



City and County of San Francisco ICT PLAN

Executive Summary

INTRODUCTION

The Committee on Information Technology (COIT) is pleased to present the second Information and Communication Technology (ICT) Plan to the Mayor and Board of Supervisors. This Plan builds on the progress made in the first Plan. It provides a framework for how the City can proactively plan for, fund and implement projects that support the strategic goals outlined in the Plan. While there are great opportunities in Information Technology (IT) that the City can foresee, these opportunities are tempered by constraints in the City's resources. This Plan outlines a path of coordination and planning to maximize current and future resources for IT projects.

This Executive Summary outlines the Plan, and includes: a look back at the previous Plan and accomplishments since its adoption; the guiding priorities, goals and functional funding categories for the City's updated Five-Year ICT Plan; and the financial strategies and recommendations for the City to meet these goals and prioritize citywide IT investments.

Vision

San Francisco is the Innovation Capital of the World. The manner in which City government plans and invests in information and communication technologies must meet the rapid pace of technological change as well as embody the same innovative and entrepreneurial spirit of the City as a whole. Information technology is also a connective tissue between the City's operations as an enterprise and its residents. It enables the City to improve existing government services, create entirely new services, and increase opportunities for engagement. In order for the City to meet the needs of San Franciscans and remain responsive to changes in technology, society, and its operating environment, the vision for this ICT Plan is one of Innovation, Sustainability and Resilience.

Governance

Working with the City's Chief Information Officer (CIO), COIT provides a framework for IT governance that enables the City to achieve its IT-related vision and goals. This framework is supported through the work of COIT's three subcommittees: Architecture & Standards, Performance & Resources, and Planning & Budgeting. Working together, these three subcommittees enable COIT to evaluate the current state of the City's IT, identify future needs, and establish policies and procedures that both protect our current assets and guide future investments.

HIGHLIGHTS FROM THE FY 2012-2017 ICT PLAN

The City and County of San Francisco adopted its first Five-Year ICT Plan in 2011. Since that time, the City has made significant progress towards the initiatives that were adopted in the first Plan. Below is a list of the major initiatives outlined in the last Plan and an update on the City's progress in each area:

MAJOR INITIATIVE	ACCOMPLISHMENTS
Open SF: Open Data Initiative	<ul style="list-style-type: none"> • Appointed Chief Innovation Officer • New Open Data platform online to support local and national initiatives
Citywide Applications	<ul style="list-style-type: none"> • eMerge citywide launch • Continued rollout of new email system • Department of Public Works/Department of Technology (DT) Information Asset Management
Data Center Consolidation and Virtualization	<ul style="list-style-type: none"> • SFO Data Center nearing completion • 800+ virtual servers citywide
Citywide Broadband and Wi-Fi Access	<ul style="list-style-type: none"> • 31,000 new broadband end users, 47 new labs at senior centers, and Housing Authority (HA) properties through Broadband Technology Opportunities Program (BTOP) • 550 Wi-Fi access points servicing 38 HA properties
Enterprise Agreements	<ul style="list-style-type: none"> • Achieving economies of scale by implementing three new Enterprise Agreements: VMware, Adobe Acrobat, and Nuance
Citywide Security Plan	<ul style="list-style-type: none"> • Established citywide security taskforce • Expanded citywide and DT security policies • Initiated citywide IT staff security training
Voice over IP (VoIP) and Landline Reductions	<ul style="list-style-type: none"> • Initiated Vonage VoIP project with the Police Department • Converting 25 Van Ness • Planning underway with other City departments
IT Staff Support in Shared Buildings	<ul style="list-style-type: none"> • The Human Services Agency, Planning Department, and Department of Building Inspection started sharing desktop support services at their Mission Street Offices
Reproduction and Mail Consolidation	<ul style="list-style-type: none"> • In FY 2010-11, reproduction and mail services were transferred operationally from DT to the Office of the City Administrator
Dark Fiber and Tower Leasing	<ul style="list-style-type: none"> • Current leasing agreements with commercial partners to yield one-time and on-going revenue to the City

GUIDING PRIORITIES FOR FY 2014-18 ICT PLAN

This Plan identifies goals and priorities that will advance the City's IT vision of **Innovation, Sustainability, and Resilience**. The following priorities have been identified as overarching elements necessary to achieve this vision.

Incorporating Effective Innovation into City Government

Technology can drive economic growth and government efficiency and should be leveraged to create a culture of innovation across government. As a tool, innovation can be infused in all areas of City government to bring about change. There are many forms of innovation – a new product, service, or even process. Beyond creating efficiencies and improving government effectiveness, innovative approaches, when used appropriately, can also strengthen IT security and improve the resilience of the City's IT infrastructure.

