AUDIT REPORT

CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
BUREAU OF FINANCIAL AUDIT
WILLIAM C. THOMPSON, JR., COMPTROLLER

Audit Report on the Development and Implementation Of the Standardized Change Order Record-Contract Overrun Request Entry (SCORE) System by the Department of Design and Construction

7A03-138

June 26, 2003

THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
1 CENTRE STREET
NEW YORK, N.Y. 10007-2341
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WILLIAM C. THOMPSON, JR.
COMPTROLLER

To the Citizens of the City of New York

Ladies and Gentlemen:

In accordance with the Comptroller's responsibilities contained in Chapter 5, § 93, of the New York City Charter, my office has performed an audit of the development and implementation of the Standardized Change Order Record-Contract Overrun Request Entry System by the Department of Design and Construction. The system tracks the status of change orders and overrun request to identify causes of delays on construction projects. The results of our audit, which are presented in this report, have been discussed with officials from the Department of Design and Construction, and their comments have been considered in preparing this report.

Audits such as this provide a means of ensuring that City agencies are developing computer systems in an efficient, timely, and cost-effective manner.

I trust that this report contains information that is of interest to you. If you have any questions concerning this report, please contact my audit bureau at 212-669-3747 or e-mail us at audit@Comptroller.nyc.gov.

Very truly yours,

William C. Thompson, Jr.

WCT/GR

Report: 7A03-138
Filed: **June 26, 2003**

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The City of New York
Office of the Comptroller
Bureau of Financial Audit
EDP Audit Division

Audit Report on the Development and Implementation of the Standardized Change Order Record-Contract Overrun Request Entry (SCORE) System By the Department of Design and Construction

7A03-138

AUDIT REPORT IN BRIEF

We performed an audit on the development and implementation of the Department of Design and Construction's (the Department) Standardized Change Order Record-Contract Overrun Request Entry (SCORE) System. The system tracks the status of each change order and overrun request to identify causes of delays.

Audit Findings and Conclusions

SCORE meets the overall goals as stated in the functional requirements and allows for future enhancements and upgrades. The Department followed a formal system development methodology when developing SCORE. Since SCORE was designed, developed, tested, and implemented by in-house employees, the Department did not incur any procurement costs and therefore was not required to use or comply with the City Charter and Procurement Policy Board (PPB) rules when developing the system. In addition, SCORE has been integrated into the Department's Disaster Recovery Plan.

However, respondents to our user satisfaction survey revealed that 50 percent have had problems entering information into the system; 79 percent stated that SCORE is not user-friendly; and 69 percent would like to see changes made to SCORE. Moreover, the Department has not surveyed SCORE users to determine whether the system is adequately performing its intended functions. Finally, access by infrequent or "inactive" users is not adequately controlled.

Audit Recommendations

To address these issues, we recommend that the Department should:

➤ Meet with system users to assess their needs and ensure that their concerns are addressed.

> ➢ Conduct periodic user surveys to discover common or recurring problems requiring executive management's attention. Management should address these problems immediately.

> ➢ Determine why 23 user IDs have not been used to log onto SCORE since at least 2002. The accounts of inactive users that are not needed should be immediately terminated.

> ➢ Develop and implement a procedure to terminate inactive user accounts.

INTRODUCTION

Background

The Department of Design and Construction (Department) uses in-house resources and private consultants and contractors to perform design and construction services related to: streets and highways, sewers, water mains, correctional and court facilities; cultural institutions; libraries; schools; and other public buildings, facilities and structures. The Department reduces costs and minimizes neighborhood disruption by coordinating construction project activities with utility companies, community representatives, and private industry.

The Standardized Change Order Record-Contract Overrun Request Entry (SCORE) computer system tracks the status of each change order and overrun request to identify causes of delays. SCORE was designed, developed, tested, and implemented by in-house employees. The user requirements were completed in March 1999. The development phase began in April 1999. Quality assurance and user acceptance testing were completed in September 2000. System modifications were made between September and December 2000. Development of a new user manual, training, and roll-out of the application were completed in January 2001.

