File No. 110489

Committee Item No. **8**
Board Item No. **10**

COMMITTEE/BOARD OF SUPERVISORS
AGENDA PACKET CONTENTS LIST

Committee: <u>Budget and Finance FULL-Committee</u> Date: <u>June 15, 2011</u>

Board of Supervisors Meeting Date **June 21, 2011**

Cmte Board

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Completed by: <u>Victor Young</u> Date: <u>June 10, 2011</u>
Completed by: <u>Victor Young</u> Date: <u>6-16-11</u>

An asterisked item represents the cover sheet to a document that exceeds 25 pages. The complete document is in the file.

1 [Five-Year Information and Communication Technology Plan - FYs 2011-2012 through 2015-
2 2016]

3 **Resolution adopting the City's Five-Year Information and Communication Technology**

4 **Plan for FYs 2011-2012 through 2015-2016 pursuant to San Francisco Administrative**

5 **Code Section 22A.6.**

6

7   WHEREAS, San Francisco Administrative Code Section 22A.6 requires the Committee

8 on Information and Communication Technology (COIT) to submit and the Mayor and the

9 Board of Supervisors to review, amend and adopt a five-year ICT plan on an annual basis;

10 and

11   WHEREAS, COIT reviewed and unanimously approved the City's first five-year ICT

12 plan at its meeting held on May 19, 2011; and

13   WHEREAS, COIT-approved ICT plan outlines key foundational initiatives the City will

14 focus on in the next five years, outlines a financial strategy to fund these technology needs

15 and lists the currently planned technology projects for each department over the next five

16 years; and

17   WHEREAS, The plan utilizes the overarching strategies of consolidation,

18 standardization and simplification in order to align available resources and the cost of new ICT

19 projects over the next five years; now therefore be it

20   RESOLVED, The Board of Supervisors adopts COIT's proposed information and

21 communications technology plan, with such amendments and revisions as the Board deems

22 appropriate, as the City's five-year ICT plan for Fiscal Years 2011-2012 through 2015-2016,

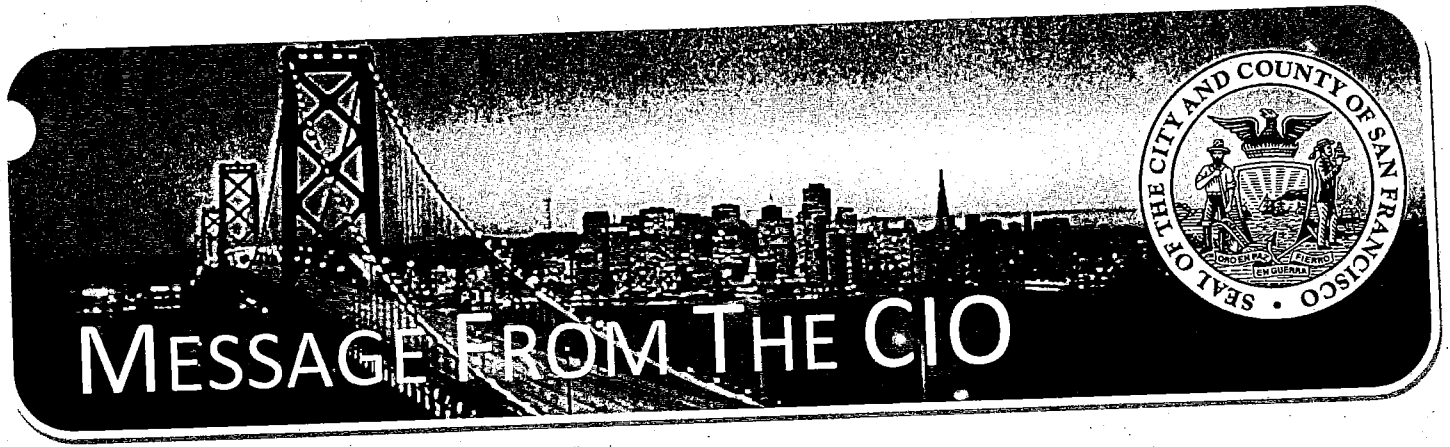23 as provided in San Francisco Administrative Code Section 22A.6.

24

25
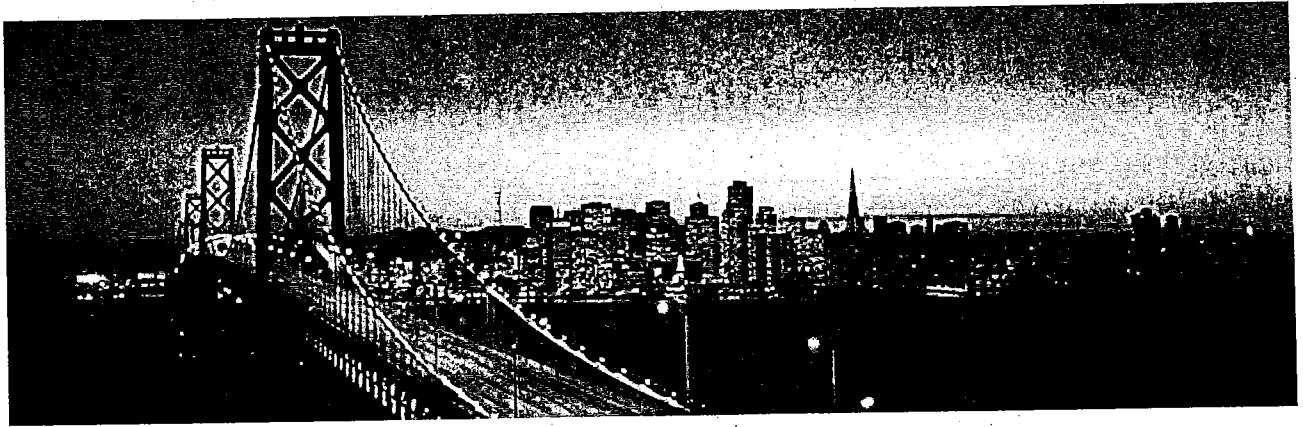
City & County of San Francisco

Information and Communication Technology Plan
Moving from Vision to Results
Fiscal Years 2011-12 through 2015-16

Table of Contents

Welcome to the first City and County of San Francisco (City's) Information and Communication Technology (ICT) Plan (Plan) that focuses the City's resources on the issues of security, access, infrastructure, communication and efficient computing.

As required by the City's Administrative Code, this Plan seeks to better align City ICT resources with the City's goals and objectives. Together with departments, business partners and industry advisors, I have been leading a process to better plan, optimize and improve government ICT operations. San Francisco has an outstanding opportunity to lead government transformation through the efficient and effective use of technology and innovative thinking.

The Committee on Information Technology (COIT) is the City's ICT governing body. The purpose of COIT is to provide guidance and oversight to all City departments and agencies in the implementation and operation of information and communication technology to ensure a consistent high level of service to customers. COIT is composed of five permanent members (the Mayor, the President of the Board of Supervisors, the Controller, the City Administrator and the CIO) and eight department heads distributed among functional areas of City government. Beginning in 2011, one of COIT's primary duties is to submit a five-year ICT Plan on an annual basis to the Mayor and the Board of Supervisors.

The City enjoys an abundance of ICT talent, organizations and political support. However, we face twin challenges of budget shortfalls and aging ICT systems. The City cannot afford to continue performing its operations and maintenance in departmental silos as this will only magnify the challenges that face us. Getting the most out of ICT for the City means making tough transformational decisions, proactively managing ICT projects, and leveraging the benefits of shared services and cross-departmental partnerships.

Embedded in our first Plan are departmental projects, Major Service Area strategies, new approaches to close the historic ICT budget gap and innovative ideas to improve service. Our goal is to strategically align the organization to better deliver these services as effectively as possible while acknowledging that the current budget shortfall presents significant challenges. Safe, secure and accessible networks and systems are foundational underpinnings as we continue the modernization of legacy systems and our goal of enabling citizens to conduct business online rather than in line.

It has been said that times of uncertainty create leadership opportunity. That could never be truer for the City relative to its transformation of ICT over the next five years.

Jon Walton
Acting Chief Information Officer

I. VISION
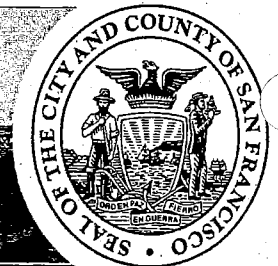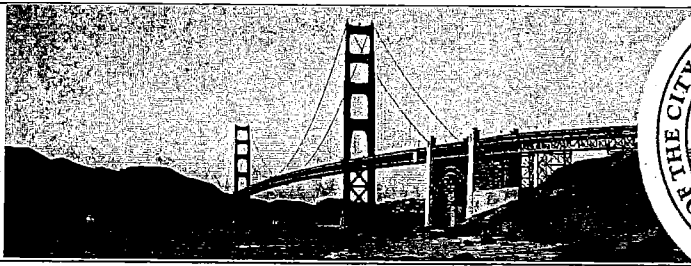
The ICT vision for City government emerges from a technology vision of a connected City. In a connected City, information is appropriately applied to the benefit of the entire community, including its' residents, businesses, community based organizations, government operations and visitors.

Secure, innovative and accessible systems are the foundation to success.

The first part of the vision starts with a robust, ubiquitous and unfettered broadband platform. At the heart of the City's ICT operations, this platform depends upon low-cost, high-bandwidth fiber optic cabling connecting the City's buildings and infrastructure to secure and innovative operational systems. In turn, this platform is being rapidly expanded to allow free wireless connectivity to employees, residents, and visitors via wireless technology thereby enabling a constituent-centric government that aligns municipal services with resident needs.

Modernization of the City's infrastructure (data centers, networks, telecommunications, wireless systems, etc.) is needed to ensure this part of the vision is realized. The infrastructure of the City has long been neglected and, while fragments have been improved within individual departments, the core infrastructure has been managed in a fragmented approach. To improve in this area the City will need to proactively pursue industry standard ideas like data center consolidation, high capacity networks and virtualized servers. This approach will enable the City to continue to make improvements in key infrastructure while simultaneously meeting budget reduction targets.

In addition to accessible networked systems, the Plan envisions that these systems will also be secure and disaster resilient. While security adds a level of complexity to the resulting systems the need to ensure the security of systems, and privacy of information, is key to the successful operations of the systems. Given the probability of disaster in the region and the need of modern governments to use technology to manage disasters, the vision of the Plan is to ensure disaster resiliency via a mixture of virtualization, redundant networks, robust data centers, cloud based applications and proactive business continuity planning.

Innovative Applications + Data Integration + Anytime Anywhere Access = Real Time Decision Making

Another part of the vision focuses on transformation of the City's ICT resources through business intelligence, web-enabled applications and anytime-anywhere access. Access to information promotes the City's well-being by enabling day-to-day decision making, enhancing learning and cultural opportunities, and engaging residents in civic participation.

With the underpinnings of citywide system access, innovative solutions will capture business intelligence, provide web-enabled applications, and assure data integration. The facilities the City operates transform into intelligent

buildings, roads, transit systems and water systems. Data is made available in public, useable formats. City services provide anytime-anywhere access to data, enabling real time decision-making. By embracing open source technologies, open data initiatives and public/private participation, the City will be able to continue to create innovative applications based on customer demand.