For these reasons, this Plan prioritizes innovation to bring about change to the City's business processes, how the City engages with the public, and to the services provided to those that work, play and live in San Francisco.

Improving Sustainability of Information Technology

The City will focus on improving the sustainability of IT by both recruiting and retaining qualified IT staff, and also by strengthening the planning, performance and evaluation of IT projects.

❖ *Attracting, Retaining and Developing IT Personnel*

Attracting, retaining, and developing staff are challenges that many organizations face. In part because of the extremely competitive hiring environment, and in part because of our own internal processes, these challenges have become especially noticeable with respect to IT professionals. San Francisco must: attract talented professionals who will utilize of technology as a tool for innovation; develop staff to become IT leaders; and retain staff to support business continuity and sustainability. Some of the challenges surrounding IT professionals include:

- Difficulty attracting and retaining candidates with the right set of skills;
- Lengthy hiring process time;
- Competing with the private sector for candidates; and
- Limited professional development opportunities for IT staff.

To gain a better understanding of the current challenges, and to identify specific ways to address them, the Department of Human Resources (DHR) formed the City Technology Hiring Group. This group includes DHR, the Mayor's Office, the Controller's Office, the Department of Technology, representatives from larger departments, and union representatives. The City Technology Hiring Group is reviewing a number of different proposals, which could be piloted in the near future, including: continuous recruitment for specific IT classes; IT-focused social media recruitment; and hiring "open houses." The group is also exploring options to strengthen training and retention of the City's IT professionals.

❖ *Strengthening Planning and Performance Evaluation of IT Projects*

Planning and monitoring IT projects is the strategy that helps the City invest in short and long-term priorities, and allows the City to assess project implementation delivery. This Plan commits the City, through COIT, to developing more rigorous and consistent metrics for monitoring the delivery and ultimate performance of these initiatives.

The next step toward a more robust monitoring and evaluation approach is the development of performance measures for all COIT approved projects. The Performance & Resources Subcommittee will develop performance evaluation criteria and regularly review IT projects throughout planning, implementation, and upon completion. After their review, the Subcommittee will report back to COIT on citywide project performance on a regular basis. Additionally, previous performance evaluations will be incorporated into the Planning & Budgeting Subcommittee's annual IT project review process. These efforts will strengthen the City's ability to review and monitor current and future IT investments.

The Plan also includes new financial strategies that will strengthen short and long-term planning for IT needs. These strategies build on the recent successes of project consolidation efforts to reduce redundant efforts and create efficiencies. This Plan also recommends a review of all potential on-going support costs for IT project requests. This will allow the Planning & Budgeting Subcommittee to have a better understanding of the short and long-term financial impact of IT project requests. For this reason, this Plan emphasizes critical project development of major IT investments. Early investment in planning and pre-implementation development will help the City invest in both smaller and major capital IT projects.

Ensuring Resilience of IT Systems

San Francisco considers the protection of City business systems and services a high priority. The City is committed to investing in specific efforts to safeguard confidential information and data, and protect our City's business systems from any disruptions, whether from a natural or unnatural event. These efforts include the creation of redundancies to many of the City's major systems: financial, public safety, and communication.

IT GOALS FOR FY 2014-18 ICT PLAN

To make the City's vision of Innovation, Sustainability and Resilience a reality, COIT has identified four Strategic IT Goals for FY 2014-18. Departments must identify a primary goal supported through their project requests when they apply for funding and consideration of their project at COIT. This supports an appropriate allocation of resources across categories, and enables COIT to support the vision and guiding priorities of this Five-Year ICT Plan. IT Goals are:

- **Make Government More Efficient & Effective Through Technology**

In all economic climates, the City strives to become more efficient and effective in all business operations and public service offerings. Technology enables and supports the City's efforts to maximize resources and provide the best possible service to its constituents.

Over the next five years, there are \$205.9 million in project requests that identify *government efficiency and effectiveness* as their primary goal. These projects make up 37.6 percent of the citywide IT project requests. Two major IT investment projects are included within this goal, the City's Financial System Replacement Project and the Property Tax Database Replacement, which together account for \$85.2 million of the total project requests.

- **Improve Public Access & Transparency**

The City recognizes that a foundation of effective governance is providing greater public access to City information and services. Over the coming years, the City will continue to invest in projects to expand online services, improve access to citywide information, and address the digital divide through computer literacy programs and increased internet connectivity services.

There are \$57.0 million in project requests that identify *public access and transparency* as their primary goal. These projects make up 10.4 percent of the total IT project requests citywide. Project requests under this goal include: Mobile Strategies, the Municipal Transportation Agency's Muni Metro Public Announcement and Display System Replacement, and the San Francisco Digital Inclusion Project.

