Committee on Information Technology

Special Meeting

May 4, 2018

1 Dr. Carlton B. Goodlett Place, City Hall, Room 305
San Francisco, CA 94102

Agenda

1. Call to Order by Chair
2. Roll Call
3. Approval of Meeting Minutes from April 19, 2018
4. Chair Update
5. CIO Update
6. Discussion: Municipal Transportation Agency Technology Strategy
7. Review of FY 2018-19 & FY 2019-20 General Fund Budget Recommendations
   - Developing Open Source Voting System
8. FY 2018-19 & FY 2019-20 General Fund Budget Recommendations (Action Item)
9. Update to Citywide Cybersecurity Policy
10. Public Comment

3. Approval of Minutes

Action Item

4. Chair Update

5. CIO Update

SFMTA
Municipal
Transportation
Agency

Simplify-Standardize-Optimize

IT Innovation and Operations to support the SFMTA Strategic Plan and San Francisco Transportation

Vision

Premier provider of technical services enabling the Agency to provide excellent transportation choices for San Francisco.

- Sound Integrated Infrastructure
- Premier client-centric support and relationship management
- Manage data as an asset to support the Agency's strategic goals

Mission

IT Services reports to the SFMTA's Chief Technology Officer and is part of the Finance and Information Technology Division.

- IT Services is committed to **service delivery and support** of the SFMTA's mission and priorities by being a Client Centric organization that enables data driven decision making.
- IT Services will achieve **timely and measurable results** using a client-centric approach and a system of effective IT governance.
- Innovation is achieved with **pro-active collaboration** and **forward-looking planning**, and supported by **transparent communication**.

Governance

IT Governance defined:

Establishment of policies, and continuous monitoring of their proper implementation, by the members of the governing body of an organization. It includes the mechanisms required to balance the powers of the members (with the associated accountability), and ***their primary duty of enhancing the overall effectiveness of the organization…***

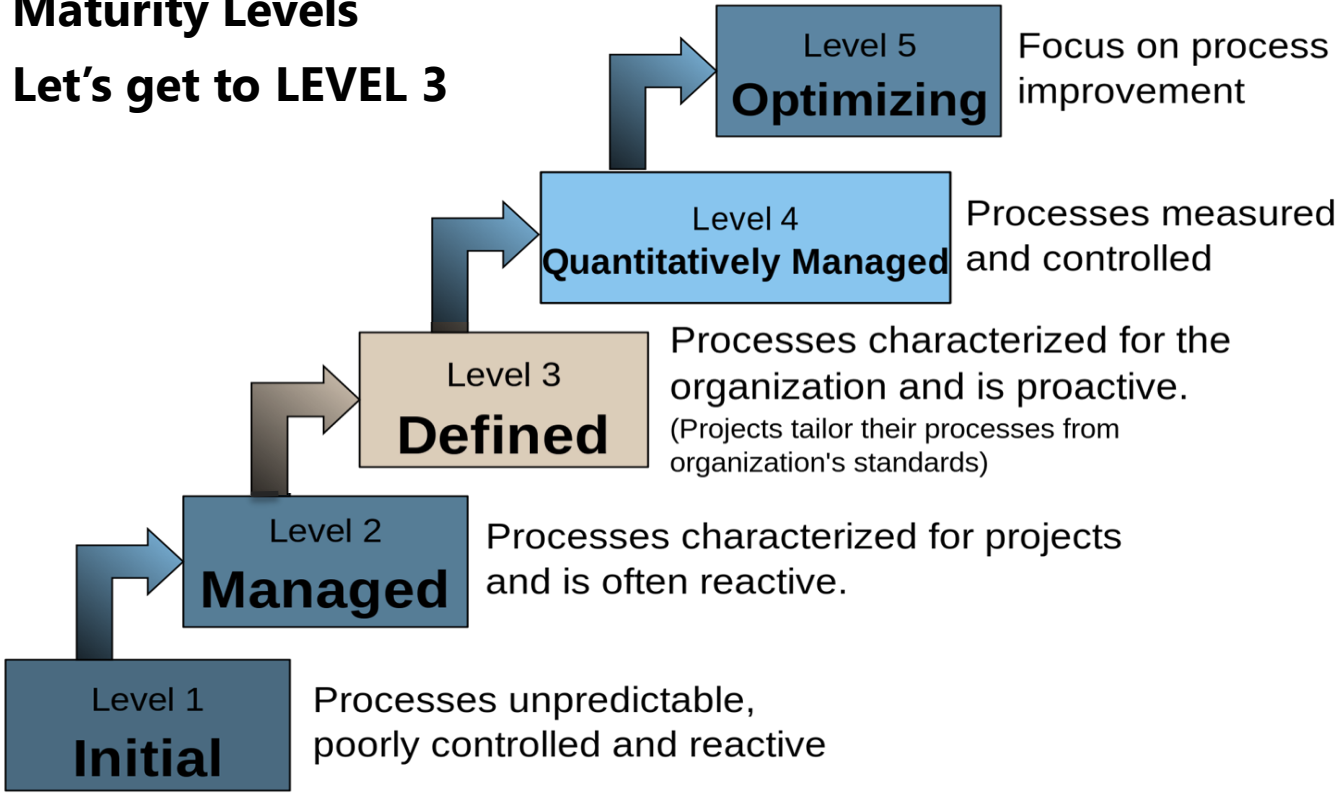
For IT to achieve this vision, the most important step will be to **develop IT governance**.

