August 13, 2007

New York City Technology Steering Committee
75 Park Place - 9th Floor
New York, NY 10007

Technology Steering Committee members:

Mr. Daniel L. Doctoroff
Deputy Mayor for Economic Development
  and Rebuilding

Mr. Mark Page
Director
Office of Management and Budget

Mr. Paul J. Cosgrave
Commissioner
Department of Information Technology
  and Telecommunications

Mr. Jeffrey Kay
Director
Mayor's Office of Operations

Ms. Linda M. Gibbs
Deputy Mayor for Health and Human
  Services

Mr. Ed Skylar
Deputy Major for Administration

Mr. Dennis Walcott
Deputy Mayor for Education and
  Community Development

Re:  Report 2006-N-1

Dear Members of the Technology Steering Committee:

Pursuant to the State Comptroller's authority under Article V, Section 1, of the State Constitution; and Article III of the General Municipal Law, we have audited the manner in which New York City assures that City agencies have adequate business continuity and information technology disaster recovery plans and effective oversight of these plans.  Our audit covered the period February 1, 2005 to July 7, 2006.

A.    **Background**

Within the past few years, several natural disasters and other emergencies (hurricanes, the northeast power grid failure and the World Trade Center attacks) have highlighted the importance of business continuity and disaster recovery planning.  Business continuity planning helps ensure that vital services and agency operations can continue in the event of an emergency.

According to New York City directives, Federal guidelines and generally accepted practices, business continuity plans should have certain elements in them. For example, there should be a provision for various recovery scenarios - from minor problems such as a temporary power failure to loss of total capability - and step-by-step responses for each. Plans should also contain a listing of highest to lowest priority applications, required recovery times and expected performance norms.

In 1998, the Technology Steering Committee (Committee) was created by a Mayoral Executive Order to coordinate and oversee the City's technology strategies. The goal of the Committee is to develop state-of-the-art integrated information technology systems throughout City government. Among its responsibilities are to establish guidelines governing agency internal control environments and establishing a Business Continuity Sub-committee to report to the Committee and deal with contingency planning and disaster recovery issues. Committee members are the Commissioner of the Department of Information Technology and Telecommunications (DoITT), and the Directors of the Mayor's Offices of Operations and Management and Budget, or their designees. This committee was re-chartered on December 20, 2006, and the membership expanded to include five Deputy Mayors.

Until very recently, the City's Department of Investigation (DOI) was responsible for the design and implementation of a system of information security policies for the City and its agencies. To do this, DOI created the Citywide Information Security, Architecture, Formulation and Enforcement Unit (CISAFE). In 2003, CISAFE issued a Business Continuity Citywide Information Security Directive (Directive) to City agencies with guidelines for them to use in creating their own business continuity plans. The Directive made it clear that plans should "map out the agency's response to the very infrequent events of a magnitude that causes the loss of all, or major segments of, the City agency's operations over a sustained period." These DOI responsibilities have now been assumed by DoITT.

## B.    Audit Scope, Objective, and Methodology

Our audit, which covered the period February 1, 2005 to July 7, 2006, examined business continuity oversight by the Committee, and processes in place at selected agencies. The objective of our performance audit was to determine whether New York City agencies have adequate business continuity and information technology disaster recovery plans and effective oversight of these plans.

To accomplish our objective, we reviewed business continuity oversight by the Committee, surveyed 20 City agencies (See Exhibit A) and performed an in-depth review at four of the surveyed agencies (Administration for Children's Services, Department of Correction, Department of Design and Construction, and the Law Department) to determine how business continuity plans were documented, the adequacy of environmental controls, and backup policies and procedures. To determine if agencies were prepared we consulted CISAFE regulations, Control Objectives for Information and related Technology (COBIT), Federal Information System Controls Audit Manual (FISCAM), Generally Accepted Practices for Business Continuity Practitioners (drafted by the Disaster Recovery Journal and DRI International) and other industry standards. We also met with information technology employees, such as chief information officers, data center managers and backup technicians. We conducted observations of data centers and backup tape storage facilities.

We reviewed business continuity plans and related documents, backup policies and procedures and external audit reports.

We conducted our audit in accordance with generally accepted government auditing standards. Such standards require that we plan and perform our audit to adequately assess those operations, both of the Technology Steering Committee and of the selected agencies that are included in our audit scope. These standards also require that we understand the internal control structure of the Technology Steering Committee, and of the agencies reviewed and their compliance with those laws, rules, and regulations that are relevant to the City's operations included in our audit scope.

