6. FY 2018-19 & FY 2019-20 Enterprise Department Overview & Project Requests

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:

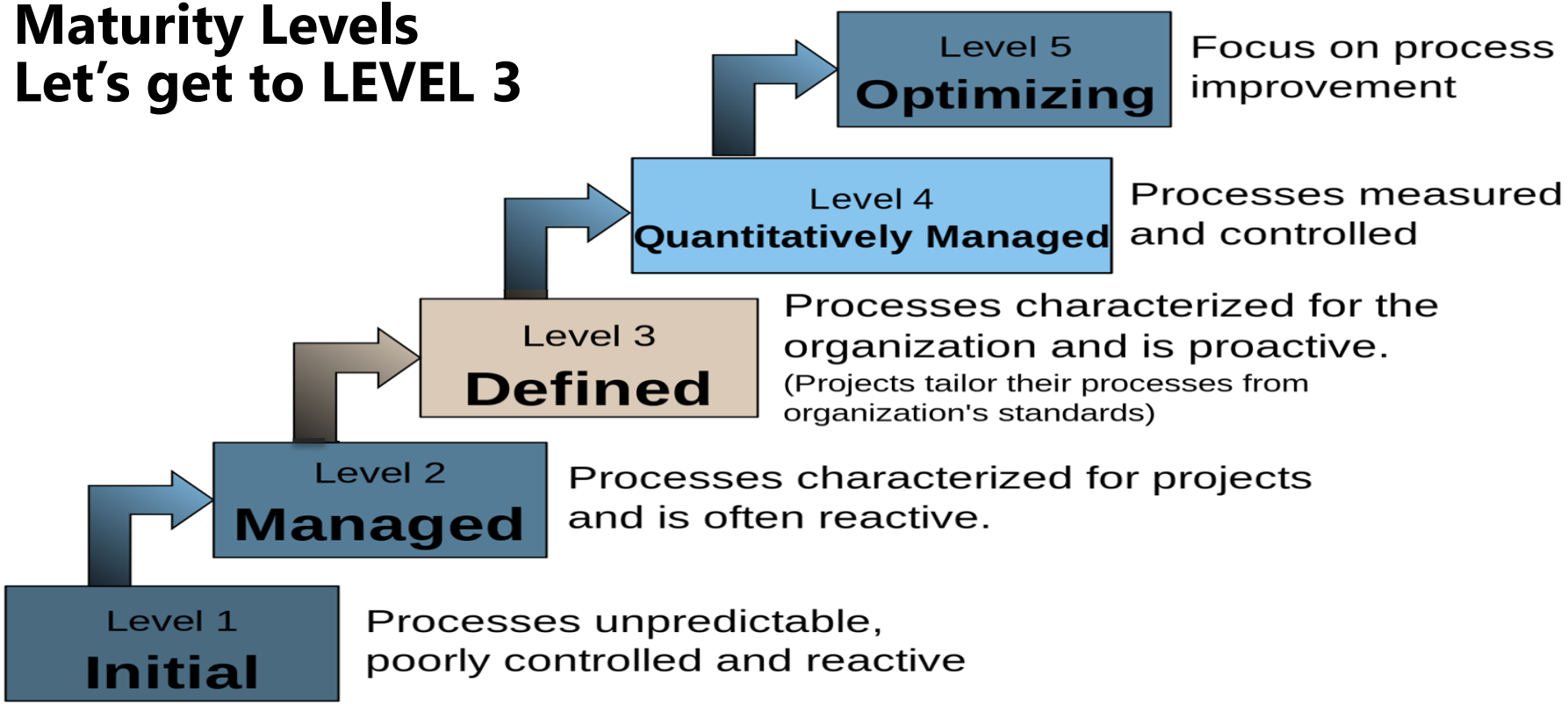
Establishment of policies, and continuous monitoring of their proper implementation, by the members of the governing body of an organization. It includes the mechanisms required to balance the powers of the members (with the associated accountability),
and ***their primary duty of enhancing the overall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