Objectives

The audit's objectives were to determine whether:

- the Department followed a formal system development methodology when developing SCORE;

- SCORE meets the Department's initial business and system requirements;

- the system design allows for future enhancements and upgrades;

- SCORE, as a finished product, meets overall goals as stated in the system justification;

- SCORE has been included in the Department's Disaster Recovery Plan; and

- the Department complied with City Charter provisions and Procurement Policy Board (PPB) Rules.

Scope and Methodology

Audit fieldwork was conducted from February 2003 to May 2003. To achieve our audit objectives, we reviewed and analyzed the Department's:

- System requirements;

- Functional requirements;

- Project Plan;

- Quality Assurance Test Log; and

- Disaster Recovery Plan.

In addition, we interviewed Department officials about how the system is used, and we conducted a user satisfaction survey.

We used Comptroller's Internal Control and Accountability Directive 18, *Guidelines for the Management, Protection and Control of Agency Information and Information Processing Systems*, as a criterion for this audit. As the City does not have a formal system development methodology, we used the National Institute of Standards and Technology Special Publication #500-223, *A Framework for the Development and Assurance of High Integrity Software*, to assess whether a system development methodology had been followed.

This audit was conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS) and included tests of the records and other auditing procedures considered necessary. This audit was performed in accordance with the City Comptroller's audit responsibilities, as set forth in Chapter 5, § 93, of the New York City Charter.

Discussion of Audit Results

The matters covered in this report were discussed with Department officials during and at the conclusion of this audit. A preliminary draft was sent to Department officials and was discussed at an exit conference held on June 5, 2003. On June 11, 2003, we submitted a draft report to Department officials with a request for comments. We received a written response from the Department on June 23, 2003, in which it agreed with or stated it is compliance with the audit's recommendations.

The full text of the Department comments is included as an Addendum to this final report. (Note: A copy of SCORE's User Request Plan Summary, which was attached to the Department's response has not been included since it contains the names of individual users. It is available upon request.)

FINDINGS AND RECOMMENDATIONS

SCORE meets the overall goals as stated in the functional requirements and allows for future enhancements and upgrades. The Department followed a formal system development methodology when developing SCORE. Since SCORE was designed, developed, tested, and implemented by in-house employees, the Department did not incur any procurement costs and therefore was not required to use or comply with the City Charter and PPB rules when developing the system. In addition, SCORE has been integrated into the Department's Disaster Recovery Plan.

However, respondents to our user satisfaction survey revealed that 50 percent have had problems entering information into the system; 79 percent stated that SCORE is not user-friendly; and 69 percent would like to see changes made to SCORE. Moreover, the Department has not surveyed SCORE users to determine whether the system is adequately performing its intended functions. Finally, access by infrequent or "inactive" users is not adequately controlled.

These issues are discussed in the following sections of this report.

User Satisfaction Survey

Thirty of the 55 users surveyed responded, as follows:

- 15 users reported that they have had problems entering information into the system;
- 24 users stated that SCORE is not user-friendly; and
- 21 users reported that they would like to see changes made to SCORE.

The Department Did Not Survey SCORE Users

The Department has not surveyed SCORE users to determine whether the system is adequately performing its intended functions. Directive 18, §11.8, states:

"Periodic commentary from end users is an effective method that executive management can use for assessing information processing environment performance. Satisfaction reports from the end user community will frequently highlight common or recurring problems requiring executive management's attention. These reports are most useful if they flow to executive management independent of the information systems group."

However, as stated previously, the Department has never surveyed users to learn whether they are satisfied with the system. Moreover, as previously stated, our survey found that many of the data entry users were only somewhat happy with SCORE and feel that system modifications are necessary.

Other Issue: Inactive User Identifications (IDs)

The Department did not remove inactive users from the system. Of the 50 user IDs we examined, three had not been used to log onto SCORE since 2001, and 20 had not been used since 2002. These inactive users were not deactivated from the system. Directive 18, § 8.1.2, states, "Active password management includes deactivation of inactive user accounts."

Recommendations

The Department should:

1. Meet with system users to assess their needs and ensure that their concerns are addressed.

Agency Response: "DDC is in compliance with this recommendation. Since the implementation of SCORE, a business analyst has been assigned to assess user needs and ensure that necessary upgrades are made to the application. As a result, approximately 200 individual enhancements have been implemented. In addition, a recent outreach effort was performed to update the list of needed changes. Attached is a summary of these findings including a schedule for when the enhancements will be implemented."

