub would be a breach of its contract with the data's third party vendor. CDOT has communicated this contract limitation with urHub.

In addition, the contract requires urHub to expand coverage to include the entire state and enhance features and functionality as mutually agreed upon with CDOT. The contract emphasizes that urHub collaborate with CDOT to prioritize additional areas of coverage, such as the US 6 and US 36 corridors.

Public Policy

As noted in contract section 16B¹, "The State is entering into this Contract for the purpose of carrying out the public policy of the State of Colorado..." The contract did not sufficiently promote public policy due to the risks created by the missing elements below. Specifically, the contract:

- Forfeits intellectual property rights over the application
- Lacks clearly defined milestones and annual renewal clause
- Lacks support for cost thresholds and revenue sharing targets

The contract allows urHub to maintain property rights over the application after the contract termination date. For example, the contract states, "All Contractor original materials...shall remain the sole property of Contractor." In addition, ownership of intellectual property rights is maintained by the Contractor unless specifically purchased by CDOT for an undetermined amount.

The contract includes initial development milestones but does not provide measurable marketing goals. Additionally, the lack of an annual renewal clause limits CDOT from reassessing its goals to ensure urHub meets performance expectations.

Finally, the contract lacks the methodology behind the cost threshold calculations and the revenue sharing targets. These oversights potentially prevent CDOT from holding urHub accountable to the revenue targets they projected in their initial proposal.

These conditions occurred because prior management did not request guidance from other senior management or IT personnel. Additionally, prior management was inexperienced in developing complex contractual agreements outside the scope of their regular activities. The missing elements created avoidable risks that exposed CDOT to potential financial liability and damage to public perception. Consequently, the contract was not in the best interest of CDOT or the State of Colorado.

¹ See Public Policy section in the Appendix for the detailed contract language.

Recommendations

We recommend that CDOT management:

Project Management

1. Designate a project manager to oversee project milestones, including those deliverables that are not yet completed for this project. We also recommend management clearly communicate and document contractual requirements and responsibilities to all related personnel.

Advertising Oversight

2. Designate a project manager responsible for key advertising items of the contract and specifically:
 - a) Develop and communicate procedures for contractual advertising requirements including how approvals for all advertising should be documented
 - b) Develop a system for documenting all advertising approvals to ensure they are in compliance with the contractual requirements for advertising.

Revenue and Reporting

3. Develop procedures to ensure the completeness and accuracy of the *QFRs* submitted by urHub. These procedures should include third party (e.g. bank statements, reconciliations) verification of the reported revenue, as well as a comparison of contract revenue amounts to collected payments.
4. Determine when the year-end revenue collection period ends and document the specific reporting procedures for the designated project manager (e.g. definition of payments where extra collection time is allowed; length of extra collection time; procedures for ensuring revenue is not reported twice; etc.)

Data Requirements

5. Come to a documented understanding regarding the data and consider a contract amendment that would specify whether urHub could utilize the data. If CDOT cannot share the data, we recommend CDOT identify ideas in providing the alternate route and mode planning feature to the app or amend the contract by removing this development requirement.
6. Communicate and document their expectations regarding the prioritization of additional areas of coverage.

Public Policy

7. a) Ensure future technology contracts of similar nature include clearly defined milestones, an annual renewal clause, sufficient support for monetary agreements such as cost thresholds or revenue sharing, and protection over intellectual property.

b) Request guidance from legal and information technology personnel to ensure technology contracts promote the public policy of the State.

8. Evaluate options to mitigate the risks created by the missing contract elements.

Management Comments

Management agreed with the findings and recommendations made in this report. Below is a summary of management comments.

1. CDOT has provided appropriate management oversight to this project since its beginning. This was accomplished through the specific and consistent participation of the ITS IT Section Manager, CTMC Manager, ITS Branch Manager as well as the Director of TSMO and Director of Communications. After a TSMO reorganization, the duties of project manager were specifically assigned to the manager of the newly formed Traffic Management Branch in October 2013. Later in 2014, CDOT assigned an IT Professional III of the ITS IT Section as the Project Manager in order to align this project with other traveler information projects that are managed by the ITS IT Section, such as CDOT's COTrip.org traveler information website.