The ICT Plan emphasis is on solutions with the highest or most transformational impact. Working within budgetary and workforce constraints, the Plan embraces ICT industry trends including:

- Social trends such as social computing and networking
- Public and private cloud computing technology
- Crowd sourcing and centers of excellence, and
- Unified communications, location-aware applications and open source

Over the next five years, City decision makers, in concert with the Committee on Information Technology (COIT) and other stakeholders, will determine the specific technologies to adopt for implementation. Some of the technology adoptions will occur in the short range (less than two years) while others are further out (two to five years).
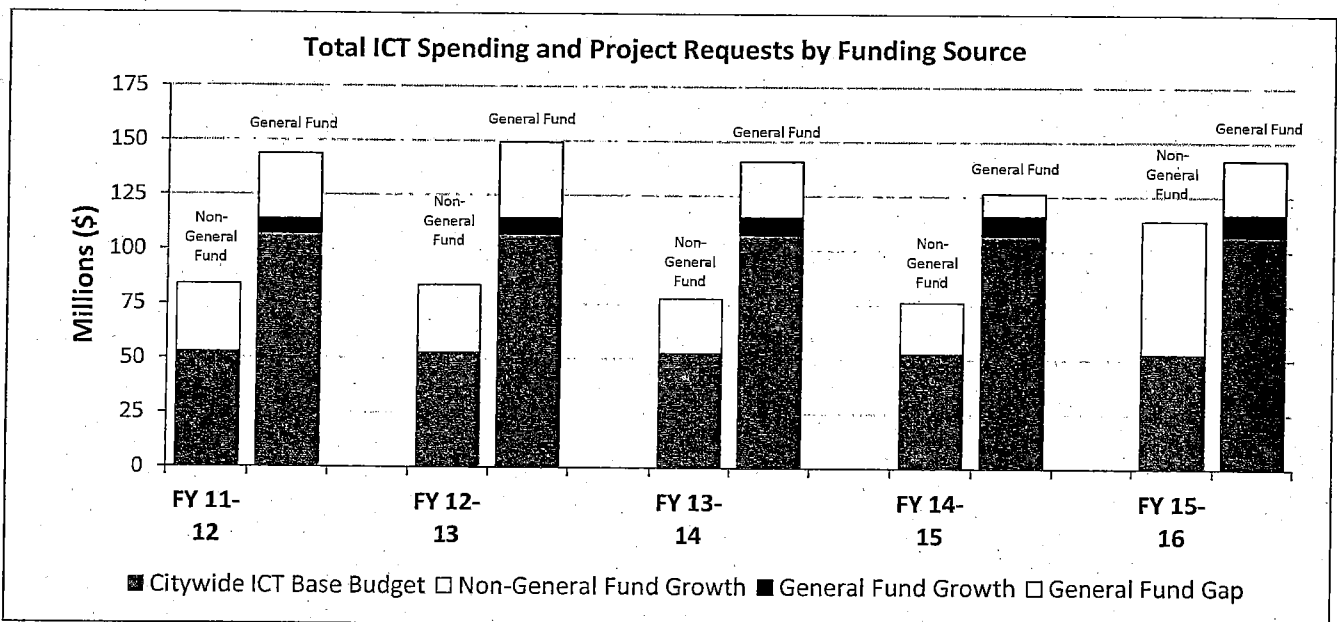
The success of the ICT Plan and the associated citywide benefits are predicated on the commitment of all participating ICT organizations working to balance daily departmental operations while embracing citywide transformational initiatives.

II. ALIGNMENT OF ICT INVESTMENTS

The City is facing unprecedented fiscal challenges, due to reductions from State and Federal sources, losses to local fee and tax revenue and significant increases to the cost of and demand for City services. The Controller estimates that the deficits in the City's budget will grow from $283 million in FY 2011-12 to over $829 million over the subsequent four years. In order to provide adequate and intelligent business solutions to meet the service demands, the City needs to focus and align its ICT investments to maximize efficiency and effectiveness, and reduce costs. This Plan strives to define the business objectives of each major service area (MSA) within the City and apply ICT investment strategies that will promote and focus its ICT solutions to meet these challenges. The FY 2011-12 budget instructions to departments amplify the message to prioritize programs, and apply functional consolidation as well as restructure programs in order to reduce cost and improve service delivery.

The ICT Plan seeks to find alignment between available resources and the cost of new ICT projects over the next five years. As depicted on the graph below, the City's current and future budget allocations are insufficient to meet the demand. Numbers represented here and throughout the remainder of this Plan are subject to change based on final Board and Mayoral approval.

Total ICT Spending and Project Requests by Funding Source

Graph legend: Citywide ICT Base Budget / Non-General Fund Growth / General Fund Growth / General Fund Gap. Y-axis: Millions ($). X-axis: FY 11-12, FY 12-13, FY 13-14, FY 14-15, FY 15-16.

The City currently invests $160 million annually in Base ICT services. Additionally, the City has identified a total of $338.4 million for funding in the Plan to meet identified demand over the next five years, of which $172.4 million are self-supported projects proposed to be funded through Non-General Fund sources. A total of $166.0 million of General Fund Supported projects were identified, though only $40.3 million in General Fund Support is assumed to be available, though this Plan identifies alternative funding sources. The graph above demonstrates annual gap of General Fund sources over the five year period.

Based on dwindling resources, increased demand for ICT projects, mayoral directives and recent COIT policy, this Plan presents the following Investment Strategies for 2011-2016:

1. **Consolidation** -- An approach to optimizing technologies to achieve cost savings, improve performance and mitigate risk. This approach involves planning, optimization and physical migration of systems and facilities. The data center consolidation project and email consolidation project are examples that fulfill this strategy.

2. **Standardization** -- The process of establishing a technical standard, which could be a standard specification, standard test method, standard definition, standard procedure (or practice). The development and implementation of concepts, procedures and designs will achieve and maintain interoperability. The eMerge project which provides standard platform and applications to maintain citywide human resources, position management, time reporting, payroll and benefits administration functions represents this strategy.

3. **Simplification** -- Performance of processes involving a service or product in a manner that is least expensive in terms of effort, money and time, and that is consistent with the objectives of the City. Enterprise agreements and procurement consolidation for ICT services and equipment are examples of this strategy.

The following graphic is intended to visually depict the reinforcing aspects of the ICT Investment Strategies.
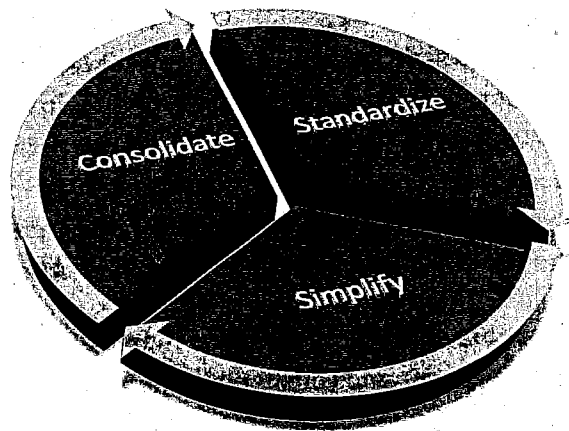
III. STRATEGIC AND FOUNDATIONAL INITIATIVES
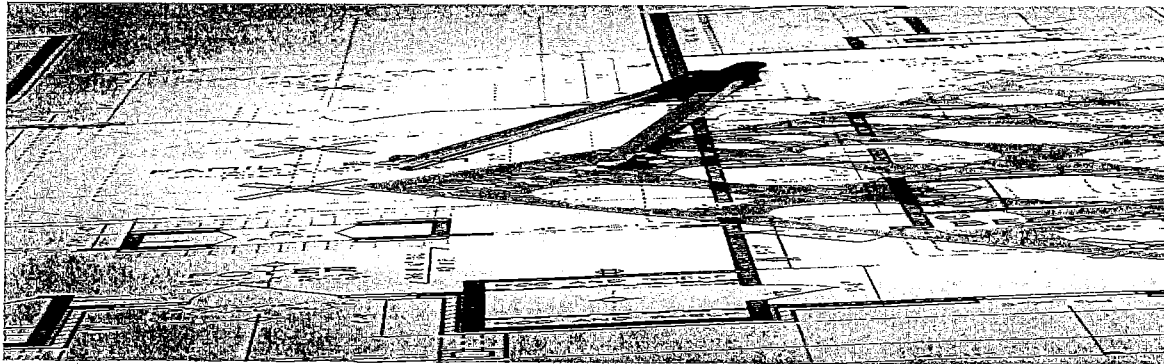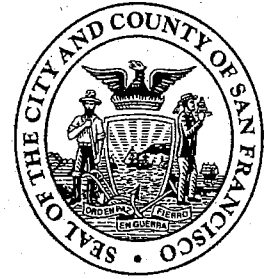
By recognizing the business value of technology, the City has the opportunity to improve the delivery of its services and better allocate scarce resources. Experience is already illustrating that through the appropriate use of technology, the impact of financial constriction can be mitigated. Investment in technology can become a strategic empowerment tool rather than a standard "cost cutting" tactic.

The common realization is that the current fragmented, decentralized approach to the City's technology infrastructure and operations cannot be sustained. The current fiscal crisis has laid bare the fractured state of the City's approach to ICT and shown the necessity for a more rational approach for applying technology to solve business needs and create systemic savings through operational efficiencies. These are accomplished by leveraging common application functionality, where appropriate, across the City, and through the development of a citywide Information and Communication Technology (ICT) foundational backbone.

Through the collective engagement of departmental CIOs and IT managers and the application of common prioritization criteria, the following Strategic and Foundational Initiatives were selected as they either enabled better service delivery citywide or created the potential for significant citywide savings:

1. Open SF: Open Data Initiative
2. Enterprise Applications
3. Data Center Consolidation and Virtualization
4. Citywide Broadband and Wi-Fi Access
5. Enterprise Agreements
6. Citywide Security Plan
7. Voice over IP (VoIP) and Landline Reductions
8. IT Staff Support in Shared Buildings
9. Reproduction and Mail Consolidation
10. Dark Fiber and Tower Leasing

1. OPEN SF: OPEN DATA INITIATIVE

OpenSF
Experiments in government transparency
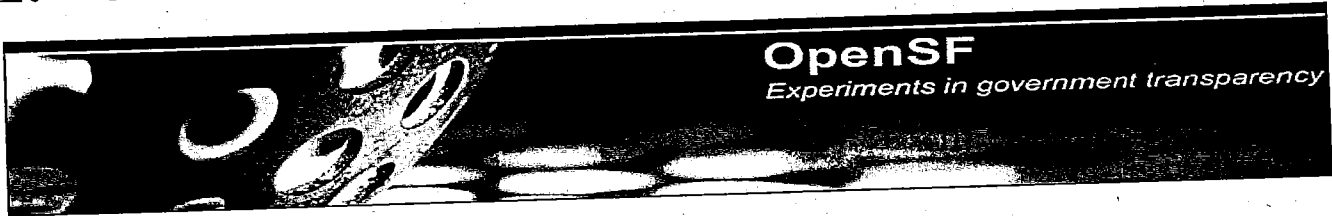
Description

The City has been recognized as a leader among local governments in the creation and deployment of open data applications. By providing such a "warehouse" of raw and machine-readable data, the Department of Technology (DT) has led to a new era of government transparency and developer innovation.

Access to this raw data has sparked development of innovative new "mash-ups" or combinations of various datasets--applications that bring tremendous benefits to our residents. DT encourages this application development by sponsoring community events and by providing an "Application Showcase" on the DataSF.org site where applications that utilize City data are highlighted.