2. Conduct periodic user surveys to discover common or recurring problems requiring executive management's attention. Management should address these problems immediately.

Agency Response: "DDC is in compliance with this recommendation. SCORE users were initially instructed to report any problem or 'bug' to the DDC's Business Analysis Unit. This unit maintains a list of all reported problems, recommends system changes and tests the application before a production version is released. Reported problems are reviewed immediately and given high priority. In addition, the Business Analysis Unit periodically outreaches to users to discover other issues that may not have been raised. DDC will continue these periodic surveys."

3. Determine why 23 user IDs have not been used to log onto SCORE since at least 2002. The accounts of inactive users that are not needed should be immediately terminated.

Agency Response: "DDC agrees with this recommendation. When SCORE was initially released all employees involved in the change order process were granted access to the system to help solicit feedback. However, some of these staff no longer update the application. DDC has reviewed SCORE's user list and has inactivated users that no longer need access."

4.   Develop and implement a procedure to terminate inactive user accounts.

__Agency Response:__ "DDC agrees with this recommendation. DDC will institute a policy where user accounts will be inactivated if there is no activity within 90 days."

DDC

City of New York   **Department of Design and Construction**

Kenneth Holden
Commissioner

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Deputy Commissioner
Technology & Policy Analysis

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June 20, 2003

Mr. Greg Brooks
Deputy Comptroller
Office of the Comptroller
1 Centre Street
New York, New York 10007

Re: NYC Comptroller's Draft Audit Report on
The Development and Implementation of the
Standardized Change Order Record-Contract
Overrun Request Entry (SCORE) System by the
Department of Design and Construction
7A03-138

Dear Mr. Brooks:

Thank you for the opportunity to respond to the draft audit on The Development and Implementation of
the Standardized Change Order Record-Contract Overrun Request Entry (SCORE) System report before
its public release. DDC found the draft audit report to be fair and was pleased that the auditors determined
"SCORE meets the overall goals as stated in the functional requirements and allows for future
enhancements and upgrades."

Listed below are the recommendations and DDC's responses.

Audit Recommendation # 1: The Department should meet with system users to assess their needs and
ensure that their concerns are addressed.

DDC's Response: DDC is in compliance with this recommendation. Since the implementation of
SCORE, a business analyst has been assigned to assess user needs and ensure that necessary upgrades are
made to the application. As a result, approximately 200 individual enhancements have been implemented.

In addition, a recent outreach effort was performed to update the list of needed changes. Attached is a summary of these findings including a schedule for when the enhancements will be implemented.

Audit Recommendation # 2: The Department should conduct periodic user surveys to discover common or recurring problems requiring executive management's attention. Management should address these problems immediately.

DDC's Response: DDC is in compliance with this recommendation. SCORE users were initially instructed to report any problem or "bug" to the DDC's Business Analysis Unit. This unit maintains a list of all reported problems, recommends system changes and tests the application before a production version is released. Reported problems are reviewed immediately and given high priority. In addition, the Business Analysis Unit periodically outreaches to users to discover other issues that may not have been raised. DDC will continue these periodic surveys.
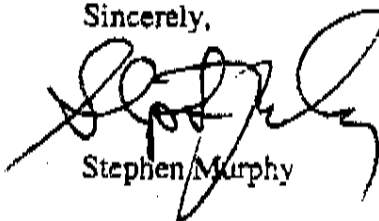
Audit Recommendation # 3: The Department should determine why 23 user IDs have not been used to log onto SCORE since at least 2002. The accounts of inactive users that are not needed should be immediately terminated.

DDC's Response: DDC agrees with this recommendation. When SCORE was initially released all employees involved in the change order process were granted access to the system to help solicit feedback. However, some of these staff no longer update the application. DDC has reviewed SCORE's user list and has inactivated users that no longer need access.

Audit Recommendation # 4: The Department should develop and implement a procedure to terminate inactive user accounts.

DDC's Response: DDC agrees with this recommendation. DDC will institute a policy where user accounts will be inactivated if there is no activity within 90 days.

Sincerely,

Stephen Murphy

c: K. Holden
   R. Laiserin
   R. Canabal
   R. Matti
   R. Bernstein