Implementation date: April 2015. An IT Professional III from the ITS IT Section has been identified as the CDOT project manager.

2. CDOT agrees that there is not a more deliberate structure for documenting approved advertisers. The advertising policy has been approved by CDOT but will need to have a formal signature and submittal for record-keeping. Additionally, CDOT will develop a formal advertiser approval worksheet that demonstrates that urHub has notified CDOT of potential advertiser and that CDOT has confirmed that advertiser fits within the policy. The IT Professional III noted above will be the assigned project manager and will implement strategies on policy and sign-offs.

Implementation date: Sign advertising policy and develop individual advertiser's sign-off approach by July 15, 2015

3-4. Due to lack of responsiveness of urHub on the revenue and documents, CDOT will be examining the contract with urHub to determine a path forward both on the revenue and expenditure validation, but to determine if the approach on the public-private partnership is providing CDOT the value anticipated by the contract.

Implementation date: Finalize internal discussions and approach by July 31, 2015

5-6. CDOT will submit a written response to urHub clarifying the data availability and need for continued direction on the alternate route and mode planning feature. CDOT has communicated expectations to urHub regarding the additional areas of coverage but also needs to thoroughly examine the value of the relationship in regards to speed of information sharing and additional areas of coverage.

Implementation date: Data availability clarification will be provided by urHub in writing by July 31, 2015. CDOT will complete the value examination by July 31, 2015.

7. CDOT agrees that future technology contracts need to be more carefully assessed to include clearly defined milestones, annual renewal clauses and more established agreements over revenue sharing and protection of intellectual property. This includes additional support during contract development from legal and technology representatives.

Implementation date: May 31, 2015

8. CDOT will evaluate the options to mitigate the risks created by the missing contract elements along with an overall assessment of whether the public private partnership is delivering the value to the public that CDOT expects.

Implementation date: May 31, 2015

Evaluation of Management Comments

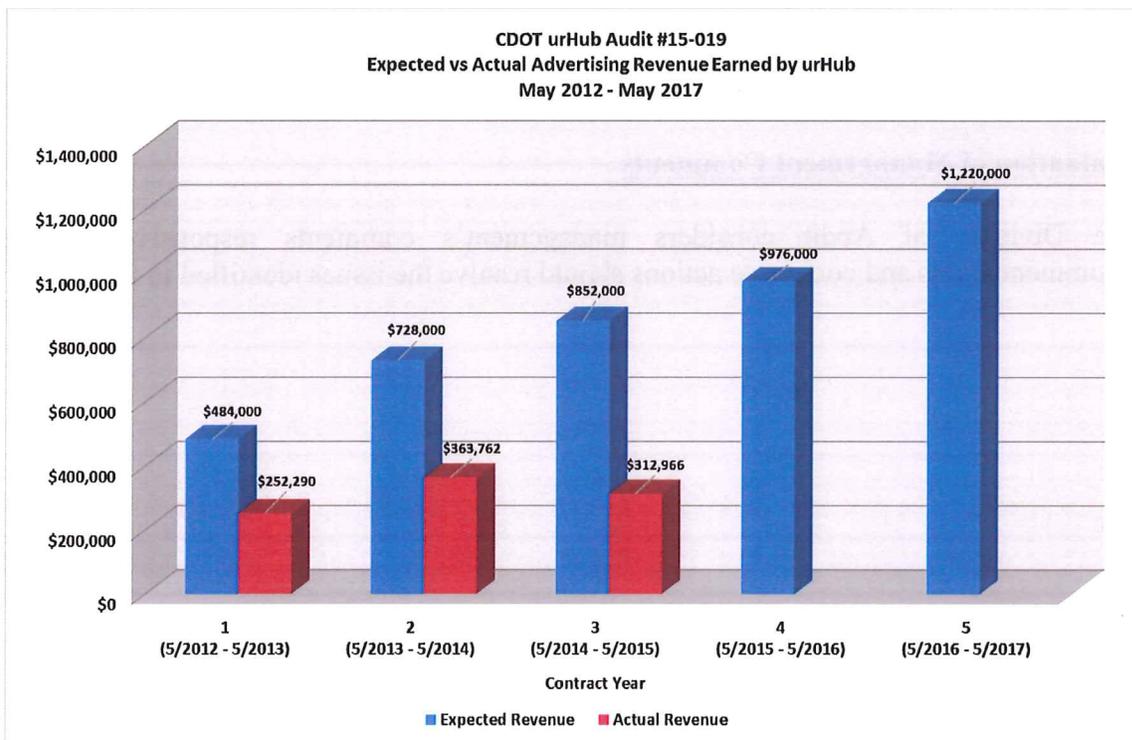
The Division of Audit considers management's comments responsive to the recommendations and corrective actions should resolve the issues identified in the report.