In an effort to foster more civic collaboration and connectivity with constituents, DT launched a first-of-its-kind application that allows citizens to access the City's 311 Call Center through Twitter. Instead of making a phone call, members of the public can send a tweet to alert the City about a pothole, or simply find out about the City's green initiatives.

Rationale

Greater transparency enabled through unfettered access to "raw data" facilitates more timely communication between the City and those wanting information. While traditional vehicles of requesting and getting information about the City remain, those choosing to interact with the City via the "warehouse" will not only get a more responsive - instantaneous – answer to a question, it will also enable a "self service" of sorts with regard to questions, follow-up thoughts and analysis. It will also enable them to comment, complain and make real-time requests directly to the responsible agency via the Internet.

Results Anticipated

By giving our developer community access to City information, the City anticipates the following benefits:

- Improved accessibility of City services through new channels
    - Mobile devices
    - Facebook
    - Twitter
- Emerging marketplace of applications that deliver City information and services
- Reduction in costs
    - Less demand for City operated service channels
    - Fewer City resources invested in software acquisition or development

2. ENTERPRISE APPLICATIONS

The term Enterprise Application or Enterprise Software describes a collection of computer programs with common business applications or tools for supporting the entire organization. This broad-based software is intended to solve an enterprise-wide problem rather than a departmental problem.

2.1 Email and Active Directory

Description

In February 2009, COIT directed the Department of Technology to migrate all email services to a single hosted Microsoft Exchange platform from the existing multiple email installations across the City. This is only one example of an Enterprise Application.

Rationale

The City currently has seven separate email installations distributed across the City. These installations are a mixture of Lotus Notes and Microsoft Exchange. Except for the Lotus Notes installation managed by the Department of Technology, each of these separate email systems is operated for the use of a single department with associated redundant costs to maintain and operate each system. Additionally, there is an associated overhead of maintaining ongoing synchronization of these systems and technical challenges collaborating across these separate systems. Finally, none of the existing systems has a robust business continuity plan so that in the case of a localized or large scale disaster the email systems of the City would be severely impacted. The migration to the new system will result in more integrated, disaster resilient and cost-efficient email services for City employees, and will allow the City to provide new services that will enhance flexibility and productivity. Core to the ability to implement this system (and support other citywide systems such as the new Human Resources & Payroll system) the City is implementing a citywide federated Active Directory solution.
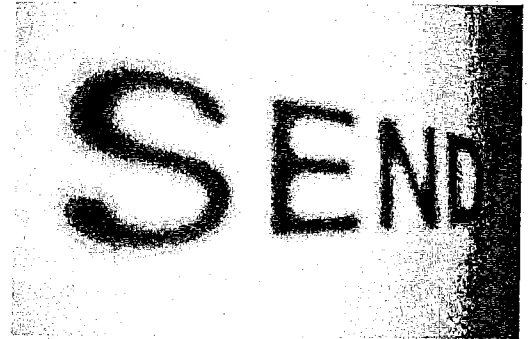
A $2M budget was approved for this effort. This Email migration to hosted Exchange is one of the critical tasks in support of the City's overall ICT Consolidation Project. Roughly 23,000 City users are planned to convert to Hosted Microsoft Exchange.

Results Anticipated

By implementing a single citywide email system, the City anticipates the following benefits:

- Decreased costs due to eliminate of redundant systems
- Robust disaster resiliency
- Enhanced collaboration functionality
- A more streamlined email system

2.2 Project eMerge

Description

Project eMerge will provide improved Human Resources, Benefits Administration and Payroll services to the active, retired and future workforce of the City and County of San Francisco (CCSF) through the implementation of a new integrated Human Capital Management (HCM) system.

Existing, centralized and decentralized processes and tools will be replaced with one consolidated, citywide system utilizing PeopleSoft 9.0.

Rationale

Project eMerge is an investment in CCSF's most valuable asset: its people. Project eMerge will help our people by bringing the data to the people that own and use it, providing critical information to the Department of Emergency Management during an emergency, and improving the employee working experience.

Results Anticipated

By implementing Project eMerge, the City anticipates the following benefits:

- Improved performance
  - Replacing outmoded applications
  - Improving manual and redundant business processes and systems
  - Reducing costs
  - Improving efficiency
- Cross-functional and citywide coordination required to meet the needs of our 21st century workforce
- Improved systems
  - Integrating core business systems
  - Establishing secure technical environments
  - Instilling discipline and leveraging best practices in executing citywide human resources, timekeeping, payroll and benefit administration processes.
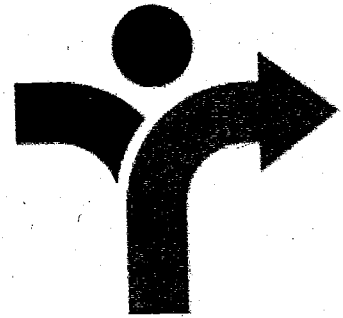
3. DATA CENTER CONSOLIDATION AND VIRTUALIZATION

Description

Consolidation of data centers around the City will reduce square footage utilized to house equipment, reduce underutilized equipment through virtualization, and improve data center resiliency and disaster readiness.

Rationale

The City and County of San Francisco (City) currently houses its information technology (IT) equipment (servers, storage and mainframe computers) in a number of data centers, data rooms and data closets. This dispersed approach leads to duplicated support costs and greater exposure to risks such as power failures, excessive heat and tampering.

The purpose of the Data Center Consolidation Project is to house the equipment that hosts the City's mission critical ICT systems in fewer, more robust and more secure environments and thereby increase the efficiency and reliability of City services that depend on these systems. Additionally, by consolidating equipment into fewer physical sites the City will also have the opportunity to reduce the total number of physical servers, reduce space, improve equipment utilization, and share infrastructure services such as physical security, fire suppression and cooling. Furthermore, this initiative has been expanded to also include replacement of traditional PCs under desktops with Virtual PCs managed from the consolidated data centers.

The Committee on Information Technology (COIT) directed the CIO to present a specific plan for implementing data center consolidation. The CIO consulted with citywide technology leaders and presented a final plan to COIT on December 9, 2010.

Results Anticipated

By consolidating data centers, the City anticipates the following benefits:

- Reduction in the number of data centers
- Improved facilities (Tier 2 minimum)
- Reduction in total racks, physical servers and associated support costs
- Improved security and disaster readiness
- Increased server utilization and management of end user computing environment
- Standardized user environments and hardware
- Increased security through better management and control
- Effective and portable Disaster Ready solution
- Location Aware Virtual Desktops for high security environments
- Lower cost of ownership for equipment and software
- Reduced power consumption, as Virtual PCs consume about 50 percent less power than regular PCs
- Decreased staff support time per device
- Centralized deployment, repair and maintenance of virtual desktops
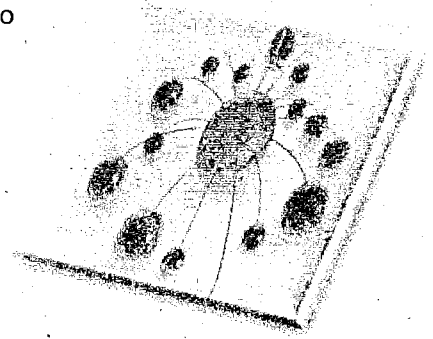
4. CITYWIDE BROADBAND AND WI-FI ACCESS

Description

The City will expand broadband and Wi-Fi capacity for public services and underserved members of the public.

Rationale

Government Services

The City can reduce its operational costs and increase reliability by migrating from leased circuits to City owned facilities. Data center consolidation, new video based services from telemedicine to security monitoring, emerging reliance on cloud computing and public demand for interactive bandwidth intensive City services will lead to greatly increased demand for reliable bandwidth.

Broadband Adoption Among Underserved

While the City has relatively high rate of broadband adoption, 67 percent citywide, segments of the population such as seniors and low income households have low rates of broadband adoption, 42 percent and 41 percent respectively. On November 16, 2010, the Board of Supervisors adopted Resolution 554-10, which set a goal to achieve broadband Internet access for 90 percent of San Franciscans by 2015, with a focus on connecting seniors and low income households. Broadband adoption can be addressed by focusing outreach and training on specific underserved populations such as seniors and adults with disabilities, and be engaging the public as creators and collaborators in community generated digital media.

Results Anticipated

By expanding broadband and Wi-Fi capacity, the City anticipates the following benefits:

- Present and future bandwidth required by departments
- Savings as a result of replacing leased circuits
- Adoption of new technologies and applications by departments through facilitated effort
- Increased reliability and timely service response
- Trainings for 25,000 residents through Federal Broadband Technology Opportunities Program Grant and creation of 5,000 new subscribers by September 2013
- Ninety percent broadband adoption by 2015

5. ENTERPRISE AGREEMENTS (EA)

Description

The City will develop and implement a process and procedures for consolidating information and communication technology (ICT) EA contracts. This will allow for predictable requirements and the best outcome of technology procurement for the City.

- Hardware, software and professional services in one agreement
- Adoption of aggregated purchasing and strategic sourcing
- Effectively executed City public policy goals related to purchasing
- Centralized customer access
- Citywide transparency with a high degree of customer service

Rationale

A Board of Supervisors audit in 2007 recommends that the Department of Technology "determine the most appropriate technological offerings of any enterprise agreement, and then negotiate lower costs by aggregating all City dept's requests." This initiative will maximize the value the City receives on spending. In addition, this will create a standardization of technology and reduce redundant systems while inducing a competitive marketplace with City vendors. Another outcome will be a common and streamlined signature process, aligned with best practices in contract administration. This will also bring standardization to the proposal evaluation process, and create a repository of recurring specifications.

Results Anticipated

By improving procurement processes and implementing enterprise agreements, the City anticipates the following benefits:

- Maximized value the City receives on spending
- Reduced future costs
- Elimination of threshold for buying
- Increased purchase authority
- Assured integrity of the purchasing process -- honest and fair
- Delegation of contract authority
- Advanced acquisition planning

6. CITYWIDE SECURITY PLAN

Description

A comprehensive Enterprise (citywide) security plan is underway that is tied to the ISO 27001 and ISC^2 best security practices.

Rationale

Several recent incidents in security lapses have magnified the importance of establishing a comprehensive security plan. Not all departments have the resources or skills to conduct a security review/plan for their departments. A citywide plan is critical to the overall umbrella of security needed by departments.

The Board of Supervisors audit in 2007 recommends that COIT establish policies and standards for the following areas:

- Development of a risk assessment plan for each City department;
- Recommended annual funding for City departments IT security procedures;
- Establishment of criteria for City departments' IT security policies and procedures;
- Definition of job skills and functions necessary to manage departmental IT security programs; and
- Development of formal decision making guidelines for City departments that share IT systems.

This effort will increase computing and network performance of Enterprise services by reducing inappropriate usage, providing better response to security incidents and reduce the City's exposure to security threats.

