

# **(d) 2. 2020-2022 Innovation and Technology Strategic Plan**

Smart Cities and Service Improvements Committee

March 5, 2020

Rob Lloyd, Chief Information Officer

Jerry Driessen, Assistant Chief Information Officer

When we last left our IT heroes...



# Starting with a **Clear Vision**



User-Friendly  
City



Inclusive  
City



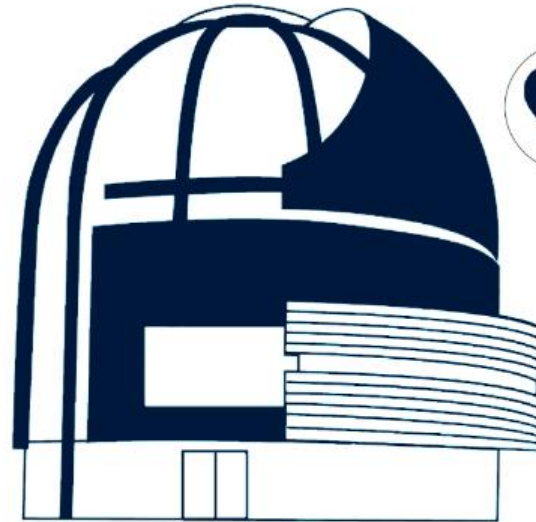
Safe  
City



Demonstration  
City



Sustainable  
City



## San José Smart City Vision

Just as the world looks to Silicon Valley to provide the most creative, impactful technologies to disrupt industries and transform lifestyles, so too can San José become a global leader for civic innovation. Becoming a “smart city” means that game-changing technologies and data-driven decision-making will drive continuous improvement in how City Hall serves our community, and to promote concrete benefits in safety, sustainability, economic opportunity, and quality of life for our constituents.

- Mayor Sam Liccardo

## The Core of San Jose's Approach

CHAMPION  
THE  
CUSTOMER

LEARN  
THROUGH  
DATA

ITERATE  
TO  
IMPROVE

**2016→2020**

**Toward  
Innovation  
in Action**

**Strategy: None → Roadmap → Iteration**

**Traditional Government  
Customer Experience**

**Delightful  
Customer Experience**

**Inefficient  
Processes**

**Agile  
Processes**

**Outdated  
Technologies**

**Enabling  
Technologies**

**Exhausted  
People**

**Engaged  
People**



Smart Cities  
Roadmap



IT Strategic  
Plan



Small  
Wonders

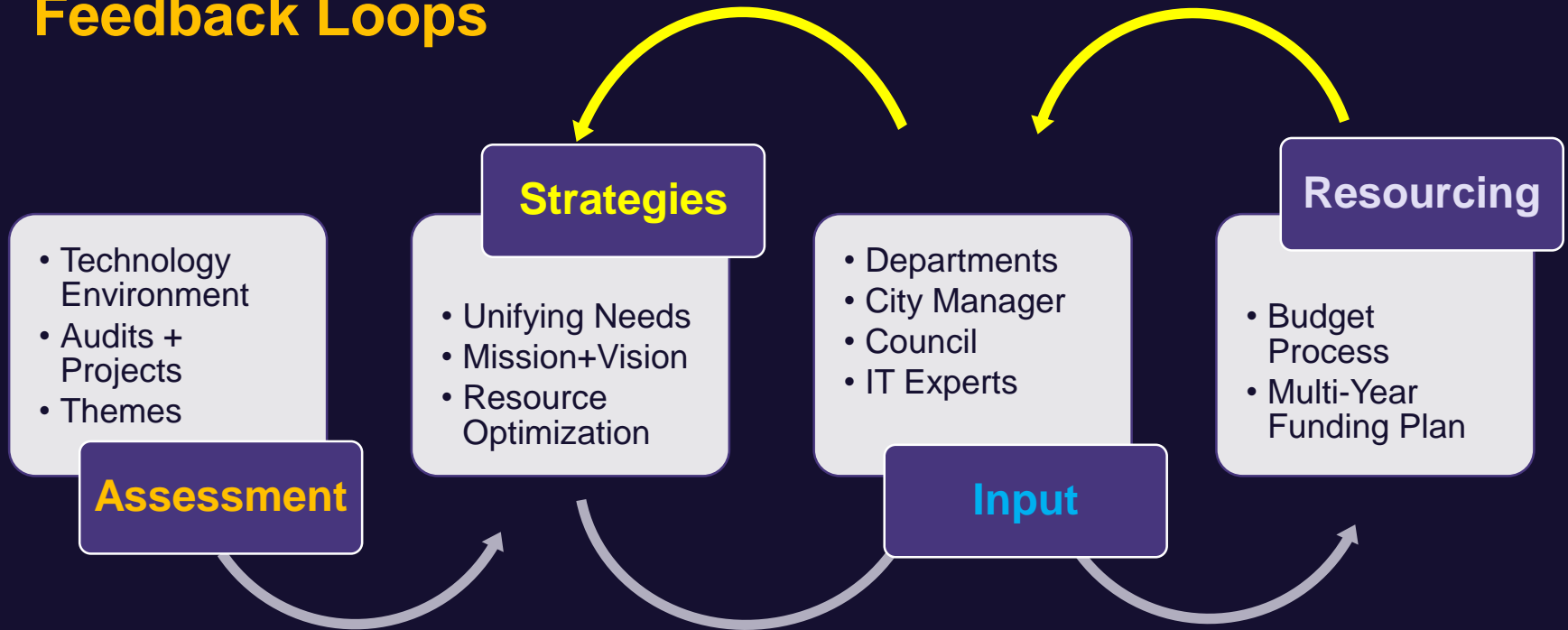
We conducted our  
**Analysis and Planning**