Appendix A – Additional Information

Public Policy

Per Section 16B of the contract, “The State is entering into this Contract for the purpose of carrying out the public policy of the State of Colorado, as determined by its Governor, General Assembly, and/or Courts. If this Contract ceases to further the public policy of the State, the State, in its sole discretion, may terminate this Contract in whole or in part. Exercise by the State of this right shall not constitute a breach of the State’s obligations hereunder.”

Projected vs. Actual Revenue



Source: Prepared by CDOT Audit Division.

Note: Contract Year 3 actual revenue was approximately \$156k, which only encompassed the first two quarters of the year. Accordingly, we doubled actual revenue to estimate annual revenue.

Projected CDOT Revenue Share *

Year	Cost Threshold	Projected Revenue	Over Threshold	CDOT Share
1	\$ 443,750	\$ 484,000	\$ 40,250	\$ 14,088
2	\$ 474,813	\$ 728,000	\$ 253,188	\$ 88,616
3	\$ 508,049	\$ 852,000	\$ 343,951	\$ 120,383
4	\$ 543,613	\$ 976,000	\$ 432,387	\$ 151,336
5	\$ 581,666	\$ 1,220,000	\$ 638,334	\$ 223,417
	\$ 2,551,890	\$ 4,260,000	\$ 1,708,110	\$ 597,838

*Totals may not add due to rounding

Objectives, Scope, Methodology, Criteria

Our audit objective included assessing whether CDOT and urHub had adequately completed the statement of work in the contract and whether the results of the work completed reflect the public policy of the State of Colorado. Our audit covered the period of May 2012 through February 2015.

According to CRS 24-103-601(2), the CDOT Audit Division is “entitled to audit the books and records of any contractor or subcontractor under any negotiated contract or subcontract to the extent that the books and records relate to the performance of a state contract or subcontract and in conducting any such audit, to maintain the confidentiality of any information contained in the books and records that is deemed proprietary as determined by the state.” According to the urHub contract, *Section 9, Contractor Records*, “the State may review all financial records including all costs and revenue associated with development and maintenance of the App and the Multi-media Platform.”

Our methodology used to complete the objectives of this audit included the following:

- Reviewing and understanding the contract terms
- Interviewing CDOT staff responsible for monitoring the contract and marketing the application
- Interviewing urHub staff responsible for developing and maintaining the application and marketing campaign
- Testing a sample of contracts between urHub and advertising clients
- Reviewing urHub’s financial records including its accounting system.

We conducted this review from August 2014 through April 2015 in accordance with *Generally Accepted Government Auditing Standards (GAGAS)* except for a peer review not conducted within the three-year requirement. This peer review is expected to be conducted by the spring of 2016. These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We did not identify any instances of fraud or abuse. We discussed our observations and conclusions with management on May 14, 2015 and included their comments were appropriate.

Prior Audit Coverage

We have not previously conducted any audits or reviews regarding the contract between CDOT and urHub.