- **Strengthen Security & Disaster Preparedness**

San Francisco considers the protection of City business systems and services a primary objective. The City's IT Security program is a holistic approach to protecting City government services and providing secure, reliable technology solutions for our constituents and visitors.

Over the next five years, there are \$21.6 million in project requests that identify *security and disaster preparedness* as their primary goal. These projects make up 4.0 percent of the total IT project requests citywide. These requests represent 13 projects from eight departments that build on existing security efforts occurring citywide to further safeguard IT infrastructure. Projects highlighted under this goal include: Radio Security Enhancement Project, Security Visibility and Intelligence, and the Systems Recovery Project.

- **Support & Maintain Critical City IT Infrastructure**

Investing in the City's IT infrastructure continues to be a foundational need. The City will invest in this crucial area in order not only to implement new technologies but to also sustain the current systems we have in place today.

The importance of investing in the maintenance and support of the City's IT infrastructure is clearly demonstrated through the \$263.5 million in project requests under this goal. These represent 48.1 percent of the total City IT project requests. This goal includes two major radio replacement projects, which together comprise \$185.5 million of the total requests. Additionally, costs associated with the IT components of two major capital projects, the new Public Safety Building and the San Francisco General Hospital, are accounted for within this goal.

FUNCTIONAL CATEGORIES FOR FY 2014-18 ICT PLAN

COIT is also adopting functional categories, similar to those used by the capital plan.

- **New/Enhancements:** Investments that increase an asset's value or useful life and/or change its use. These typically result from the passage of new laws or mandates, functional changes, or technological advancements.
- **Renewals/Replacements:** Investments to preserve or extend the useful life of existing IT infrastructure.
- **Routine Maintenance:** Projects that provide for the day-to-day maintenance of existing IT infrastructure, including labor costs. Unlike renewals and enhancements, these costs are often funded within departments' operating budgets.
- **Critical Project Development:** Funding for pre-project development and planning. This category continues the City's commitment established through the Capital Planning Program to funding pre-development planning, so that project costs and impacts are clearly understood before a decision is made to either fund or place a project before voters. This is an important addition this year to the

functional categories for COIT to start funding on an on-going basis through the General Fund COIT allocation.

Similar to the City’s Ten-Year Capital Plan, these categories will enable COIT to prioritize renewals, maintenance and critical project development, while also investing in new projects and enhancements as funding permits.

FINANCIAL SUMMARY & RECOMMENDATIONS

Since the adoption of the last ICT Plan, the City’s financial condition has strengthened. However, the City still has a structural deficit with on-going expenses growing faster than operating revenues, which places pressure on the City’s General Fund. This reality of constrained financial resources requires the City to be smart about how it spends its limited resources. To accomplish this, the City must focus on:

- Balancing short-term and long-term IT investments;
- Pre-funding IT investments that require better project planning and sequencing by adding a “critical project development” funding category at COIT. This will also enable the City to gather more information about the condition of existing assets and resources; and
- Identifying additional resources to support IT.

Over the next five years, there are \$548.0 million in IT project requests identified citywide. Project requests are split with 53.6 percent non-General Fund dollars, representing 55 projects, and 46.4 percent General Fund dollars, representing 77 distinct projects. The following table illustrates the Five-Year IT project requests compared to their proposed funding sources:

Table 1: Total Information Technology (IT) Project Requests from Departments FY 2014-18

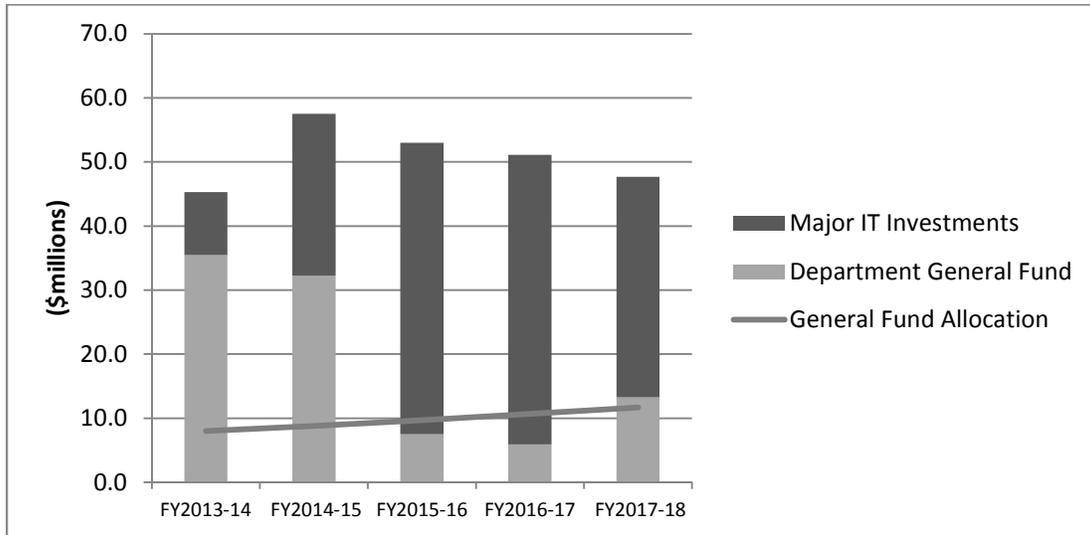
<i>\$ in millions</i>	Initial Project Request	Proposed Funding Source	Difference
Non-General Fund Projects	293.5	293.5	-
General Fund and Citywide Projects	254.5	49.1	(205.4)
Subtotal: IT Project Requests	548.0	342.6	(205.4)