This doesn't mean arbitrary bureaucracy, rather a system of IT policies to ensure the proper implementation, standardization and accountability of IT's contribution to the agency's vision.

IT at the Right Level

Characteristics of Maturity Levels

Let's get to LEVEL 3



How do we get there?

We need to strengthen our foundation.

IT Operational Management

- Define standards
- Define principles
- Define proactive monitoring of services
- Define KPI for each area

Define our standard architecture

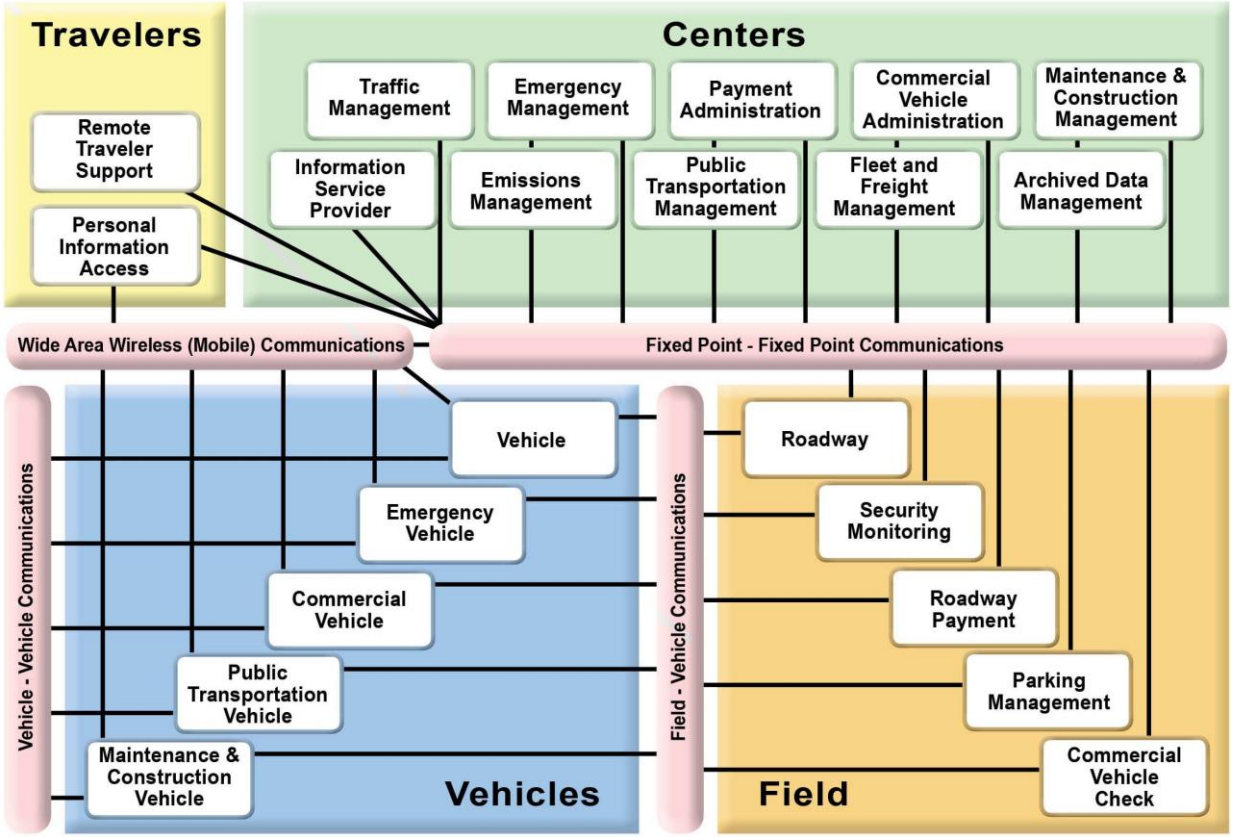
- By Technical Area

Supporting Pillars

Internal Partnerships

- Business units partner closely with Technology Services on all **technology-related procurements and systems developed in-house**
- **Liaise with Business units** on a regular basis to understand needs
- **Ensure training** occurs for front-line employees and others so that they can use technology