Results Anticipated

By improving procurement processes and implementing enterprise agreements, the City anticipates the following benefits:

- Significant reduction in exposure to "unwanted" incursions
- Increased the confidentiality, integrity and availability of enterprise networks and computing platforms
- Reduction of "security holes" in citywide network topology to an acceptable risk level
- Cost effective expenditure on integrated and standardized security monitoring and enablement tools
- Internal, on-going and coordinated IT security skill capability and capacity improvements
- Creation of a sustainable security program with measurable results
- Increased response to security threats in a reduced timeframe
- Increased employee awareness of security policies and practices citywide
- Creation of certified and competent Enterprise Security Team
- Creation of a more controlled computing environment for the Enterprise
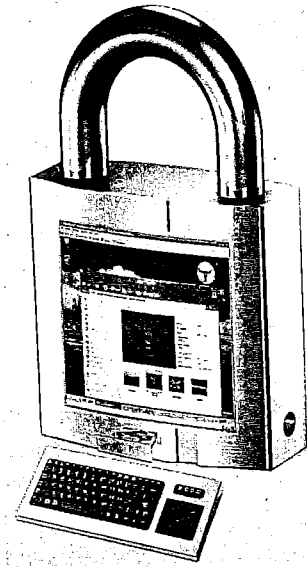
7. VOICE OVER IP AND LANDLINE REDUCTIONS

Description

Voice over Internet Protocol (VoIP) is technology that allows telephone calls, faxes and videoconferencing to be made over computer networks such as the Internet rather than the public switched telephone network (PSTN). There are three types of VoIP tools that are commonly used: IP Phones, Software VoIP and Mobile and Integrated VoIP. Of all the software VoIP tools that exist, Skype is probably the most easily identifiable.
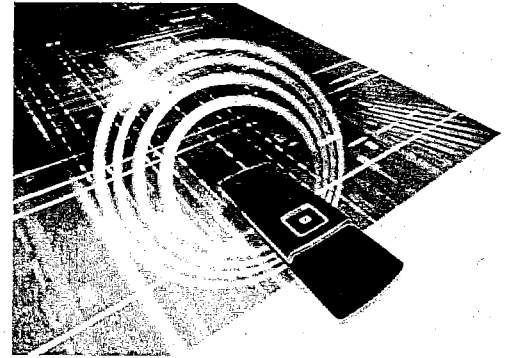
Rationale

The current telecommunications infrastructure in the City is costly to implement and maintain with over 100 telephone exchanges (PBXs) installed across the City. A consolidated VoIP solution will enable better service at a lower cost per user. Additionally, VoIP technology provides a disaster resilient system so that users can access "soft phones" from anywhere after a local disaster.

Several City departments are already utilizing VoIP technology:

- Recreation and Park

  - Ten sites, two sites coming up

- Department of Technology

  - VoIP Pilot underway: Infrastructure is at 200 Paul
  - Designing Fiberwan to support citywide VoIP
  - High level Business Case for citywide implementation of VoIP under development

- Public Utilities Commission

  - VoIP at construction trailers and underway to O'Shaughnessy
  - VoIP for 525 Golden Gate under design

- Department of Public Health

  - Hybrid VoIP system at Laguna Honda Hospital
  - Plans a full VoIP system at San Francisco General Hospital

- Airport

  - Some VoIP technology in use

Results Anticipated

By implementing VoIP solutions, the City anticipates the following benefits:

- Reduced infrastructure maintenance costs
- Robust disaster resiliency
- Improved telephone service at a lower cost to the City

8. IT STAFF SUPPORT IN SHARED BUILDINGS

Description

Departments that share facilities across the City can share IT desktop and network support staff within the shared facilities.

Rationale

Many City facilities have multiple departments as tenants located in different offices and different floors of the buildings. Each of the departments typically has its own dedicated IT staff that provide PC desktop support and network support for their own departments in the shared facility. This initiative focuses on having the departments that share facilities combine their IT Desktop and Network support staff so that they utilize a consolidated staffing model to provide these types of services.

Results Anticipated

By sharing and consolidating IT Desktop and Network support staff in shared facilities, the City anticipates the following benefits:

- Staff efficiencies by eliminating the multiple groups of dedicated staff to provide basic user support services to the workers in the shared spaces

- Concentration of expertise in shared facilities staffing: less money will be spent on "general technology" training and more spent on deepening IT skill sets

- Faster resolution of common technology problems, due to leveraging of resolution knowledge of shared facilities staff across departments. In some cases, shared staff will proactively resolve IT issues before they manifest into system performance problems

9. REPRODUCTION AND MAIL CONSOLIDATION

Description

This initiative is focused on consolidation of Reproduction, Mail and Delivery Service Centers across the City.

Rationale

The City operates multiple Reproduction and Mail service centers. The smaller shops provide limited service to their departments, but are not the most cost effective approach for these operations. By consolidating functions and services across all departments the City will achieve savings and efficiency.

Results Anticipated

The consolidation of Reproduction and Mail Service Centers will result in the following savings:

- Fewer physical facilities and associated reductions in management, power and maintenance
- Less, better utilized equipment, resulting in lower production costs, fewer maintenance contracts and environmental issues
- Fewer delivery vehicles and elimination of overlapping deliveries
- Most efficient use of consolidated staff

10. DARK FIBER AND TOWER LEASING

Description

Fiber optic communications operate by transmitting light through strands of glass. The thickness of hair fiber is "lit" when network equipment at either end of the fiber transmits and receives light, and "dark" when installed but not used. Under a "Dark Fiber" lease, the customer "lights" the fiber, rather than the owner of the fiber. Under the proposed arrangement, the Department of Technology would install the fiber strands and be responsible for repair and maintenance; and the customers, other public agencies or private businesses, would be responsible for installing and operating the network equipment.

Rationale

San Francisco is experiencing a growing demand for physical locations—radio towers, rooftops, existing poles—appropriate for the installation of equipment to support commercial wireless services (i.e., AT&T). Wireless carriers need sites to provide services to their customers and fill "gaps" in coverage. The City can lease some of its physical locations to meet demand.
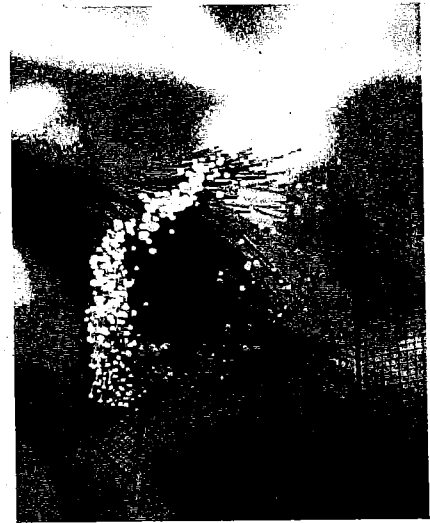
This initiative would lease these unused fiber strands to third parties in government, non-profit and for-profit sectors. The charges for "Dark Fiber" would consist of two elements: A one-time fee for bringing fiber to the customer's location and an ongoing fee for maintenance based on a per strand, per mile basis. The revenue from this initiative could be used to continue to expand the fiber network and return revenue to the City.

DT owns and operates two radio towers: Twin Peaks and South Hill, and approximately 50 emergency alarm devices on wooden poles. DT will work with the Department of Real Estate and Planning to determine the feasibility and potential revenue of using City facilities for wireless carriers.

Results Anticipated

By installing and leasing out a fiber network, the City anticipates the following benefits:

- Enhanced support for companies located in San Francisco which need high bandwidth to provide services
- Better cell phone and smart phone coverage and bandwidth for users
- Additional one-time and annual revenue through long term leases to customers for fiber and tower usage

IV. MAJOR SERVICE AREAS AND ICT STRATEGIES

Like any large organization with a wide array of customers and service offerings, the City must develop a business plan to ensure the policy goals and objectives are identified, agreed-to and used to guide decision-making. To ensure that technology is best deployed and used to enable policy and business objectives, investment must be driven by business needs, codified in a technology roadmap/plan.

The City organizes its business objectives based on its Major Service Areas (MSAs) which group similar functional responsibilities. This framework includes: Public Protection; Public Works, Transportation and Commerce; Health, Human Welfare and Neighborhood Development; Culture and Recreation; and General Administration and Finance. The City's CIO, departmental CIOs and technology leaders collaborated through a series of workshops, organized around Major Service Areas with an emphasis on citywide benefit. Working together through this collaborative effort, the City's technology leaders were able to link their departments' business strategies with ICT investment opportunities.

Following on the work of the CIOs, the COIT Planning and Budget Subcommittee reached out to departments to determine their future ICT needs. In order to prioritize many projects, the committee established, defined and utilized evaluation criteria that were used to complement the ICT strategies of consolidation, standardization and simplification. Taking into consideration the business objectives of the City, the group prioritized projects based on additional factors including whether they will replace, enhance or create new infrastructure, operating systems and software applications. Each project was evaluated against this multi-criteria method in order to determine its place and priority for inclusion in the five-year ICT Plan.

Major Service Areas

As part of the development of the first ICT Plan, COIT asked departments to submit projected ICT needs for the next five fiscal years. Twenty departments that account for the majority (approximately 90 percent) of ICT spending within the City presented projects that are highlighted in Section V (Major Service Areas and Departments) of this Plan; a full list of projects by departments can be found in Appendix B. Those departments not included in this Plan will be part of subsequent ICT Plans.

Funding allocation by Major Service Areas shows that the primary demand is in General Administration & Finance (35%), followed by Public Protection (27%) and Health, Human Welfare and Neighborhood Development (26%).

Requested Projects by Major Service Areas: $338.4 million

A bar chart showing Millions ($) on the vertical axis from $- to $140. Bars:
- Public Protection: $90.5
- Culture & Recreation: $3.3
- Public Works, Transportation & Commerce: $37.8
- Health, Human Welfare & Neighborhood Development: $88.6
- General Administration & Finance: $118.2

Legend:
- ■ General Fund Requested
- ☐ Non-General Fund Comittments

Purpose (New, Replace, Enhance)

It is clear that there is a need to replace existing outdated and obsolete systems, with 49 percent of requests for replacement projects. However, it is important to recognize that enterprise departments, in particular, are requesting new systems and infrastructure for new facilities that will be critical to their future performance and competitiveness.

Half of Proposed Projects Replace Current, Out-dated Systems

Pie chart:
- Replacement 49%
- Enhancement 29%

Category	General Fund	Non-General Fund	Total
Replacement Invest in developing new systems rather than maintaining current out-dated systems.	$136.3M	$38.7M	$175.0M
Enhancement Invest in an existing system to add new or substantially improve capabilities.	$14.3M	$78.0M	$92.2M
New Invest in a new system for functions that currently do not exist.	$15.4M	$38.7M	$71.2M

Investment Type (Infrastructure, Operating Systems, Software Applications)

While there are significant requests for software applications, the committee recognized the City's need to maintain robust infrastructure and sustain operating systems to ensure that the City meets its obligations to its constituents. The following chart shows that there is a significant need for investments in infrastructure in the coming years.

Almost Half of Proposed Projects Improve Infrastructure — Software Application 34%, Infrastructure 45%, Operating Systems 21%

Category	General Fund	Non-General Fund	Total
Infrastructure Underlying foundation of the City's IT architecture used to connect hardware, systems and software.	$92.0M	$61.7M	$158.7M
Operating Systems Hardware and software used to support specific department operations.	$19.8M	$45.9M	$65.7M
Software Application Software used to support end-user operations within and among departments.	$54.2M	$64.8M	$119.0M

Objectives

In order to meet their business objectives, many departments emphasized projects that support this Plan's investment strategies of consolidation, standardization and simplification. Notably, 78 percent of the projects' objectives align with these principles.