As Table 1 indicates, the 77 General Fund projects requested will cost \$254.5 million over the next five years. These departmental requests are weighted towards the early years of the Plan and far outweigh the COIT General Fund allocation, which is expected to be \$49.1 million over the same period. This leaves a funding gap of \$205.4 million.

A significant portion of the \$205.4 million funding gap is generated by proposals to replace several major legacy systems within the five-year planning window, including the replacement of the City’s Financial System (\$72.2 million), the replacement of the Public Safety Radio system (\$69.0 million), and tax system replacement projects at both the Assessor-Recorder’s Office (\$13.0 million) and Treasurer-Tax Collector’s Office (\$6.0 million). These projects are categorized as major IT investments due to their scale and complexity, longer timelines, and significant financial investment.

Figure 1 shows the General Fund allocation growing over the five-year period, while project requests from departments and for citywide IT investments exceed available funding.

Figure 1: General Fund IT Requests vs. COIT Allocation



Over the coming five years, the City will need to balance short-term smaller departmental requests with longer-term major IT investments. The General Fund allocation at its current commitment level cannot fund both major IT investments and on-going citywide and departmental requests. This Plan recommends that critical project development of major IT investments and on-going citywide and department requests be reviewed and funded within the General Fund allocation of \$49.1 million over the next five years. By investing in the planning and pre-implementation of large IT projects, COIT is empowered to make informed recommendations for the use of other funding sources above the General Fund allocation.

There are several options available to help close the \$205.4 million funding gap caused largely by the major IT investments mentioned above. These options are summarized below:

- **Improve Planning/Increase Collaboration:** Until this planning is complete, the ICT Plan defers larger projects to ensure the project timelines and budgets are solid before committing City resources. This financial strategy defers \$78.4 million in projects over the next five years and also reduces the gap by an additional \$12.0 million through the consolidation of projects and collaboration between City departments.
- **Alternative Funding Sources:** The City should use an allocation methodology for large scale citywide projects so that the costs of these investments are shared between Enterprise Departments and the General Fund. The City should also pursue non-General Fund sources, such as grants and other State and federal sources. This will reduce the funding gap by \$35.0 million over the next five years.
- **Budget Reallocation:** The City should identify one-time funding sources to support IT projects and explore shifting existing IT dollars within the City’s budget to support new projects as older IT projects are completed. Budget reallocation can reduce the IT project funding gap by \$80.0 million over the next five years.

Table 2 below shows the path towards closing the funding gap using these strategies. Similar to the City’s Ten-Year Capital Plan, projects must be sequenced, planned, and scoped or they will be deferred. Once projects are planned, then COIT can make an informed recommendation for funding within or above the current General Fund commitment. Projects listed in the Plan reflect early requests for funding and will ultimately need to be reviewed by COIT during the annual budget process.

Table 2: Impact of Proposed General Fund Financial Strategies on Funding Gap FY 2014-18

<i>\$ in millions</i>	Project Request	Fiscal Strategy	Remaining Funding Gap
Total General Fund Project Requests	254.5	-	(254.5)
Financial Strategies			
Grow COIT GF Allocation by 10% per year	-	49.1	(205.4)
Improve Planning/Increase Collaboration	-	12.0	(193.4)
Project Deferrals	-	78.4	(115.0)
Alternative Funding Sources	-	35.0	(80.0)
Budget Reallocation	-	80.0	-
Total	254.5	254.5	-

As the City works to balance all of these investments, COIT will review all project requests with the financial strategies that are highlighted above. These strategies will allow the City to bridge the funding gap over the five-year period, though not without making trade-offs through project prioritization, sequencing and deferrals. The City will also need to continue to review alternative funding sources including grants, lease-financing and non-General Fund sources. Recognizing that these strategies are unlikely to fill the entire gap, the City should continue to grow its General Fund allocation by 10 percent annually and identify one-time sources to support major ICT investments.