An audit also includes examining on a test basis, the evidence supporting transactions that were recorded in the accounting and operating records, and applying other auditing procedures that we consider necessary under the circumstances. An audit also includes assessing the estimates, judgments, and decisions made by management. We believe that our audit provides a reasonable basis for findings, conclusions, and recommendations.

As is our practice, we notified agency officials at the outset of the audit that we would request a representation letter in which agency management provides assurances, to the best of their knowledge, concerning the relevance, accuracy, and competence of the evidence provided to the auditors during the course of the audit. The representation letter is intended to confirm oral presentations made to the auditors and to reduce the likelihood of misunderstandings. Agency officials normally use the representation letter to assert that, to the best of their knowledge, all relevant financial and programmatic records and related data have been provided to the auditors. They affirm either that the agency has complied with all laws, rules, and regulations applicable to its operations that would have a significant effect on the operating practices being audited, or that any exceptions have been disclosed to the auditors. However, officials at the New York City Mayor's Office of Operations have informed us that, as a matter of policy, mayoral agency officials do not provide representation letters in connection with our audits. As a result of this policy we lack assurance from agency officials that all relevant information was provided to us during the audit.

In addition to being the State Auditor, the Comptroller performs certain other constitutionally and statutorily mandated duties as the chief fiscal officer of New York State. These include operating the State's accounting system; preparing the State's financial statements; and approving State contracts, refunds, and other payments. In addition, the Comptroller appoints members to certain boards, commissions and public authorities, some of whom have minority voting rights. These duties may be considered management functions for purposes of evaluating organizational independence under generally accepted government auditing standards. In our opinion, these functions do not affect our ability to conduct independent audits of program performance.

## C.    **Results of Audit**

Our audit identified findings and made recommendations for corrective actions on matters pertaining to business continuity and information technology disaster recovery planning for City agencies. These findings and recommendations were presented in detail to DoITT officials, acting on behalf of the Committee, throughout the audit. To further assure security of the City's data processing operations, these findings and recommendations are not included in this report.

Subsequent follow-up audits will be made on the detailed findings and recommendations. Comments of DoITT officials and Committee members have been considered in preparing this draft report. DoITT officials and Committee members agreed with our recommendations and indicated that they will take action to implement them. The response of the Technology Steering Committee members is included as Appendix A in this report.

### Recommendation

*The New York City Technology Steering Committee should implement the recommendations detailed during the audit for improving business continuity and information technology disaster recovery planning and oversight for City agencies.*

Within 90 days after final release of this report, we request that the Members of the Technology Steering Committee report to the State Comptroller advising what steps were taken to implement the recommendation contained herein and, if the recommendation was not implemented, the reasons therefor.

Major contributors to this report were Abe Fish, Keith Dickter, and Michael D'Amico.

We wish to thank the members of the Technology Steering Committee, and the management and staff of the Department of Information Technology and Telecommunications and the other agencies where we conducted audit testing for the courtesies extended to our auditors during this audit.

Very truly yours,


Brian Reilly
Audit Manager

**List of 20 Agencies Surveyed and Reviewed**
*(\* Indicates Agencies Visited for Review)*

\* Administration for Children's Services

Board of Standards and Appeals

Department of City Planning

Department of Probation

Department of Consumer Affairs

\* Department of Correction

\* Department of Design and Construction

Department of Health and Mental Hygiene

Department of Homeless Services

Department of Housing Preservation and Development

Department of Records and Information Services

Human Resources Administration

Department of Juvenile Justice

\* Law Department

Office of the Mayor

Office of Chief Medical Examiner

Office of Emergency Management

Department of Parks and Recreation

School Construction Authority

Taxi and Limousine Commission

# Technology Steering Committee

75 Park Place – 9ᵗʰ Floor
New York, NY 10007

February 23, 2007

**Daniel L. Doctoroff**

**Chairman**
**Deputy Mayor for**
**Economic Development**
**and Rebuilding**

**Committee Members:**

**Linda M. Gibbs**

Deputy Mayor for Health
and Human Services

**Ed Skyler**

Deputy Mayor for
Administration

**Dennis Walcott**

Deputy Mayor for Education
and Community
Development

**Paul J. Cosgrave**

City CIO and Commissioner
Department of Information
Technology and
Telecommunications

**Mark Page**

Director
Office of Management and
Budget

**Jeff Kay**

Director
Mayor's Office of
Operations

Mr. Brian Reilly
Audit Manager
Office of the State Comptroller
Division of State Services
State Audit Bureau
110 State Street., 11ᵗʰ Floor
Albany NY 12236

Re: Response to the New York State Comptroller Preliminary Audit Findings
Report 2006-N-1
Disaster Recovery and Business Continuity Practices at Selected New York City
Agencies – Public Release

Dear Mr. Reilly,

Thank you for the opportunity to comment on your draft audit findings pertaining
to Report 2006-N-1, Disaster Recovery and Business Continuity Practices at
Selected New York City Agencies on behalf of the Technology Steering
Committee.