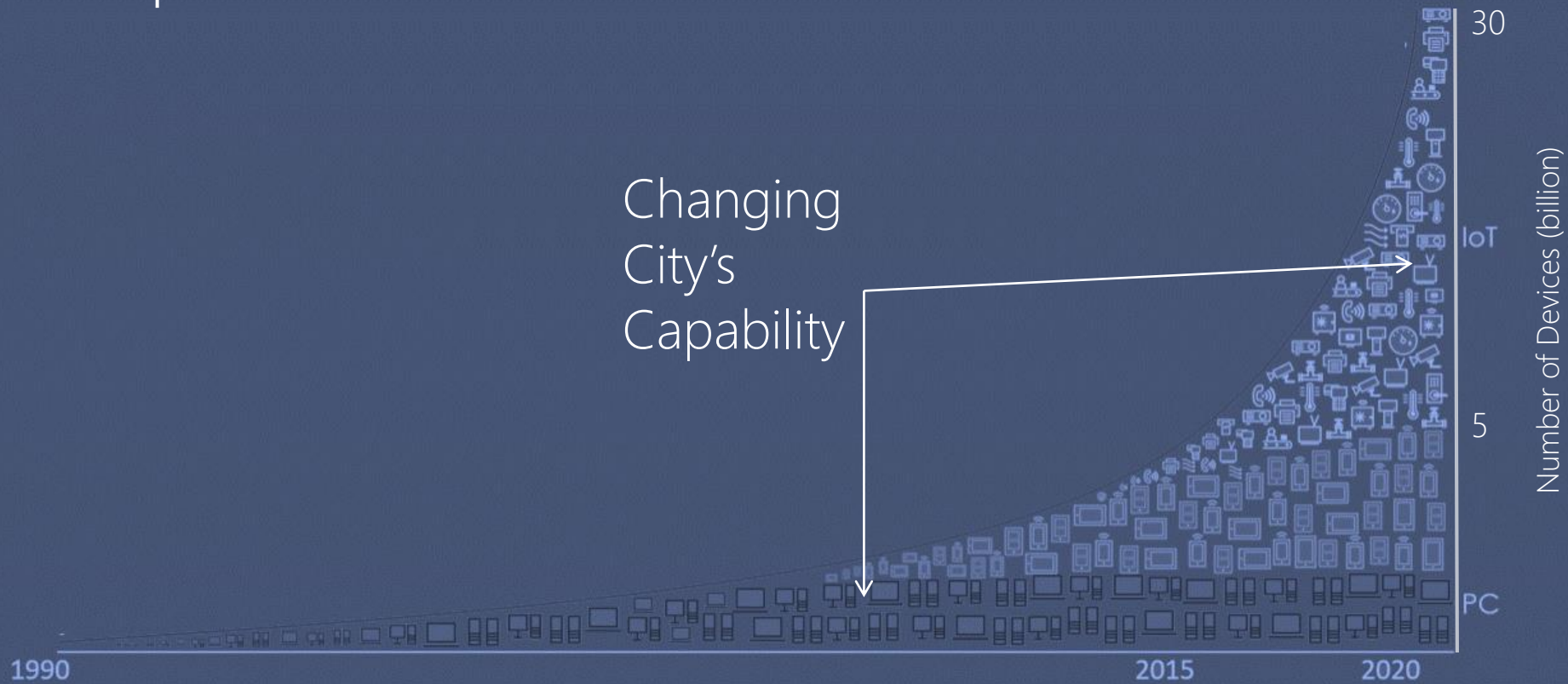


# Innovation & Technology Planning

## Feedback Loops



# Importance of Data to Smart Cities



# Innovation & Technology Assessment

## Audit Findings

- Financial Statements
- Technology Deployments
- Call Handling
- New: Mobile Devices
- New: 911/311 Handling

## Project Management

- 0 Project Management Employees
- Large Project Queue with Low Success

## Resourcing

- Last 2 Departments Funded at Deficits Level



# Technology Services Metrics



74%



<5%



99.1%



8<sup>th</sup> %ile



8AM-5PM



~1.2%



71%



37%

Smart City Vision & Council  
Innovation Cabinet Focus  
Dedicated & Diverse Team  
Departmental Collaboration  
Core Upgrades  
Demonstration Policy