Data Bridges to Informed Decisions



Systems Integration

- IT should influence the design of features that improve the reliability of SFMTA applications and systems ensuring cost-effective operations and maintenance of the associated technology.
- Complete system design happens too late, systems are operationalized after implementation with the technology lifecycle not addressed fully.
- The SFMTA has developed and staffed a new **Systems Integration Team** to focus on large technology projects to ensure all components are addressed and systems are maintained appropriately throughout their lifecycle.

Systems Integration

SFMTA technology systems require system integration between projects and existing systems to deliver full functionality

A **lack of systems integration** leads to the following:

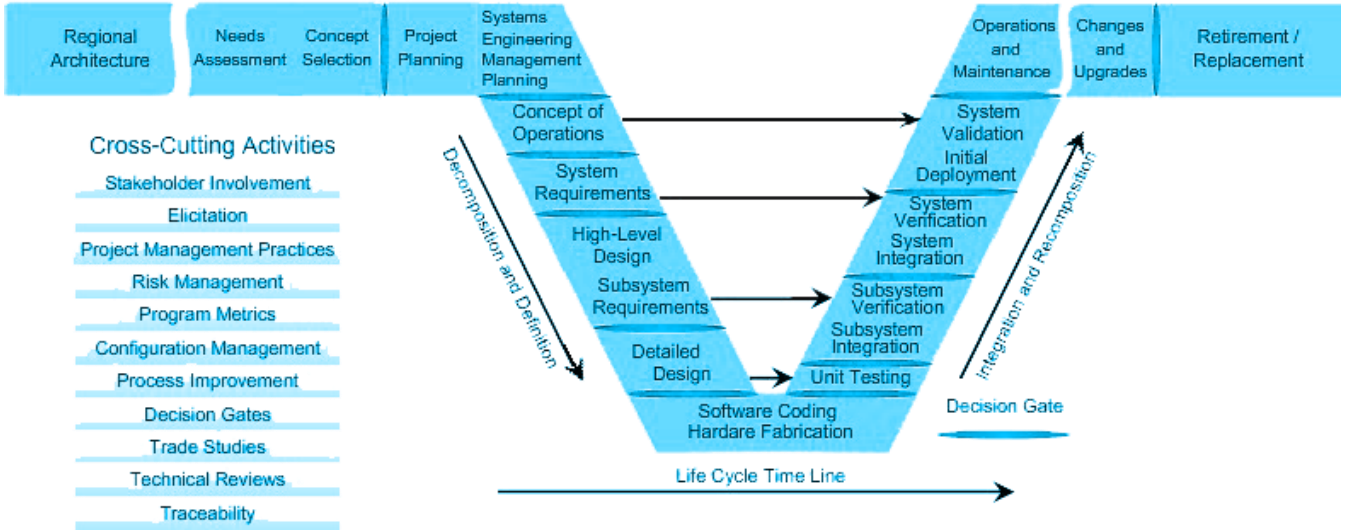
- Out of Date Technology
- Non-Standard Technology
- Inadequate Operational Support