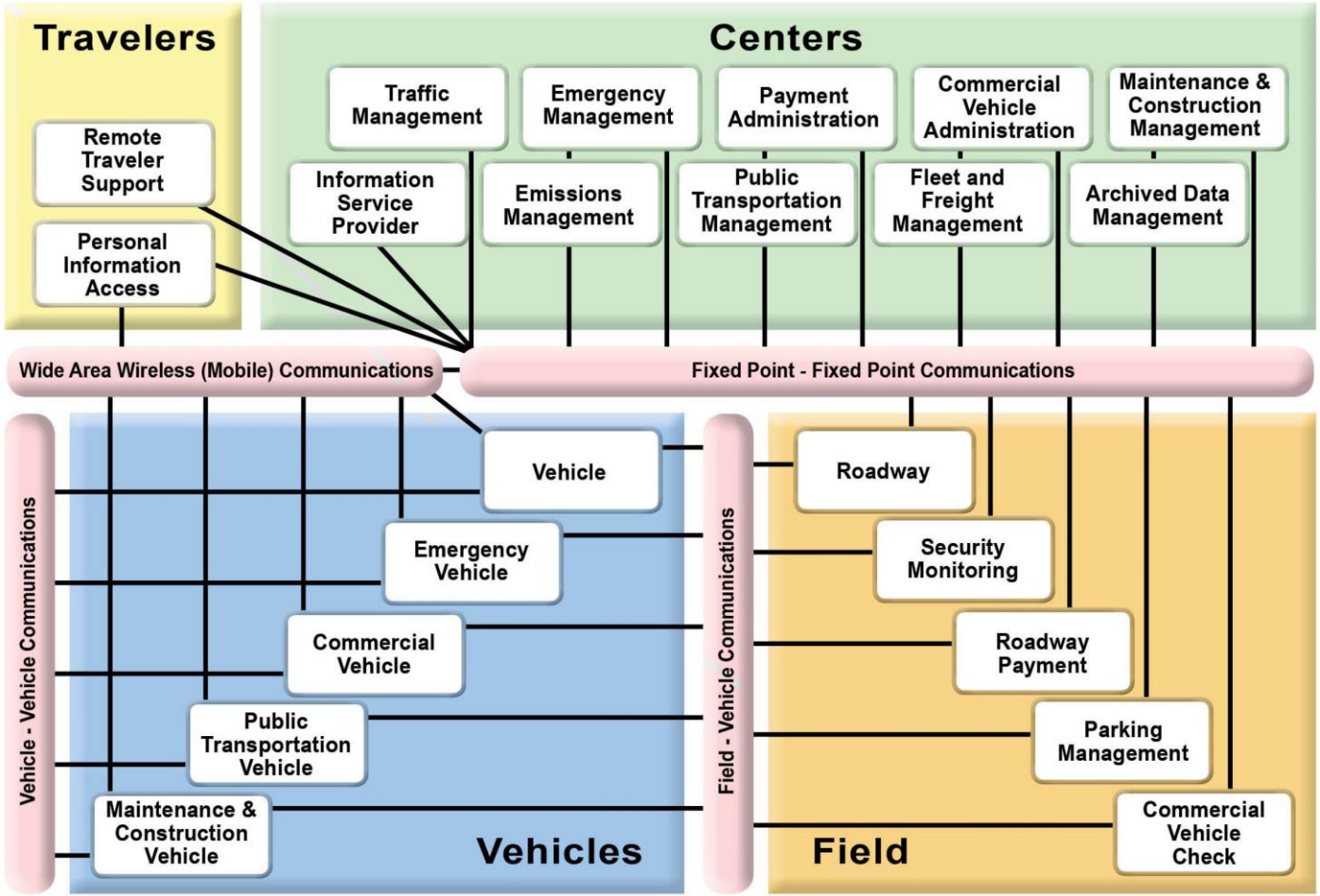
- By Technical Area

How do we get there?