Majority of Proposed Projects Emphasize Accountability, Efficiency, Standardization — Standardization 26%, Accessibility 22%, Consolidation 10%, Accountability & Efficiency 42%

Category	General Fund	Non-General Fund	Total
Accessibility Improve availability of information using tools for departments and the public.	$44.4M	$28.8M	$73.1M
Accountability & Efficiency Appropriately expend funds and increase efficiency.	$23.5M	$118.8M	$142.3M
Consolidation Reduce duplicity of systems and infrastructure citywide.	$25.5M	$10.3M	$35.7M
Standardization Promote standards that increase interoperability.	$72.6M	$14.6M	$87.2M

In the following section, this Plan outlines ICT Strategies by Major Service Areas (MSAs). These areas are:

- **Public Protection**
  - Adult Probation
  - District Attorney
  - Emergency Management
  - Fire Department
  - Juvenile Probation
  - Police Department
  - Public Defender
  - Sheriff Department

- **Health, Human Welfare and Neighborhood Development**
  - Child Support Services
  - Children and Families Commission
  - Children, Youth and Their Families
  - County Education Office
  - Department of Public Health
  - Environment
  - Human Rights Commission
  - Human Services Agency
  - Rent Arbitration Board
  - Status of Women

- **Culture and Recreation**
  - Academy of Sciences
  - Arts Commission
  - Asian Art Museum
  - Fine Arts Museum
  - Law Library
  - Public Library
  - Recreation and Park Commission
  - War Memorial

- **Public Works, Transportation and Commerce**
  - Airport
  - Board of Appeals
  - Economic and Workforce Development
  - Municipal Transportation Agency
  - Port
  - Public Utilities Commission
  - Public Works

- **Government Administration and Finance**
  - Assessor/Recorder
  - Board of Supervisors
  - Building Inspection
  - City Administrator
  - City Attorney
  - City Planning
  - Civil Service Commission
  - Committee on Information Technology
  - Controller's Office
  - Department of Technology
  - Elections
  - Ethics Commission
  - Health Service System
  - Human Resources
  - Mayor
  - Retirement System
  - Treasurer/Tax Collector

V. MAJOR SERVICE AREAS

AND DEPARTMENTS

1. PUBLIC PROTECTION

High Level MSA Wide Business Objectives

- Provide appropriate resources on scene as quickly as possible
- Protection of life and property through prevention, suppression, EMS and education

- Support administration of a fair and effective criminal justice system
- Provide opportunity for Victim Restoration
- Provide opportunity for Offender Rehabilitation
- Improve information sharing with the public, through alerts, notifications and public broadcasting

ICT Strategies

- Improve access to information and collaboration among City departments in order to provide for the safety of the public and public safety personnel
- Increase direct service to the public through projects that improve efficiency, productivity and accuracy for public safety personnel
- Leverage new and cutting edge technology where appropriate and proven to enhance efficiency and productivity for improved public safety
- Improve recovery time in the event of disasters or outages to minimize disruptions to daily public safety activities
- Improve resiliency/fail-over of information systems to minimize disruptions to daily public safety activities
- Improve security and legal compliance of data and information systems to make sure appropriate information is available for corresponding enforcement activities
- Mitigate risk to public safety operations in order to maintain/sustain current service levels

Key Projects

Departments that participated in the ICT Plan development include Adult Probation, Emergency Management, Fire and Police. Remaining departments will be part of the next ICT Plan. Key projects include the following:

1. 800MHz Citywide Emergency Radio Replacement - $64,656,256
   Department of Emergency Management

   This project would replace 7,500 devices within the existing radio system to a standards-based digital voice radio system. Users include all public safety departments, Parking and Traffic and Recreation and Park.

2. Computer-Aided Dispatch Refresh - $3,250,000
   Department of Emergency Management

   This provides the call processing function for the City's 911 system and would migrate the out-dated system to the latest version of this technology.

3. Incident Reporting System (IRS) - $5,000,000
   Police Department

   This project would provide data warehouse capability to enable police incident reporting data to be used to support police prevention and response functions.

Public Protection - $90.5 million

Fiscal Year	Value
FY11-12	$28.1
FY12-13	$32.5
FY13-14	$26.6
FY14-15	$3.2
FY15-16	$0.1

■ General Fund Requested   □ Non-General Fund Comittments
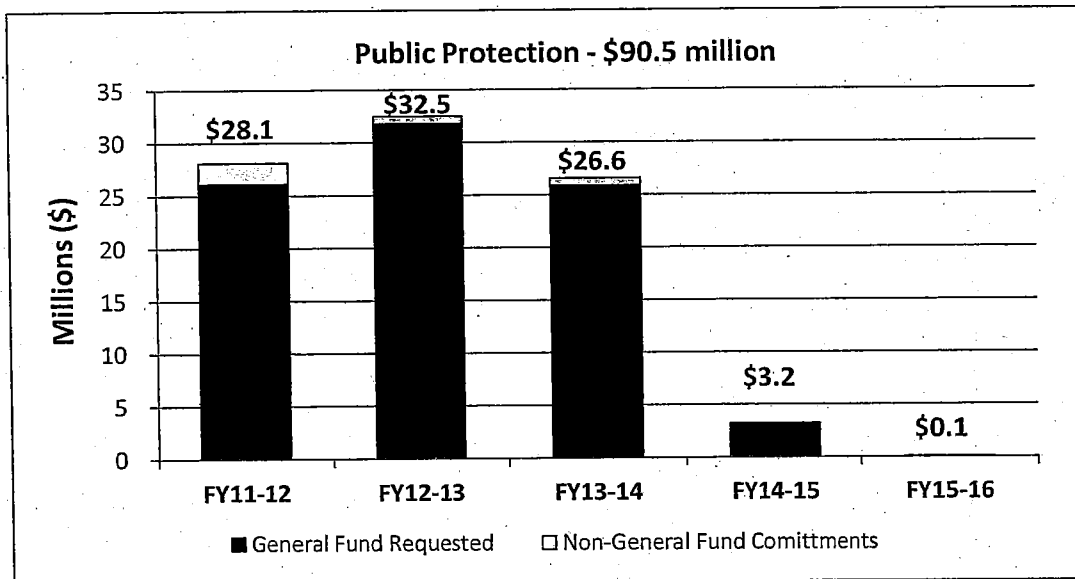
2. PUBLIC WORKS, TRANSPORTATION AND COMMERCE
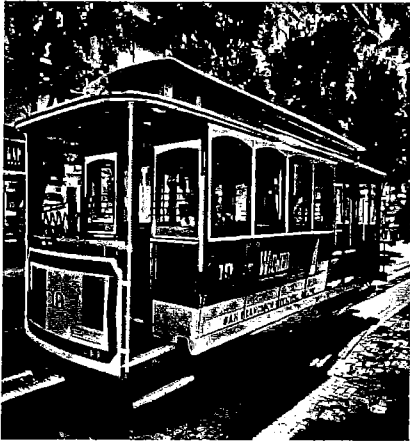
High Level MSA Wide Business Objectives

- Exercise environmental responsibility and promote sustainability

- Maintain safe and secure facilities and operations

- Utilize appropriate emerging technologies to improve processes for smarter, efficient operations

- Improve customer satisfaction through high quality services

- Invest in our employees

- Be fiscally prudent and maximize revenue generation opportunities

- Support and continue to be an economic engine for the City and our surrounding communities

ICT Strategies

- Leverage ICT investments, across the MSA, where appropriate

- Design and invest in clean and green equipment, facilities and infrastructure

- Provide customers, passengers and tenants with timely information to make the best decision on how to use our services

- Ensure security for customer data, either transactional or query

- Enable more and better self-service opportunities for customers, passengers and tenants

- Optimize application functionality, including examining other business processes

- Enable/implement operational systems to support efficient business/service delivery to customers and the general public

- Ensure and maintain the appropriate ICT technical skill sets to support the objectives of the MSA

- Maintain up-to-date capabilities with software version upgrades

Key Projects

Departments that participated in the ICT Plan development include Airport, Municipal Transportation Agency, Port, Public Utilities Commission and Public Works. Remaining departments will be part of the next ICT Plan. Key projects include the following:

1. Airport Network Infrastructure Improvement and Expansion - $12,502,000
    Airport

    This program includes upgrading and expanding current airport communications infrastructure to meet the needs of Airport tenants and operations. In addition, this program includes building a City data center at the Airport and will be one of the consolidated data center sites consistent with the City's initiative to upgrade and consolidate data centers citywide. This data center project will build a state-of-the-art data center to ensure performance improvement and disaster recovery for selected City departments.

2. Geographic Information Systems (GIS) - $804,040
    Port

    This new project will allow the department to view and integrate its data and facilities based on geography. This system will be integrated with the City's master address database administered by the Department of Building Inspection.

3. Network and Phone System for New Headquarters - $4,105,000
    Public Utilities Commission (PUC)

    This project will design and build the IT, networking and Voice over Internet Protocol (VoIP) systems for the new PUC building at 525 Golden Gate Avenue.
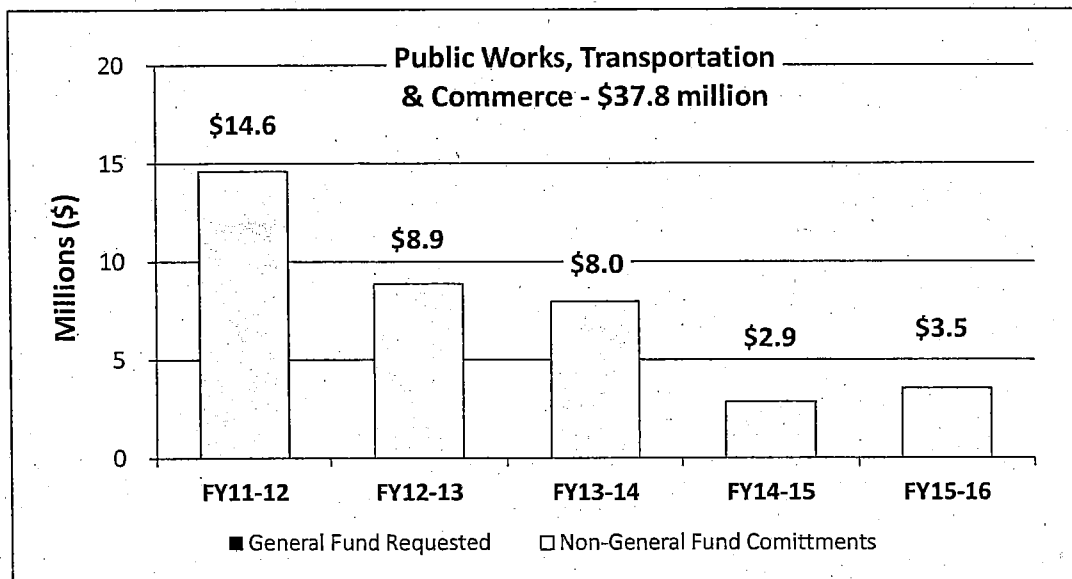
3. HEALTH, HUMAN WELFARE AND NEIGHBORHOOD DEVELOPMENT
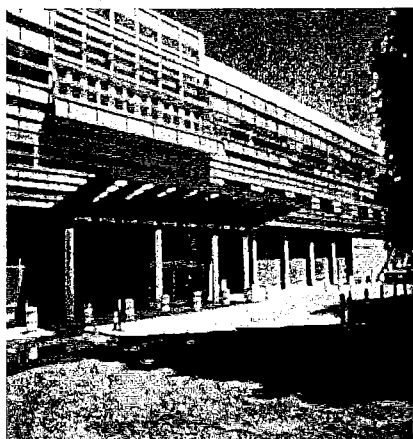
High Level MSA Wide Business Objectives

- Provide leadership and advocacy to secure, protect and promote human rights for all people of San Francisco

- Improve the well-being and self-sufficiency among individuals, families, children and communities in San Francisco

- Help individuals and families contribute to the economic vitality of San Francisco

- Protect and promote the health of San Francisco

ICT Strategies

- Use technology to better meet the needs of individuals, families and communities

- Use technical solutions to improve information sharing (as appropriate and ensuring confidentiality) across agencies and systems

- Develop secure, self-service solutions which enable better use of community health and human welfare services

- Employ technologies to improve the efficiency of service delivery to customers

- Invest in tools – rather than point solutions – to leverage staff capacity across multiple delivery systems

- Standardize on technical, application and data platforms when appropriate (cost savings)

- Employ technical solutions that reduce duplication of effort by non-profit agencies when doing business with the City

- Ensure public facing systems are accessible by all communities of people in the City

Key Projects

Departments that participated in the ICT Plan development include the Department of Public Health and the Human Services Agency. Remaining departments will be part of the next ICT Plan. Key projects include the following:

1. Enhanced Medical Records and Financial Systems - $28,042,268
   Department of Public Health

   This system augmentation will expand regulatory compliance necessary for patient medical records and patient financial services and will comply with new federal healthcare reform requirements for meaningful use of electronic medical records.