The **benefits of systems integration** include:

- Technology in a State of Good Repair
- Technology Systems are More Reliable
- Technology Systems are Easier to Update
- Technology Systems are Optimized
- Technology Systems are Simplified

Systems Engineering Model

Phase -1	Phase 0	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Interfacing with Planning and the Regional Architecture	Concept Exploration and Benefits Analysis	Project Planning and Concept of Operations Development	System Definition and Design	System Development and Implementation	Validation, Operations and Maintenance, Changes & Upgrades	System Retirement / Replacement



Division	Platform	Request	Status	Strat Plan Alignment
Transit	Fare Payment	New Farebox	Completed	Make transit and other sustainable modes preferred
	ITS / Radio / CAD-AVL	Final cutover to new platform	Rubber Tire Done LRV - June	Make transit and other sustainable modes preferred
Agency	Customer Information System	Replace existing CIS / NextBus	RFP development – June Release	Get to know your Customer – Customer in the Center AND Make transit and other sustainable modes preferred
Agency	ITS Radio Platform	Streaming Video from Vehicle	Launched - in Prototype phase	Create a safer transportation experience for all
Transit	ATCS	Upgrades to Sub Systems		Create a safer transportation experience for all.
		Twin Peaks		
		Central Subway Integration		
Agency	Infor EAM	Asset Management and Work Order System	MOW 90% Complete Rail Maintenance up coming	Improve environment and quality of life in SF
Agency	Intelex	Safety System Software replacement	In progress	Create a safer transportation experience for all.
Agency	Big Data Warehouse Cloud	Finalize components, standards and process	In progress – POC	Create a workplace that delivers outstanding service
Agency	Data Standards, and models	Create	In progress	Create a workplace that delivers outstanding service
Agency	O365	Implement platform elements	Email – done Calendaring – done Skype for Business – 65% OneDrive – 26% Sharepoint – Hybrid – Done	Create a workplace that delivers outstanding service
Agency	Digitization Project support	Sharepoint/Knowledge Lake	In progress	Create a workplace that delivers outstanding service
Agency	DocuSign	Electronic Signature	Done	Create a workplace that delivers outstanding service
Agency	Security Processes and Development/Design Stnd.	NIST, ITIL, etc.	In progress.	Create a workplace that delivers outstanding service
Agency	Video – All	One logical video network – Role Based access	In progress	Create a workplace that delivers outstanding service
Agency	Network / Systems	Eliminate Single points of failure for critical syst.	In Progress	Create a workplace that delivers outstanding service
Agency	Network	Further segmentation of Layer 2 network	In progress	Create a workplace that delivers outstanding service
Agency	SFMTA WiFi	Consolidate networks and optimize upgrade	In Progress	Create a workplace that delivers outstanding service
Agency	SalesForce	Customer Interaction with SFMTA on line	In progress – Temp Signs and Tow – completed. Color Curb next…	Get to know your Customer – Customer in the Center
SSD	SFPark	Upgrade for expansion	In progress	Make transit and other sustainable modes preferred
SSD	PARCS	Upgrade Garages	In Progress	Make transit and other sustainable modes preferred

Appendix One.