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

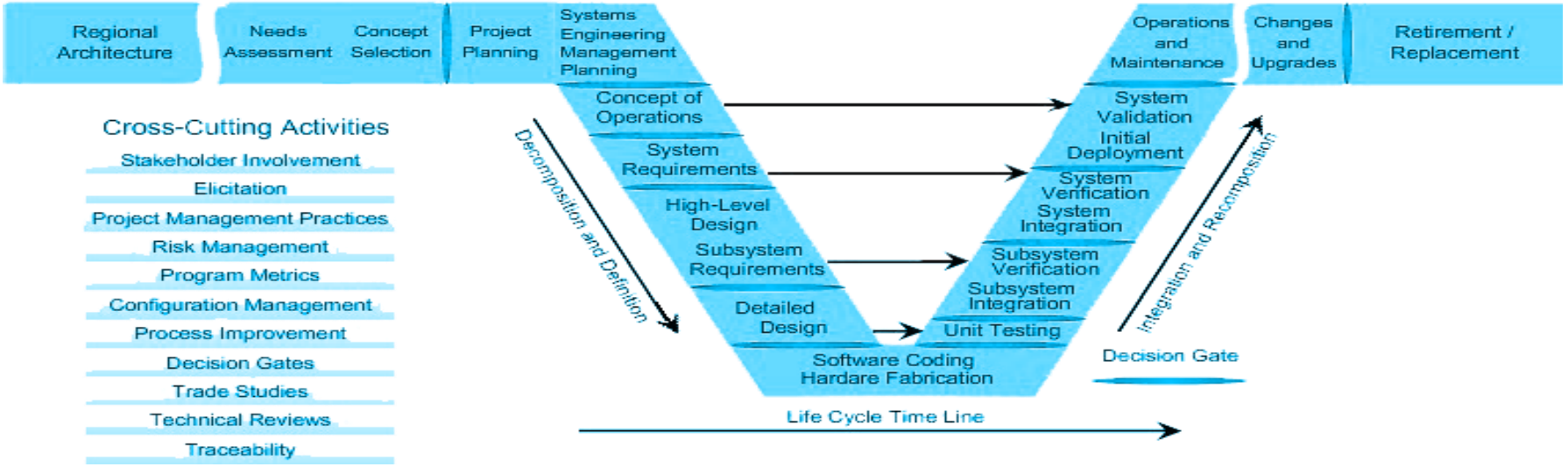
What is Systems Engineering?

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.

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



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

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.

Technology Strategy | March 2018

Airport Mission | *We provide an exceptional airport in service to our communities.*

IT Vision | *To be the most technologically empowering airport in North America.*

- Empowering:
  - **Passengers**: Travel experience control & choice.
  - **Tenants**: Revenue growth and exceptional services delivery.
  - **Commission**: Efficient, effective and secure management of Airport resources & assets.
  - **Concessions**: Growth, development and promotion of businesses.
  - **Community**: Meaningful engagement with our wider Airport community.
- Goals:
  - **Secure:** Secure, cyber-secure and be safe.
  - **Connect:** Connect people, data and information.
  - **Integrate:** Create value from disparate data sources.

Situation | Our analysis of the Airport's situation.

Theme	Description
Persistent Security Threats	Professional technology services and solutions for a safer and more secure Airport.
Asset Utilization	Recognize Airport's virtual assets as a viable source of revenue and value alongside our physical asset base.
Resource Optimization	Use automation to promote better workforce efficiently and effectiveness.
Modern Service Model	Airport as platform for tenant & concessionaire technology services, including Common Use replacement.
Disruptive Innovative	Working with tech innovators to find and harness the next wave of disruptors.

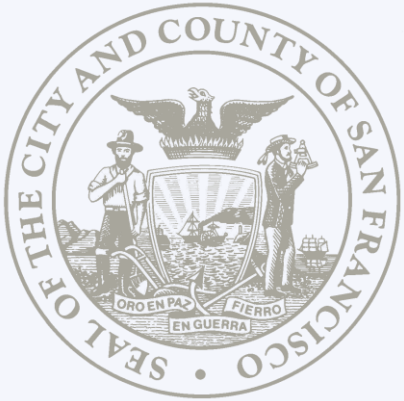
Actions | Our policies direct our technology priorities.