First, let me begin by thanking you for recognizing the sensitive nature of the
technology matters contained within this report. Collectively, we share a
responsibility to the public to exercise due diligence in appropriately
differentiating between process-oriented IT readiness and the City's overall state
of emergency preparedness.

While we can never be too vigilant or too security conscious, the City has acted
aggressively to ensure that essential systems are identified, protected, and
available in the event of a critical incident. Indeed, we are mindful of your audit
findings and were already well in stride towards resolving them.

The City of New York has undergone a substantive review of its IT governance
structure. This initiative was one of my first priorities after being appointed
Commissioner of DoITT in June 2006. It encompasses both the role of the
Technology Steering Committee, as well as a strategic overview of key

**Appendix A**

security directives. Where necessary, organizational shifts for key security, disaster recovery, and business continuity responsibilities have been or are in the process of being enacted, as along with necessary updates and/or revisions to the existing documents.

The Technology Steering Committee, originally formed in 1998 under Executive Order 43, was re-chartered on December 20, 2006 under Executive Order 98. The Committee's membership was expanded to include five Deputy Mayors in addition to myself, the Director of OMB, and Director of the Mayors Office of Operations.

This re-purposing of the TSC was to set the City's IT strategic direction; establish criteria for evaluating and approving strategic, cross-agency IT projects; reviewing and approving Citywide IT policies and standards; and communicate Citywide IT directions and initiatives to stakeholders.

Several Councils have been established to support the TSC; one of these, is the Executive CIO Council (ECIO). Its membership consists of key agency CIO's and staff of the DoITT organization, and serves as a conduit between the TSC and City agencies. The Executive CIO Council is responsible for forming Subcommittees on specific, citywide IT issues with the goal of developing actionable recommendations. Among these, is the **Continuity of Operations Subcommittee** (COOP). Co-chaired by the Office of Emergency Management and DoITT, its mission is to focus specifically on agency continuity of business operations.

In effect, the City has established a different structure that will be more effective in guiding agencies to replicate best practices for disaster recovery and business continuity; moving away from old guidelines and practices that were no longer appropriate to our environment. Many of these critical changes were reviewed with your staff. Among them, is the establishment of a Continuity of Operations (COOP) program geared specifically for City agencies. Developed and facilitated by IBM, based on Federal COOP standards, this initiative will ensure that City agencies can provide vital services to the public during emergency situations. OEM is working with DOITT to provide a comprehensive resource that will enable agencies to develop agency specific COOP plans. The approach is to develop a template that City agencies can use to develop COOP plans for their essential functions. We will also provide a software tool that helps build, maintain and implement a COOP plan during crisis situations. The current pilot will conclude in the spring, be evaluated and then rolled out to agencies.

As part of the IT governance assessment, the respective roles of DOI and DoITT were also reviewed. This examination suggested that the functions of DoITT and DOI overlapped in the areas of IT security and policy formulation and in the oversight of City agency resources and plans. On August 16, 2006, a Memorandum of Understanding was executed by DoITT and DOI. Under the terms of this agreement, the responsibilities of both agencies were clarified and restructured. Both DoITT and DOI will continue to assist each other in the execution of their designated duties and all other agency functions as necessary.

The TSC is addressing the recommendations made by the State regarding improving business continuity and information technology disaster recovery planning as well as oversight for City agencies. DoITT will monitor those audit recommendations with which the agencies' have concurred.

In conclusion, the City of New York occupies a pre-eminent position in the information technology arena and we are unquestionably prepared to service our agencies' needs as well as those of the public in the event of an emergency. The Technology Steering Committee continues to review, validate, and enhance those vehicles which support our ability to maintain critical operations in times of crisis.

My staff and that of the TSC remain available to you to answer any additional questions you may have in regards to the contents of this letter. We ask that a copy of this letter be included when the final public audit is issued.

Thank you for your consideration. On behalf of the Technology Steering Committee, I remain,

Sincerely,

Paul J. Cosgrave
Commissioner
Department of Information Technology & Telecommunications

cc:    Daniel L. Doctoroff, TSC Chairman and Deputy Mayor for Economic Development and Rebuilding
Linda M. Gibbs, Deputy Mayor for Health and Human Services
Ed Skyler, Deputy Mayor for Administration
Dennis Walcott, Deputy Mayor for Education and Community Development
Mark Page, Director, Office of Management and Budget
Mr. Jeffrey Kay, Director, Mayor's Office of Operations