Major Programs – Transit Operations and Streets

- **Implement Farebox System**
  - Integration with ITS system - **Completed**
- **Automatic Passenger Counters (APCs)**
  - Integrate with ITS and activate APCs on New Flyer vehicles - **Completed**
  - Partner with Transit to develop a new ridership methodology – **In Progress**
- **Implement Real-Time Passenger Information System**
  - Enhance current passenger information system capabilities with new Customer Information System – **In Progress/RFP**
- **Integrate various systems with the new Radio System**
  - Operationalize Radio System Administration – **In Progress**
  - Streaming Video from Vehicles via ITS Platform – **In Progress**
  - Operationalize Radio System LifeCycle Management – **In Progress**
  - Central Subway Integration – **In Progress**
- **ATCS – Automated Train Control System**
  - Updates – SMC, STC, … - **In Progress**
  - Twin Peak Upgrades – Central Subway integration
- **Agency Asset Management System – In Progress**
- **System Safety Software Update – In Progress**

NOTE: ITS – Intelligent Transportation Systems, SSD – Sustainable Streets Division,

Data Management

- **Define and consolidate DataWarehouse**
  - **Build out BigData Warehouse components and standards – In Progress**
- **Define Data Standards and models**
  - Work with SFData – **On Going**
  - Work with SFMTA Clients to define key data sets – Transit Operations **In Progress**
  - Account for Spatial in all
- **Define platform Standards – In Progress**
- **Define integration models – In Progress**
  - WebServices
  - Point to Point
  - …

Support a Data Driven Decision Making Organization.

Major Agency Programs - Productivity

- **Office 365**
  - Partner with DT to appropriately integrate email - **Completed**
  - Ability to provide email accounts to all including operators easily
- **Implement OneDrive**
  - Documents accessed – Anytime/Anywhere/Any Device Securely
  - Provide access to all SFMTA team members no matter location or device
- **Implement Skype for Business (VoIP) – part of the MS suite – 60% Completed**
  - Instant Messaging
  - Video Chat and conferencing
  - Desktop Sharing and Remote Training abilities
  - Provides ability to train remote SFMTA team members via Webinar
- **SharePoint Workflow and Process Management**
  - DocuSign – Scanning Document Digitization – DLP – Content Management- **In Progress**
  - Continue Business process optimization and paperless vision

Resiliency and Security

- **Develop our security standards**
  - NIST model through ITIL
  - Education
  - Process
- **Support TMC and Video Operations**
  - Support Video Shop - **Completed**
  - Support Security Surveillance Video from any device to any device – **In Progress**
- **Eliminate of single points of failure in infrastructure – In Progress**

NOTE: NIST – National Institute Standards & Technology, ITIL – Inform. Technology Infrastructure Library

Major Programs - Customer

- **Define our customer model**
  - One view to the customer and many views of the customer
- **Define our CRM roadmap**
  - Salesforce Platform Development for Customer Service
    - Temp Signs – **Completed**
    - Tow – Phase 1 – **Completed**
    - Color Curb – **In Progress**
  - Define attributes
  - Prioritize

Get to know your customer – putting the customer at the center.

appendix

Systems Engineering

What is Systems Engineering?

Systems Engineering is an interdisciplinary approach and means to enable the realization of successful systems.

- **Focuses on understanding** customer needs and required functionality early in the development cycle, documenting requirements, then proceeding with design synthesis and system validation while considering the complete problem.
- **Integrates all the disciplines** and specialty groups into a team effort forming a structured development process that proceeds from concept to production to operation.
- **Considers both the business and the technical needs** of all customers with the goal of providing a quality product that meets the user needs.

