THE CITY OF SAN DIEGO

DATE: July 3, 2018

TO: Honorable Members of the Audit Committee

FROM: Eduardo Luna, City Auditor

SUBJECT: **Annual Citywide IT Risk Assessment and Audit Work Plan – Fiscal Year 2019**

Attached is the IT Risk Assessment and Work Plan proposed by the Office of the City Auditor for Fiscal Year 2019. The IT Audit Work Plan was developed by identifying and ranking the major risks associated with the City's significant information systems and corresponding processes. We designed our IT Audit work plan to address what we considered to be risk areas, while limiting the scope of work to what we can realistically accomplish with the IT staff resources available. For security reasons, the detailed risk scoring for each application was not included in this report.

Risk assessment is a process of systematically scoring (or rating) the relative impact of a variety of "risk factors." A risk factor is an observable or measurable indicator of conditions or events that could adversely affect the organization. Risk factors can measure inherent risks or organizational vulnerability.

Creating the IT Risk Assessment

The first step in creating the City's IT Risk Assessment model is to define the IT audit universe. The IT audit universe is a listing of all City information systems and corresponding processes both automated by those systems and supporting those systems. We utilized the IT Department's application portfolio and accompanying information to identify the known active information systems in the City's network.

The next step in creating the risk assessment model was to identify and rank the major risks associated with each of the City's information systems and corresponding processes. To achieve this, the Auditors requested information from the IT Department on the information system and network portfolios regarding department, application, process and various risk information to perform a risk assessment. The assessment utilized the eight measurable risk factors outlined below:

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Auditor Ranking

1) Inherent Sensitivity of Application Data
   a. Personal Identifiable Information
   b. Financial Information
   c. Sensitive Information
2) IT Process Audit Risk Scores Compiled from Previous IT Audits
3) Significance of Major Modifications to the IT Landscape
4) Core IT Service Providers Independent Auditor Attestation Assessment

IT Department Ranking

5) Business Alignment
6) Technical Architecture
7) Supportability

Department Criticality Ranking

8) Mission Criticality of Applications
   a. Mission Critical
   b. Business Critical
   c. Standard Business Operational

Scoring the IT Universe

The score assignment relates to the impact to the City if an application or network service were compromised or hacked and the corresponding processes they supported were compromised as a result. For example, the City Library rated their catalogue system as mission critical to their operations; however, the City would not experience significant risk if this system were hacked based on the data contained in the system. Conversely, the impact of the data theft from the City's financial and human capital system could be incredibly damaging and open the City to costly litigation if it contained personal information such as social security numbers, while the business criticality may be very low.

The final step in completing the Citywide IT Risk Assessment was to calculate the total risk score for each application and network service in order of highest risk score to the lowest by combining the risks scores from the three identified categories to identify the highest risk systems for our review.

During Fiscal Year 2018, the IT staff was asked to work with Public Utilities to obtain the necessary data and conduct data analysis to support the Public Utilities - Water Billing Audit. As a result, Fiscal Year 2018 IT audit workplan was not completed and will have three carry over audits as listed. In addition, we have two new planned IT Audits as described below.

Carry Over IT Audits:

1) Accela Implementation Audit: Estimated 140 audit hours to complete. *Reporting Phase*

The scope of this audit is to ensure Accela is configured to mitigate the risks we have identified and to make sure proper system implementation procedures are followed. Due to DSD's new project plan of using a phased implementation for the remainder of this project through Calendar Year 2020, this report will address findings to date and identify the recommendations addressed by this implementation through FY2018 as well as those remaining to be addressed.

2) Security Audit of Cityhub and Supporting Infrastructure: Estimated 400 hours to complete. *Planning Phase*

The tentative objective is to determine whether Cityhub data is adequately secured through the application and supporting infrastructure as a data repository for department sensitive information.

3) IT Audit of Disaster Recovery Preparedness: Estimated 800 hours. *Not yet started*

The tentative objective is to assess the IT Department's Disaster Recovery plan to ensure that it has identified all key applications to be restored in the event of a disaster and has adequate definitions to restore them in a timely manner based on the process risk the application supports.
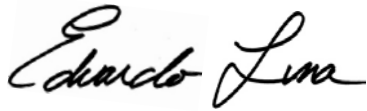
Planned IT Audits:

1) IT Audit of Network Perimeter Controls:

The tentative objective of this IT Audit is to assess the City's network perimeter controls. Estimated 820 audit hours.

2) IT Audit of Citywide Sensitive Data Encryption Standards and Data Classification:

The tentative objective of this IT Audit is to assess the maturity of the City's sensitive data encryption and data classification process. Estimated 640 audit hours.

Respectfully submitted,

Eduardo Luna
City Auditor

cc: Honorable Mayor Kevin Faulconer
        Honorable Members of the City Council
        Kris Michell, Chief Operating Officer
        Stacey LoMedico, Assistant Chief Operating Officer
        Jessica Lawrence, Director of Council Affairs
        Mara Elliott, City Attorney
        Andrea Tevlin, Independent Budget Analyst
        Jonathan Behnke, Chief Information Officer