2. San Francisco General Hospital (SFGH) Replacement Project Technical Infrastructure - $30,000,000
   Department of Public Health

   This project will equip the new SFGH to be completed in 2016 with the infrastructure, operating systems and applications. This project is expected to be funded in FY 2015-16.

3. Laguna Honda Clinical, Long-Term Care and Nursing Systems - $1,400,000
   Department of Public Health

   This project will provide an integrated system and associated hardware to achieve regulatory compliance for patient documentation and treatment planning.

4. Software License Replacement - $803,000
   Human Services Agency (HSA)

   This project will put HSA on a four-year replacement cycle for 2,200 employee desktops and software applications.

Health, Human Welfare & Neighborhood Development- $88.6 million

FY11-12: $9.6; FY12-13: $15.1; FY13-14: $11.3; FY14-15: $11.3; FY15-16: $41.3

Millions ($)

■ General Fund Requested   □ Non-General Fund Comittments
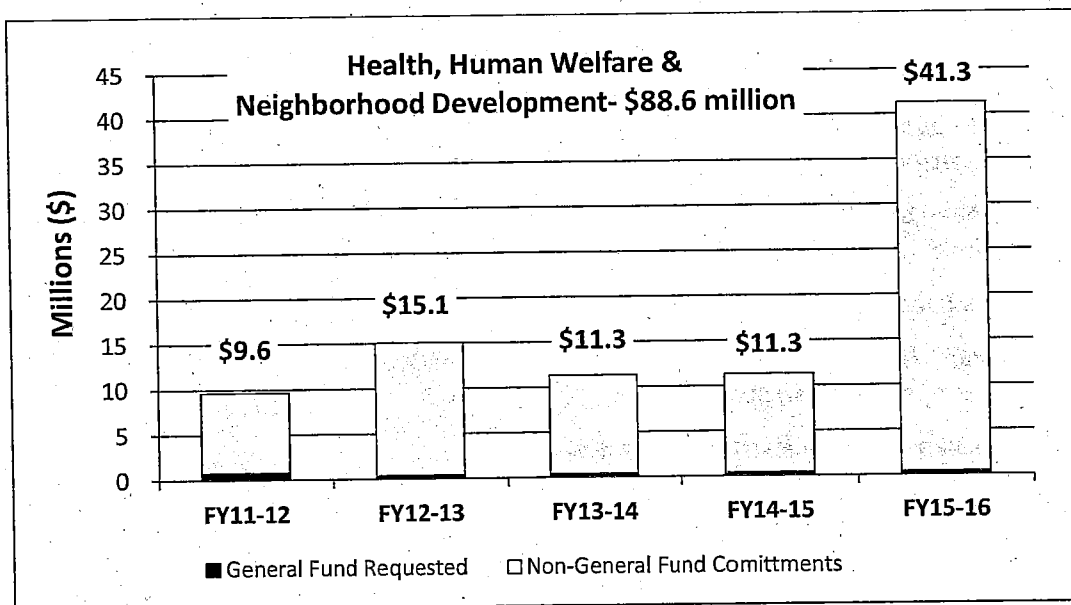
4. CULTURE AND RECREATION

High Level MSA Wide Business Objectives

- Enhance the cultural, educational and recreational experience of the diverse San Francisco community by providing information

- Maximize use and enjoyment of facilities for residents, visitors and businesses

- Enhance ICT facility capability to meet the needs of a variety of presenters and uses

- Encourage multigenerational and multicultural interaction and use of facilities

- Implement improvements that will insure users can intuitively locate, engage with, and effectively use the dynamic digital services and content offered by the City Library

- Enhance infrastructure capacity in order to support information access to the Library's digitally licensed content, unique digital collections, archives, image database, videos, eBooks, audio books and full text articles

- Enhance access to unique San Francisco information and content

ICT Strategies

- Increase the number of free Wi-Fi locations and build added capacity within spaces (e.g. neighborhood Libraries) already providing free Wi-Fi

- Support broadband adoption and public technology access by increasing the number of public computers and laptops available in City Libraries

- Present an integrated and unified entry point that allows access to events, activities, facility reservation and/or rentals to provide comprehensive information availability to the public

- Stay technologically compatible to enable seamless interaction with users of the City's facilities

- Leverage SFGTV to promote and enhance cultural and recreational opportunities of San Francisco wherever practical and possible

- Use technologies to make facilities easier to use

- Deploy "social media" tools to the fullest extent to increase and improve public interaction, share information about cultural events/activities, and to exchange ideas

- Digitize and store unique San Francisco audio, video and print content and stream this content via the City website to the public

Key Projects

The Library participated in the ICT Plan development. Remaining departments will be part of the next ICT Plan, including the Recreation and Park Department.

1. **Library Network and Bandwidth Upgrades - $700,000**
   Public Library

   This project will enhance and upgrade the Library's network to facilitate increased free citywide Wi-Fi access, public access computing and City-owned/licensed digital content downloads (e.g., eBooks, movies, online learning podcasts). This project will also increase the number of public access computers and laptops in City Libraries.

Culture and Recreation - $3.3 million

Year	Value
FY11-12	$0.6
FY12-13	$0.8
FY13-14	$0.8
FY14-15	$0.5
FY15-16	$0.7

■ General Fund Requested   □ Non-General Fund Comittments
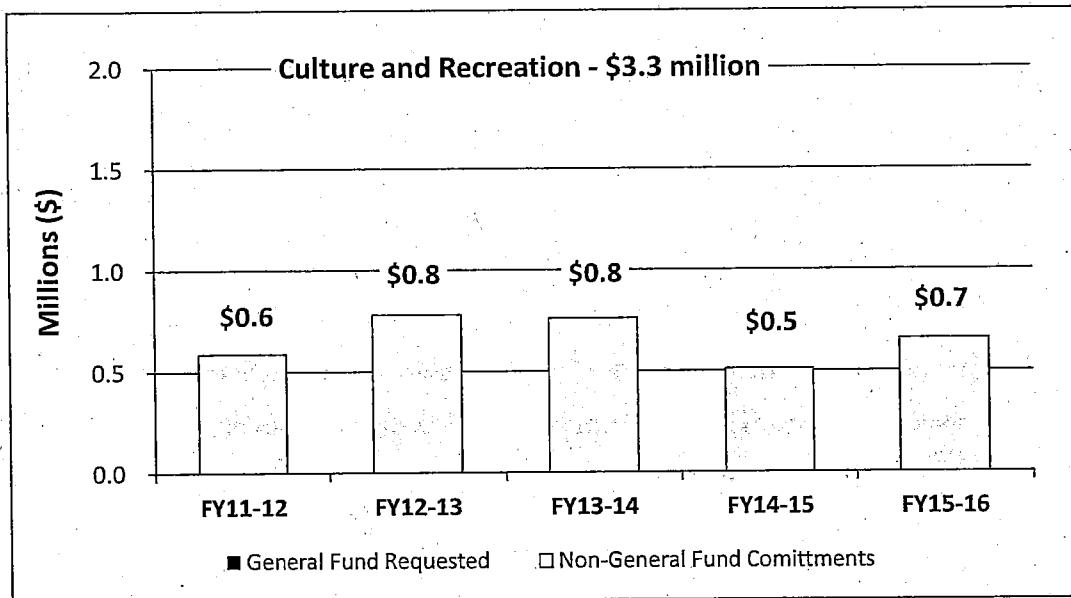
5. GENERAL ADMINISTRATION AND FINANCE
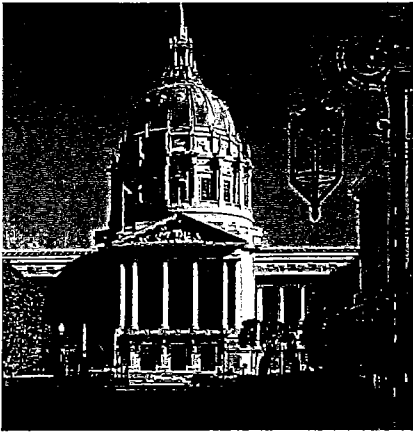
High Level MSA Wide Business Objectives

- Provide essential administrative services, processes and information to support City operations

- Provide direct service and information to the public

- Ensure the safeguarding of the City's financial resources

- Ensure compliance with City, state and federal regulations and standards

ICT Strategies

- Establish common or central technologies for improved collaboration and management
- Enable self-service for departments and the public
- Adopt innovative and fiscally sound technologies which improve work processes and service delivery
- Use technical solutions to improve information sharing (as appropriate and ensuring confidentiality) across the City

Key Projects

Departments that participated in the ICT Plan development include Assessor/Recorder, City Attorney, Controller's Office, City Planning, Department of Building Inspection, General Services Agency, Department of Technology and Treasurer/Tax Collector. Remaining departments will be part of the next ICT Plan. Key projects include the following:

1. Business Tax System - $1,831,099
   Treasurer/Tax Collector

   This project will replace the aged and out-dated business tax system with a new solution to be integrated with the department's general ledger, cashiering and investment systems used by three departments.

2. Replacement of the City's Financial System - $45,000,000 (total cost $75,000,000 through 2018)
   Controller's Office

   The City's 20+ year old mainframe-based central financial and accounting information system will be replaced in phases over a period of years. Major citywide functions include general ledger, grants and project accounting, budgetary control, purchasing, accounts payable, fixed asset accounting and labor distribution accounting.

3. Building Permit and Project Tracking System - $7,000,000
   Building Inspection, City Planning

   These two departments are implementing a common system to process and track all permit and construction project transactions. This system will improve performance metrics, provide data on all permit transactions, track revenue recovery, and reduce processing times.

4. Citywide Telephone Replacement – Voice over Internet Protocol (VoIP) - $6,500,000
   Department of Technology

   This project will replace in phases existing telephone infrastructure with VoIP technology and infrastructure on the citywide fiber wide-area network.