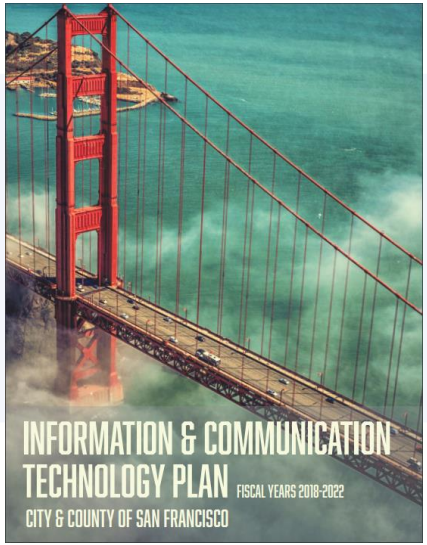
7. FY 2018-19 & FY 2019-20 Budget Recommendations

San Francisco Strategic Goals

Mayor's Vision	FY 2018-22 ICT Plan Goals
- Residents and Families that Thrive - Clean, Safe, and Livable Communities - A City that is Diverse, Equitable, and Inclusive - Excellent City Services - A City and Region Prepared for the Future	- Support, Maintain, Secure Critical Infrastructure - Improve Efficiency & Effectiveness - Increase Access & Transparency

San Francisco Strategic Goals

Budget



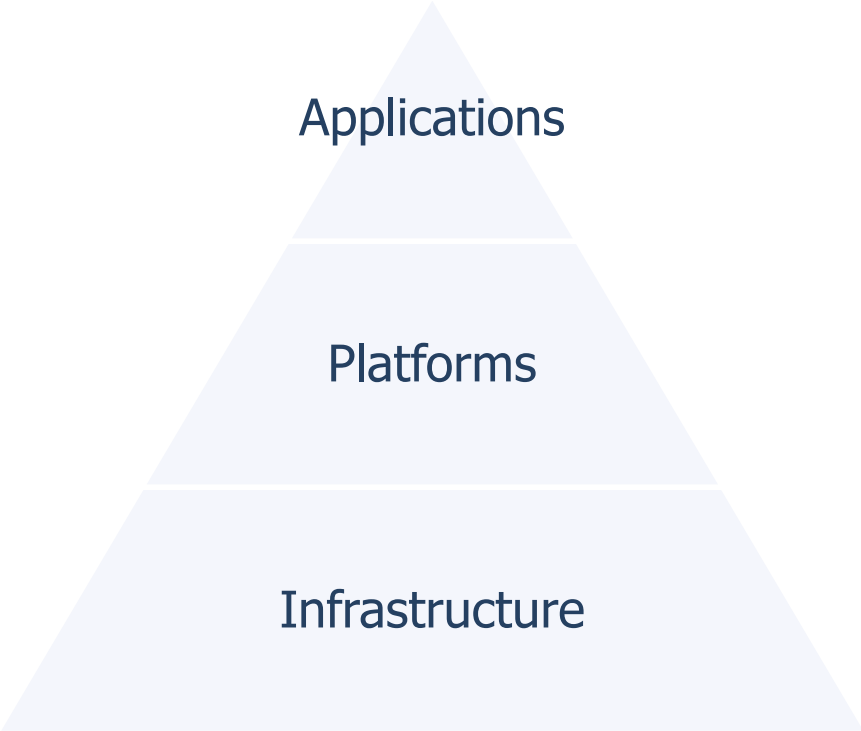
Policy

FY 2018-22 ICT Plan Vision

San Francisco technology supports easy to use and accessible services for every resident, visitor, business, and employee.

San Francisco Strategic Goals

- Support, Maintain, and Secure Critical Infrastructure
- Improve Efficiency & Effectiveness of City Operations
- Increase Access & Transparency of Local Government



Strategic Objectives

- Network & Telecommunications
- Data Centers
- Cybersecurity & Disaster Preparedness
- Hiring Technologists
- Strategic Sourcing
- Data Strategy
- Centralizing Customer Service & Digital Services Strategy
- Digital Equity

COIT Budget Overview

Initial Budget Submission	Department Interviews	Follow-ups & Documentation	Subcommittee Review
January	February	March	April

COIT Evaluation Criteria

- Strategic Value (Goals, Impact)
- Project Benefits (Users, Measures)
- Financial Benefits (Savings, Department Match)
- Regulatory Compliance & Risk Management (Policy, Security)
- Architecture & Development Plan (Development Plan, Data Sharing)
- Department Capacity (Planning, Staffing)

Measuring Performance

Specific	Measurable	Attainable	Realistic	Timely
S	**M**	**A**	**R**	**T**
What is the project objective?	Is data available in an accurate, timely, and cost-effective manner?	Attainable, yet require some stretching.	Focus on results and service outcomes rather than process or activities.	Set annual and project completion targets.