Theme	Description
Persistent Security Threats	Upgrade core security systems. Procure SMS, **mobile P.139** & Notice of Violation solutions. Achieve international cyber-security standards accreditation (ISO27001).
Asset Utilization	Establish Airport Data Portal, the **exchange hub** for all **Airport data with airlines** & partners. Implement airfield vehicle and terminal asset tagging. Roll-out flow analysis, way-finding, multi-lingual & accessibility support.
Resource Optimization	Airport Building Information Management. Landside services automation (TNC, Taxi, Shuttle Bus). Implement Single Sign-On, **Airport Operations App** and Document Mgt System.
Modern Service Model	Expand and improve SFO FREE WIFI, Operational Wi-Fi, core tenant fiber (SONET) network. Upgrade Common Use 2.0 in International Terminal Building (ITB & deploy in T1. Implement **Airport Data Hub** & Microservices Platform. Pilot **Advanced Security Lanes (ASLs)** and **biometrics**.
Disruptive Innovative	Secure academic research partnership. Reaching for Number One (R4N1) Committee to **identify sources of disruption**. Partner with Silicon Valley leaders to prototype new solutions.

Projects | Actions including the following projects

Description	
8968 Network Security **9134A** IT Security Mitigation	**11157** Single Sign On Implementation **11217** Managed Security Upgrade
10674 Airport Information Integration Solution (AIIS) **11222** SFO Data Storage System	
8411A SharePoint ERP Phase 1, Integrated Time and Labor Accounting (ITA) Program	
8410 Distributed Antenna System (DAS) **8590** Telecommunication Infrastructure Airport Wide **9120** Metro Ethernet (Metro-E) **9169** Network Expansion **9170** Network Improvements **9304** Public WiFi – Terminals	**10622** Operational WiFi Improvements **10678** Avaya Communication Manager Upgrade 7.0 **11139** Dense Wavelength Division Multiplexing Transport **11149** Access Layer Refresh 10 Gbps **11153** Internet Hardware Upgrade
10674 Information Technology Enterprise Information Architecture Initiative (IT-EIAI) **11155** Mobile Application Development and Delivery **11158** Data Analytics Compute Processing	
8868 Business Continuity of Operations **9171** Network Monitoring & Management **11154** ITIL/ISO Certification **11156** Comprehensive Support Plan **10563** Common Use Self Service (CUSS) Ticketing Kiosks	**11128** Common Use Self Service (CUSS) Check-in Kiosk Expansion **11211** Terminal Management System Upgrade **11130** Multi-Use Flight Information Display Upgrade **11132** Digital Signage Software System Enhancement

Thank You



SFPUC IT Strategy

Ken Salmon

SFPUC IT Strategy

Project Objective

- Align with the SFPUC 2020 Strategy (https://sfwater.org/index.aspx?page=1078)
- IT Strategy document available upon request

Primary Users & Major Stakeholders

- SFPUC staff and Business Technology Council

SFPUC IT Strategy

Major endeavors

- Asset management includes upgrade, mobile, and GIS
- Expansion of SharePoint Intranet includes Records Mgmt
- Expansion Infor Security, NERC CIP, and COO programs
- Single-Sign-On and remote access improvements
- SCADA inc'l upgrade and mobile
- Projects: Billing, Radio
- Pilots: anyCOMM, Dialpad, AR

SFPUC IT Strategy

Recent Accomplishments

- >99.95% major systems availability, net/systems monitoring
- End user satisfaction of 93%
- Mature IS program: Palo Alto, McAfee ATP, Rapid 7
- Redundant microwave path: City – Peninsula – East bay – Central Valley – Moccasin – HH Dam
- Hosted Automated Water Meter System in cloud
- Mobil Maximo, SCADA Mobile, AWSS SCADA
- Piloted IoT Sigfox net

SFPUC IT Strategy

PHASE	DATES	DESCRIPTION
Phase 1	7/2017	Approval of IT Strategic plan
Phase 2	2017 - 2020	Implementation

SFPUC IT Strategy

Project Budget	FY 2019-20 and 2020-21
Number of FTE	86
FTE Classifications	Various
Salary & Fringe	$14,997,166
Software	$3,404,363
Hardware	$1,694,260
Professional Services	$1,200,000
Materials & Supplies	$1,283,959
Total Project Cost	**$24,927,141 (base)**

Electric Billing

Ken Salmon

Electric Billing

Project Objective

- SFPUC electric billing system is inadequate. Power Enterprise seeks to replace it with the Oracle Customer Care & Billing system for Utilities. This is the same system used by Water and Wastewater.