General Administration & Finance - $118.2 million

■ General Fund Requested   □ Non-General Fund Comittments
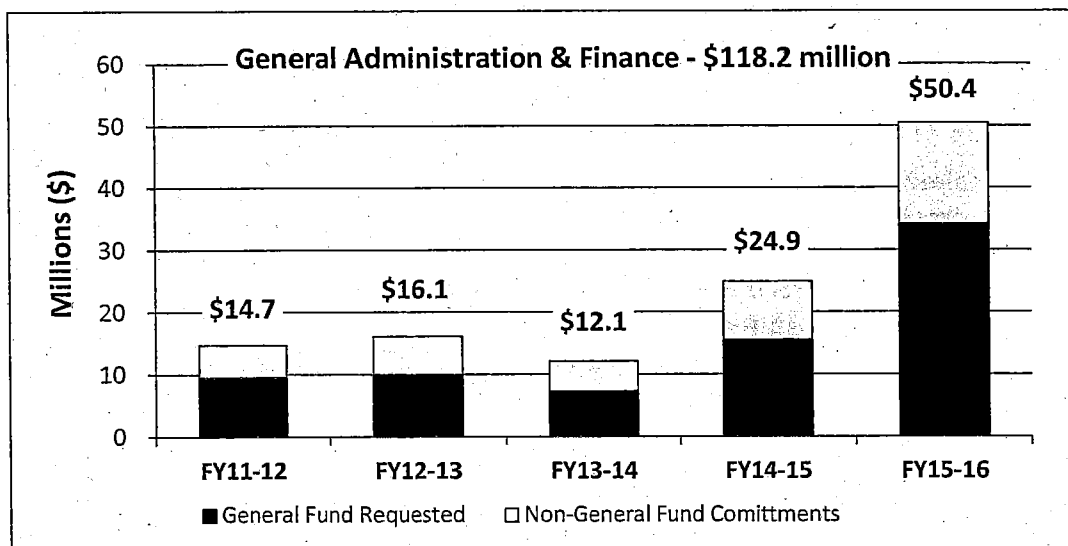
VI. FINANCIAL STRATEGIES

The City has already begun to improve its infrastructure and ICT systems through a citywide approach to developing ICT solutions to meet common business objectives. Examples of these efforts include data center consolidation, standardizing ICT platforms, and converting the City to one email system. However, the prioritized need identified in this Plan of $338.4 million far exceeds the available funding. Even with additional aggressive deployment of the ICT strategies of consolidation, standardization and simplification, not enough money will be available, given the City's current financial framework. The following "Financial Strategies" were developed to enable the City to increase investments in technology projects while recognizing financial limitations, and to improve service delivery to the City. Financial Strategies include:

- Develop bond/debt financing instruments for large infrastructure ICT replacements and enhancements in order to complete high priority projects in the next five years, while extending repayment over a longer period of time. For example, the City could finance emergency system infrastructure by increasing the user fees or taxes.

- Expand the City's current lease financing program to include more ICT projects, and commit to an annual allocation to pay for annual lease payments.

- Extend "enterprise" department ICT investments to citywide use to the extent allowed by regulations and law and reimburse them for citywide costs. Also, use an allocation methodology so that the costs of citywide investments are shared between enterprise departments and the General Fund.

- Pursue grants and other state and federal sources.

- Identify alternate revenue sources by providing ICT services to non-City entities and allocate projected revenue gains from the implementation of improved assessor and tax collector systems to fund these ICT projects.

- Increase the proposed $6.6 million General Fund allocation in Fiscal Year 2011-12 by 10 percent in subsequent fiscal years to address growing demand for ICT resources.

- Free up existing funds for ICT investments by pursuing the following strategies:

    o Redirect base budgets to fund future projects, and include ICT base budget funding in annual budget justification discussions.
    o Prioritize enterprise-wide applications and retire existing stand-alone systems that provide the same functional requirements.
    o Re-allocate savings from consolidations to fund ICT infrastructure improvements and new citywide or multi-department ICT projects.

- Defer projects to later years through prioritization and planning.

- Eliminate or reduce the cost of proposed projects to shrink overall funding need. This should be done through collaboration, sharing of current systems and review of alternatives with stakeholders.

As shown at the beginning of the Plan, a total of $338.4 million was identified for 115 separate projects in 20 departments over the next five years. Given funding constraints to the General Fund, the City cannot fund the projects requested. If the financial strategies identified above are implemented, the City will have more opportunity to fulfill the Plan. The following table compares the initial requested sources of funds with a scenario that utilizes these alternative funding strategies.

Funding Source	Initial Project Request	Proposed Plan Funding Source	Difference
Financing	18,602,000	96,348,256	77,746,256
Grant	36,901,138	36,901,138	-
Non-General Fund	118,823,065	114,096,281	(4,726,784)
General Fund	164,039,404	40,300,000	(123,739,404)
Additional Revenue	-	12,000,000	12,000,000
TOTAL	338,365,606	299,645,675	(38,719,931)
Identified Reduction/Reallocation	-	5,475,000	5,475,000
Required Reduction/Reallocation	-	33,244,931	33,244,931
TOTAL Reduction/Reallocation	-	38,719,931	38,719,931

This new distribution employs financing mechanisms, substitutes requests for General Fund with allocation of projects between General Fund and Non-General Fund resources, and assumes the reduction of project costs and elimination of proposals. As a result, the actual demand on the General Fund was reduced by $123.7 million.

COIT and City departments will need to review and prioritize projects regularly in order to identify reductions and or reallocation of projects to meet budgetary constraints. If these strategies are not successful, the City will continue to defer and eliminate key projects.

POSITIONED FOR SUCCESS
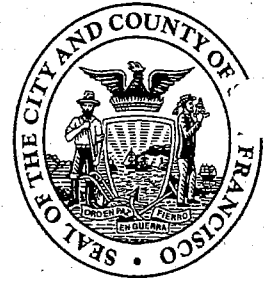
The City is positioned for success, beginning with the construct of this ICT Plan, starting with the CIO's ICT Vision, followed by Strategic Foundational Investments which provide, as the name implies, an ICT topology from which department initiatives can flourish.

Through disciplined deployment of the ICT Investment Strategies of consolidation, standardization, and simplication and innovative financial strategies, a fundamental shift from continued operational spending to new project delivery is underway.

Continued collaboration within departments and between departments on ICT project and business process, standardization and simplication will further stretch available ICT dollars. Witness the data center consolidation, email and security projects as visible evidence of results that can, and will be, achieved.

The development of this Plan was a joint effort involving the business and technology leaders across City agencies. The initiatives chosen were those that are most critical to achieving specific business goals while also enabling substantial progress toward the Mayor's overall goals. This Plan has the support and endorsement of COIT which is committed to providing the leadership and support needed to enable progress toward the realization of the Strategic Foundational Initiatives and establishing a technology platform that will serve as a lasting foundation for the future.

For a more detailed listing of project prioritization by departments, please see Appendix B of this Plan.

APPENDIX A

CRITERIA FOR PRIORITIZING AND FUNDING PROJECTS
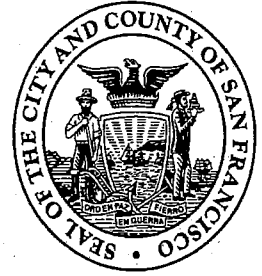
In order to prioritize and list major service area projects in sequence by importance, evaluation criteria was established, defined, and utilized by the COIT Planning and Budgeting Subcommittee. Each criterion was assigned a scoring range and a weight factor for determining the projects as compared to the ICT strategies of consolidation, standardization and simplification. The group also identified additional factors including the need to upgrade the City's existing infrastructure and the City's ability to upgrade or enhance existing applications and systems, as compared to replace existing systems or build totally new systems to meet the business needs of the major service areas. Each project was evaluated against this multi-criteria method and in order to determine its place and priority to be included in the five year ICT Plan.

Criteria for review of ICT projects proposed, as established by the COIT Budget and Planning Subcommittee in January 2011

Priority Project

- Enhance Security
- Improve Disaster Recovery
- Support for Core Business
- Increase Compliance to Laws
- Increase Efficiency/ROI
- Improve Department Infrastructure

Core Function

- Improve Citywide Business Process
- Represent Department #1 Priority

Scope

- Move toward Citywide Solution
- Enhance Multi-Department Business Function
- Improve Single Department

Funding Source

- Enterprise or non-General Fund
- Grant or non City funded
- Cost Allocation Citywide
- Finance through Bond or Lease
- General Fund

APPENDIX B

PROJECTS BY DEPARTMENTS

The following table displays the complete list of all projects that were reviewed and included in this Plan.

Numbers represented here are subject to change based on final Board and Mayoral approval.

PUBLIC PROTECTION						
Department/Project	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	Grand Total
Adult Probation						
COMPAS Risk/Needs Assessment and Legal Case Management System	312,000	0	0	0	0	312,000
Conversion of Probationers' Physical Files to the Electronic format	32,111	0	0	0	0	32,111
Hardware and System Installation	207,415	0	0	0	0	207,415
Adult Probation Total	**551,526**	**0**	**0**	**0**	**0**	**551,526**
Emergency Management						
800MHz CERS Radio Replacement	17,401,423	23,454,667	20,623,167	3,177,000	0	64,656,256
Computer Aided Dispatch System Refresh	2,292,113	957,887	0	0	0	3,250,000
Logging Recording Solution	0	1,070,000	0	0	0	1,070,000
Public Safety Mobile VPN Solution	206,424	0	0	0	0	206,424
Public Service Voice Radio Network Upgrade	1,980,000	5,980,000	5,130,000	0	0	13,090,000
Emergency Management Total	**21,879,960**	**31,462,554**	**25,753,167**	**3,177,000**	**0**	**82,272,680**
Fire						
Fire Reporting System Upgrade	200,000	25,000	25,000	25,000	25,000	300,000
Network Consulting Services/Failover for Network	50,000	0	0	0	0	50,000
Virtualization of Desktops/ Networks	375,000	100,000	100,000	30,000	30,000	635,000
Fire Total	**625,000**	**125,000**	**125,000**	**55,000**	**55,000**	**985,000**
Police						
Air Cards and Level II Access to Police Vehicles	645,000	0	0	0	0	645,000
Incident Reporting System (IRS)	3,600,000	700,000	700,000	0	0	5,000,000
Technology Division Consolidation and Technical Support Implementation	810,000	200,000	0	0	0	1,010,000
Police Total	**5,055,000**	**900,000**	**700,000**	**0**	**0**	**6,655,000**
Grand Total	**28,111,486**	**32,487,554**	**26,578,167**	**3,232,000**	**55,000**	**90,464,206**

PUBLIC WORKS, TRANSPORTATION AND COMMERCE						
Department/Project	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	Grand Total
Airport						
Capital Planning System, Phase II	300,000	50,000	0	0	0	350,000
Document Management System	0	1,500,000	400,000	0	95,000	1,995,000
Network Infrastructure Improvement & Expansion	0	1,400,000	2,200,000	535,000	405,000	4,540,000
Network Infrastructure Monitoring & Management	0	400,000	400,000	400,000	162,000	1,362,000
Operating Budget Management System	50,000	349,000	76,000	0	76,000	551,000
SFO Airport Data Center Consolidation	6,000,000	600,000	0	0	0	6,600,000
SFO Enterprise Service and Message Buses	0	75,000	1,400,000	800,000	291,250	2,566,250
SFO Next Generation Directory (NGD)	0	700,000	65,000	0	153,000	918,000
SFO Web Services	0	270,000	275,000	0	54,500	599,500
Tenant Self Service Portal	0	150,000	850,000	125,000	168,750	1,293,750
Airport Total	**6,350,000**	**5,494,000**	**5,666,000**	**1,860,000**	**1,405,500**	**20,775,500**