COIT Budget Recommendations

77 Total Projects
▪ 10 Enterprise Projects ▪ 67 General Fund Projects

Subcommittee Recommendations

▪ **17** Request COIT Approval
▪ **29** Recommend Approval Without Funding
▪ **31** Recommend General Fund Support

Major IT Recommendations

Project Name	FY 2018-19	FY 2019-20
Property Assessment & Tax System	12.1	11.7
Radio Replacement Project	8.3	7.5
Telecom Modernization	-	2.4
CAD Replacement	-	0.8
Major IT Allocation	*20.4*	*22.5*
Remaining Balance	**-**	**-**

Note: All figures are shown in $ millions.

Annual Allocation Recommendations

ICT Goal	Number of Projects to Approve	General Fund Recommendation	
		FY 2018-19	FY 2019-20
Support, Maintain, Secure Critical Infrastructure	25	6.9	3.7
Improve Efficiency & Effectiveness	26	2.5	1.0
Increase Access & Transparency	15	3.4	1.5
Total	**67**	**12.8**	**6.2**

Note: All figures are shown in $ millions.

Developing Open Source Voting System

Summary of Options Assessment

A number of delivery options were evaluated during this assessment. We believe that the highest likelihood of project success, from a balance of cost, time to market, and risk, is to…

- Have this program be owned by the city, specifically the **Department of Technology**. Hire or reassign the required expertise to administer and guide this project.
- Enlist multiple vendors for the entire build phase and contract them for ongoing operational support.
- Commit to building the **Open Source community** and only start relying on the community for delivery of new features once it has been proven to be engaged and reliable.
- **Partner with LA County** that has developed human-centered/accessibly designed furniture and electronic voting devices already.
- **Partner with a jurisdiction**, ideally within California, so that the certification is only with one body - the Secretary of State of California. This will allow for sharing of costs.
- **Partner with existing open source voting group(s)** like (but not limited to) OSET Institute to learn from and possibly build upon the assets that they have already created.
- Approach the project in an **agile manner** aiming to provide value as soon as its developed.
- Conduct an in-depth assessment of **Open Source licensing models** and only proceed with an Open Source license when the implications are understood by key city stakeholders such as IT and the legal department.

Key Risks and Mitigation Actions (1/2)

For a project of this nature to be successful, the following risk must be considered with regards to developing, sustaining and securing the system.

	Risk	Mitigation / Decision to make
1	Fundamental Change to Current Solution Delivery Model	◻ Determine if they are willing to make this shift and if so commit to develop this capability and position this capability in the Department of Technology
2	No Specific Requirements for a Voting System	◻ Commit to a Discovery phase for this project and use the output of this engagement to issue an RFP with an amount of detail which will increase the likelihood of multiple vendor's responding.
3	Ability to attract and engage multiple vendors	◻ Have a backup solution in case this approach does not deliver a reliable voting system. ◻ Expect that they will likely have to work with many different vendors to deliver and maintain the entire solution.
4	Ability to establish a healthy, functional, and reliable O/S Community	◻ Decide if they want to commit to building this community and hire at least two initial resources for this effort
5	Certification of the system(s) with the Secretary of State	◻ Conduct a Discovery phase where this interaction model with the state will be documented and negotiated with the Secretary of State. ◻ In addition, the Discovery phase should define a specific phased approach to implementation examining the existing system and the constraints it will impose. This will better define the requirements of how the City of SF and the State will need to work together.
6	Choice of open source license type	◻ Align and agree on the license with which the city is most comfortable and engage key project stakeholders and the legal department for the city to do a full analysis of licensing models and the implications of each.