Primary Users & Major Stakeholders

- Used by SFPUC Customer Services
- Sponsor: SFPUC Power Enterprise Assistant General Manager

Electric Billing

Primary Performance Measure

- Be able to produce automated electronic and paper bills that fully support the complications of the Power business including net-metering and time of use
- Stay within budget and schedule
- Support the expansion of the Power Enterprise

Electric Billing

Recent Accomplishments

- A consulting engagement recommended SaaS Oracle Customer Care & Billing with managed services
- Note: Our current Water/Wastewater Oracle Customer Care & Billing system (being upgraded now) is hosted on prem but the long term plan is to host it with Oracle

Electric Billing

PHASE	DATES	DESCRIPTION
Phase 1	11/2018	Send out Electric Billing RFP
Phase 2	2019 - 2020	Implementation
Phase 3	2020 on	Stabilization (6 months) and ongoing Support

Electric Billing

Project Budget	FY 2018-19	FY 2019-20 and 20-21
Number of FTE	2	2
FTE Classifications	1041 and 1044	1041 and 1044
Salary & Fringe	$304,790	$406,387 x 2
Software	$18,230,430 10 year operating SaaS	-
Hardware	$4,138,271 Capital	-
Professional Services	-	-
Materials & Supplies	-	-
Total Project Cost	**$22,673,491**	**$812,774**

Multifactor Authentication

Ken Salmon

Multifactor Authentication

Project Objective

- As part of the 9 year Information Security program, implement Microsoft multifactor authentication

Primary Users & Major Stakeholders

- All SFPUC end users
- Sponsor: SFPUC Business Services CFO and Assistant General Manager

Multifactor Authentication

Primary Performance Measure

- All end users implemented

Multifactor Authentication

Recent Accomplishments

- Implemented Microsoft Multifactor authentication for system administrators
- Have initial approvals for $240,000/year (additional funds to upgrade to Microsoft Government G3 + SPE package)

Multifactor Authentication

PHASE	DATES	DESCRIPTION
Phase 1	2/2018	Implemented Multifactor Authentication for system administrators
Phase 2	2/2019	Implementation of Multifactor across SFPUC
Phase 3	3/2018	Enable web access to Microsoft suite

Multifactor Authentication

Project Budget	FY 2018-19	FY 2019-20 and 20-21
Number of FTE	-	-
FTE Classifications	-	-
Salary & Fringe	-	-
Software	$240,000	$240,000 ongoing
Hardware	-	-
Professional Services	-	-
Materials & Supplies	-	-
Total Project Cost	**$240,000**	**$240,000**

Maintenance Management

Port of San Francisco

Jerry Burdick

Maintenance Management

Project Objectives

- Retire Oracle EBS
- Cost-by-Facility reporting
- Integrate/interface with PeopleSoft

Primary Users & Major Stakeholders

- Maintenance, Engineering > Department wide

Maintenance Management

Primary Performance Measure

- [Initial]: Retirement of Oracle EBS in FY20.
  - Elimination of risk
  - Cost savings
  - Functional Ownership/technical stewardship

Maintenance Management

Recent Accomplishments

- Project phases & timeline defined
- Discussions with COIT & Controller's Office
- Internal planning & role assignments

Maintenance Management

PHASE	DATES	DESCRIPTION
Assessment	07/2018 - 12/2018	Review/refine processes, define requirements, explore technology solutions.
Implementation	01/2019 - 12/2020	Select application & partner, implement technology solution.
Production	FY21	Post go-live support, historical reporting/archiving, transfer to operational practices
Post-Project	Ongoing	Continuity – training, process alignment, etc.

Maintenance Management

Project Budget	FY 2018-19	FY 2019-20
Number of FTE	-	-
FTE Classifications	-	-
Salary & Fringe	-	-
Software	$200,000	$700,000
Hardware	-	-
Professional Services	$800,000	$900,000
Materials & Supplies	-	-
Total Project Cost	**$1,000,000**	**$1,6000,000**