PUBLIC WORKS, TRANSPORTATION AND COMMERCE

Department/Project	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	Grand Total
Municipal Transportation Agency						
Asset Management/Inventory System Upgrade	60,000	60,000	88,000	0	0	208,000
Central Control Relocation	225,000	0	0	0	0	225,000
Citrix Upgrade	20,000	0	0	0	0	20,000
Computer Room Consolidation	0	0	250,000	0	0	250,000
Desktop Refresh	400,000	425,000	100,000	100,000	100,000	1,125,000
Disaster Recovery/Business Continuity	225,000	225,000	100,000	0	0	550,000
Help Desk Management System Upgrade	0	0	25,000	0	0	25,000
Internet Filtering / Monitoring	80,000	0	0	0	0	80,000
Network Infrastructure Refresh	225,000	225,000	0	0	0	450,000
Office 2010 Upgrade Training	60,000	0	0	0	0	60,000
Oracle Database Consolidation	0	0	48,000	0	0	48,000
Server Virtualization	250,000	550,000	0	0	0	800,000
SharePoint 2010 Upgrade	85,000	0	0	0	0	85,000
Municipal Transportation Agency Total	1,630,000	1,485,000	611,000	100,000	100,000	3,926,000
Port						
CCTV/Access Control	0	84,000	84,000	84,000	84,000	336,000
Data Center Consolidation Equipment & Staff	0	0	160,000	108,000	108,000	376,000
Disaster Recovery	0	0	150,000	75,000	75,000	300,000
eMerge Support	103,116	103,116	20,000	72,000	72,000	370,232
Geographic Information System	204,520	239,520	152,000	104,000	104,000	804,040
Oracle Applications Upgrade	50,000	250,000	0	0	0	300,000
Tech Refresh Project	0	0	0	0	1,580,000	1,580,000
Port Total	357,636	676,636	566,000	443,000	2,023,000	4,066,272
Public Utilities						
Department Operations Center 525 Golden Gate	180,000	0	0	0	0	180,000
Mobile solution for City Distribution Division	199,500	0	0	0	0	199,500
Network and Phone System (VOIP) for New Headquarters	4,105,000	0	0	0	0	4,105,000
SharePoint and scanning solution	1,112,300	0	0	0	0	1,112,300
Supervisory Control and Data Acquisition (SCADA), AWSS Upgrade	400,000	100,000	0	0	0	500,000
Public Utilities Total	5,996,800	100,000	0	0	0	6,096,800
Public Works						
Advance Document Management	0	150,000	100,000	50,000	0	300,000
CMMS Enhancement and field mobile solutions	0	350,000	500,000	150,000	0	1,000,000
DPW Mobile Solution	0	325,000	325,000	100,000	0	750,000
EPM – Enterprise Project Management	144,760	50,000	50,000	0	0	244,760
Data Warehouse and Business Intelligence	115,000	85,000	0	0	0	200,000
Master Data Management and Data Governance	0	150,000	150,000	150,000	0	450,000
Public Works Total	259,760	1,110,000	1,125,000	450,000	0	2,944,760

HEALTH, HUMAN WELFARE AND NEIGHBORHOOD DEVELOPMENT

Department/Project	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	Grand Total
Human Services						
CMIPS-II Staff Support	134,574	134,574	134,574	134,574	134,574	672,870
Desktop Replacement	660,000	660,000	660,000	660,000	660,000	3,300,000
Software License	803,000	0	0	0	0	803,000
Human Services Total	1,597,574	794,574	794,574	794,574	794,574	4,775,870

HEALTH, HUMAN WELFARE AND NEIGHBORHOOD DEVELOPMENT

Department/Project	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	Grand Total
Public Health						
Community Health Services Desktop Computing/PC Replacement	2,600,000	1,300,000	1,300,000	1,300,000	1,300,000	7,800,000
DPH Single Sign -on System	500,000	400,000	400,000	400,000	400,000	2,100,000
Enhanced Medical Records/ Financials	3,350,000	8,362,584	5,443,228	5,443,228	5,443,228	28,042,268
Laguna Honda Clinical Systems, Longterm Care and Nursing Devices	600,000	200,000	200,000	200,000	200,000	1,400,000
New SFGH Technical Infrastructure	0	0	0	0	30,000,000	30,000,000
Primary Care Wireless Deployment Infrastructure (COPC)	200,000	100,000	100,000	100,000	100,000	600,000
Security Software Systems, Remote Access, Secure ID (Dataway)	350,000	350,000	350,000	350,000	350,000	1,750,000
SFGH Application Upgrades, Watchchild, OR and Radiology & ORMIS	245,000	630,000	155,000	155,000	155,000	1,340,000
SFGH Medication, Barcoding and Wireless/ Pharmacy/ Nursing	100,000	700,000	300,000	300,000	300,000	1,700,000
SFGH Mobile Devices	100,000	100,000	100,000	100,000	100,000	500,000
Staff Support for Revenue-Based Enhanced Systems	0	2,142,613	2,142,613	2,142,613	2,142,613	8,570,452
Public Health Total	**8,045,000**	**14,285,197**	**10,490,841**	**10,490,841**	**40,490,841**	**83,802,720**
Grand Total	**9,642,574**	**15,079,771**	**11,285,415**	**11,285,415**	**41,285,415**	**88,578,590**

CULTURE AND RECREATION

Department/Project	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	Grand Total
Public Library						
Branch Library Improvement Program	170,000	0	0	0	0	170,000
ILS Server Upgrade or Replacement	0	0	250,000	0	0	250,000
Network & Bandwidth	150,000	320,000	130,000	70,000	30,000	700,000
Phone Switch Upgrade (VoIP)	0	210,000	120,000	0	0	330,000
Server Virtualization	167,000	130,000	80,000	340,000	528,000	1,245,000
Storage & Backup	100,000	120,000	180,000	100,000	100,000	600,000
Public Library Total	**587,000**	**780,000**	**760,000**	**510,000**	**658,000**	**3,295,000**
Grand Total	**587,000**	**780,000**	**760,000**	**510,000**	**658,000**	**3,295,000**

GENERAL ADMINISTRATION AND FINANCE

Department/Project	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	Grand Total
Administrative Services						
311 CRM Upgrades	120,000	130,000	0	150,000	150,000	550,000
City Hall Data Center Power Upgrade	230,000	150,000	150,000	0	0	530,000
SW Maint/Upgrades	0	70,000	0	0	0	70,000
Tech Refresh Project	423,600	377,300	308,250	160,350	89,000	1,358,500
Administrative Services Total	**773,600**	**727,300**	**458,250**	**310,350**	**239,000**	**2,508,500**
Assessor-Recorder						
Customer Service Portal	1,000,000	125,000	125,000	125,000	125,000	1,500,000
Green Document Management	0	1,500,000	187,500	187,500	187,500	2,062,500
Interdepartmental Collaboration Portal	0	0	1,000,000	125,000	125,000	1,250,000
Property Tax Database Upgrade	0	0	0	0	7,000,000	7,000,000
Recorder System Upgrade	0	0	0	4,000,000	50,000	4,050,000
Assessor-Recorder Total	**1,000,000**	**1,625,000**	**1,312,500**	**4,437,500**	**7,487,500**	**15,862,500**
Building Inspection						
Electronic Document Management and Plan Review System	1,250,000	0	250,000	250,000	250,000	2,000,000
Permit and Project Tracking System	600,000	1,600,000	1,600,000	1,600,000	1,600,000	7,000,000
Building Inspection Total	**1,850,000**	**1,600,000**	**1,850,000**	**1,850,000**	**1,850,000**	**9,000,000**

GENERAL ADMINISTRATION AND FINANCE						
Department/Project	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	Grand Total
City Attorney						
Avaya PBX Replacement	0	52,000	165,000	52,000	52,000	321,000
CityLaw Case Management	150,830	60,830	60,830	60,830	60,830	394,150
Software License	90,279	77,288	46,540	46,540	235,333	495,980
Tech Refresh Project	316,162	406,148	58,975	94,226	395,055	1,270,566
City Attorney Total	**557,271**	**596,266**	**331,345**	**253,596**	**743,218**	**2,481,696**
City Planning						
Permit and Project Tracking System	0	400,000	0	0	0	400,000
City Planning Total	**0**	**400,000**	**0**	**0**	**0**	**400,000**
Committee on Information Technology						
City wide PC Lease Program	1,217,526	300,000	300,000	300,000	300,000	2,417,526
Committee on Information Technology Total	**1,217,526**	**300,000**	**300,000**	**300,000**	**300,000**	**2,417,526**
Controller						
FAMIS Replacement Project	0	1,000,000	2,000,000	12,000,000	30,000,000	45,000,000
Controller Total	**0**	**1,000,000**	**2,000,000**	**12,000,000**	**30,000,000**	**45,000,000**
Technology						
Data Center Consolidation	3,042,683	4,031,403	1,238,720	1,238,720	1,238,720	10,790,246
DATA TIER - Hub & Warehouse	0	1,200,000	620,000	450,000	450,000	2,720,000
Fiber to City Owned Building	1,400,000	1,450,000	1,475,000	1,500,000	1,525,000	7,350,000
Radio Narrow Banding	0	760,219	0	0	0	760,219
Security Visibility and Intelligence	625,000	250,000	250,000	250,000	250,000	1,625,000
Single Sign-On	0	0	0	0	4,000,000	4,000,000
VISUALIZATION - Business Activity Monitoring	0	425,000	300,000	335,000	375,000	1,435,000
Voice Over IP Implementation	2,500,000	1,000,000	1,000,000	1,000,000	1,000,000	6,500,000
VOIP Operations	0	700,000	700,000	700,000	700,000	2,800,000
Wireless Expansion at City Facilities	500,000	30,000	30,000	30,000	3,000	593,000
Technology Total	**8,067,683**	**9,846,622**	**5,613,720**	**5,503,720**	**9,541,720**	**38,573,465**
Treasurer & Tax Collector						
Business Tax Systems	1,150,000	0	202,900	218,190	260,009	1,831,099
Qmatic	100,000	0	13,200	14,520	15,972	143,692
Treasurer & Tax Collector Total	**1,250,000**	**0**	**216,100**	**232,710**	**275,981**	**1,974,791**
Grand Total	**14,716,080**	**16,095,188**	**12,081,915**	**24,887,876**	**50,437,419**	**118,218,478**

MSA	FY11-12	FY12-13	FY13-14	FY14-15	FY15-16	Grand Total
Culture & Recreation	587,000	780,000	760,000	510,000	658,000	3,295,000
General Administration & Finance	14,716,080	16,095,188	12,081,915	24,887,876	50,437,419	118,218,478
Health, Human Welfare & Neighborhood Development	9,642,574	15,079,771	11,285,415	11,285,415	41,285,415	88,578,590
Public Protection	28,111,486	32,487,554	26,578,167	3,232,000	55,000	90,464,206
Public Works, Transportation & Commerce	14,594,196	8,865,636	7,968,000	2,853,000	3,528,500	37,809,332
Grand Total	**67,651,336**	**73,308,149**	**58,673,497**	**42,768,291**	**95,964,334**	**338,365,606**