Key Risks and Mitigation Actions (2/2)

For a project of this nature to be successful, the following risk must be considered with regards to developing, sustaining and securing the system.

	Risk	Mitigation / Decision to make
7	Partnerships effect on delivery timeline (collaborating with other jurisdictions)	▪ Evaluate these partnership options and determine what mitigations can be put in place to maintain control of the requirements and timeline.
8	Legislative constraints of SF being a paper-based jurisdiction	▪ Conduct an analysis of the cost and value trade offs.
9	Transfer of Security Risk	▪ If the City develops a new system from scratch they need to be comfortable with the transfer of responsibility for security from a shared responsibility (vendor and City) today to a complete responsibility. Alternatively, they need to find a build and run partner who is willing to assume this responsibility with them. ▪ Consider if this risk is one it is willing to assume. If not, then look for partners who can share the responsibility and clearly define the liability assumed by each party or parties.
10	Quantifying value of the program	▪ Conduct an assessment and comparison of the alternatives uses for this capital should be conducted to ensure that this investment is appropriately prioritized against the City's portfolio of needs.
11	Complexity of souring vendor support and managing multiple concurrent RFPs	▪ Determine which office within the city has the capacity and capability to run the RFP. ▪ Commit to finding a single vendor for the design phase in order to reduce risk. ▪ Limit the number of RFPs to a the smallest possible number to decrease complexity. A strategy for doing this should be developed in the discovery phase. ▪ Evaluate the optionality for vendors to bid on more than one sub-system so as to generate economies of scale in their detailed design and development.

8. FY 2018-19 & FY 2019-20 Budget Recommendations (Action Item)

City Cybersecurity Program

From: Michael Makstman
For: COIT
5/4/2018

SAN FRANCISCO
DEPARTMENT OF
TECHNOLOGY

Citywide Cybersecurity Policy

- Regulatory and Compliance Needs (selected)
  - Payment Card Industry Data Security Standard - 39 references to security policy requirements
  - IRS Publication 1075, Safeguards for Protecting Federal Tax Returns and Return Information – 53 reference to security policy requirements

- NIST CSF Framework (adopted by the City):
  - *The policies, procedures, and processes to manage and monitor the organization's regulatory, legal, risk, environmental, and operational requirements are understood and inform the management of cybersecurity risk.*

Key Concepts for the Policy Update

Evolution of the existing policy – targeted to address City compliance drivers and the following feedback from the current policy.

Risk-based Approach – recognize the city risk profile as well as unique risk profile of different departments

Implementation Requirements – security framework adoption requires implementation requirements in alignment with the risk profile

Clarify Security Roles – roles related to analyzing risk profiles, defining implementation requirements, and creating a remediation roadmap

Policy Update Focus

Risk-based Approach

Department A Risk Profile

Department B Risk Profile

Department C Risk Profile

Citywide Risk Profile
based on citywide threats and impact to citywide services

Implementation Requirements

Department A Requirements

Department B Requirements

Department C Requirements

Citywide Security Requirements
based on citywide risk profile, compliance drivers, and industry standards

Policy Update Focus

Clarify Security Roles

- Defining Department Security Requirements
- Defining Department implementation roadmap
- Analyzing Department risk profile
- Defining a risk analysis approach

- Analyzing Citywide risk profile
- Defining Citywide security requirements

Policy Update Roadmap

Concept Agreement

4/11

- Discuss and agree on main concept for the policy
- Discuss and agree on go-forward plan

Crafting Language

By end of April

- Craft updated policy statement
- Jointly review and edit policy statement

Policy Draft

Early May

- Create policy v.2 draft
- Final edits from the workgroup to policy v.2 draft

COIT Approval

June

- Pre-socialize policy draft with COIT members
- Update draft based on feedback
- Present in COIT and receive approval

10. Public Comment