## Strengths

## Opportunities

Willing Partners  
Silicon Valley  
Stable Economy  
Scalable + Efficient Technologies

# Innovation & Technology Assessment

Tech Debt  
Major Resource Limits  
Information Security  
Talent Recruitment  
Project Execution  
Uncoordinated IT

## Weaknesses

## Threats

Cybercrime &  
Cyberdisasters  
Economic Downturn  
Compliance Demands  
Talent Competition

We set our  
**Strategies and Direction**



# IT Strategic Plan SuperEpics



## Brilliant at the Basics

- Reduce Tech Debt
- IT Staffing + Training
- Cybersecurity
- Core Performance
- Data & Integration



## Win Our Races

- Customer-Centric IT
- Product Execution
- Retention + Skills
- Budgeting + Purchasing
- Partnerships



## Change the Game

- IT @ Scale + Speed
- Secure City
- Digital Inclusion
- Unifying IoT Platforms
- Intelligent Automation
- Powered by People + Data
- Privacy

# Innovation & Technology Blueprint

## Enabled Business



### Application and Data Integration



### Data Ecosystem



### Core Applications



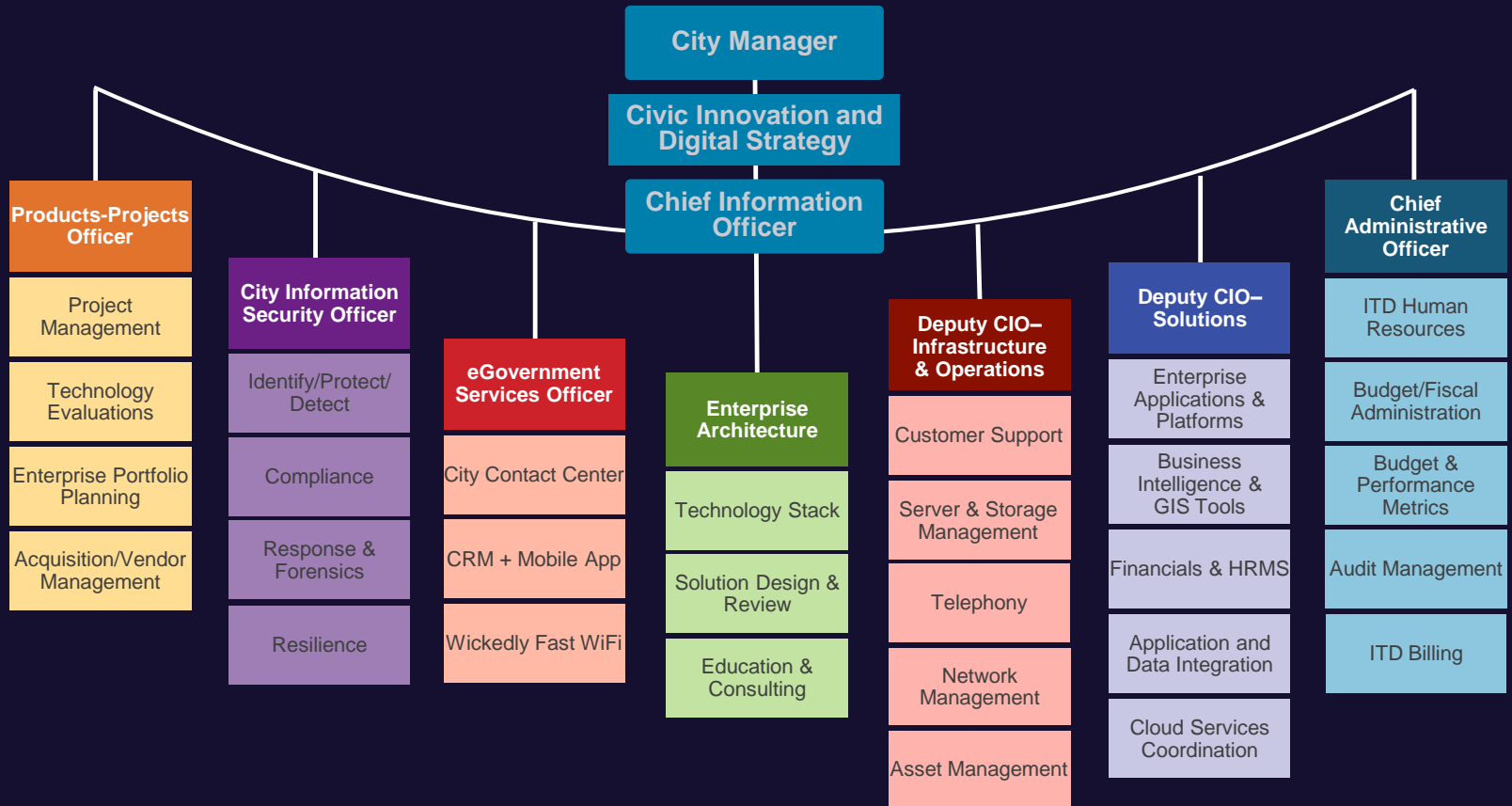
### Infrastructure Layer



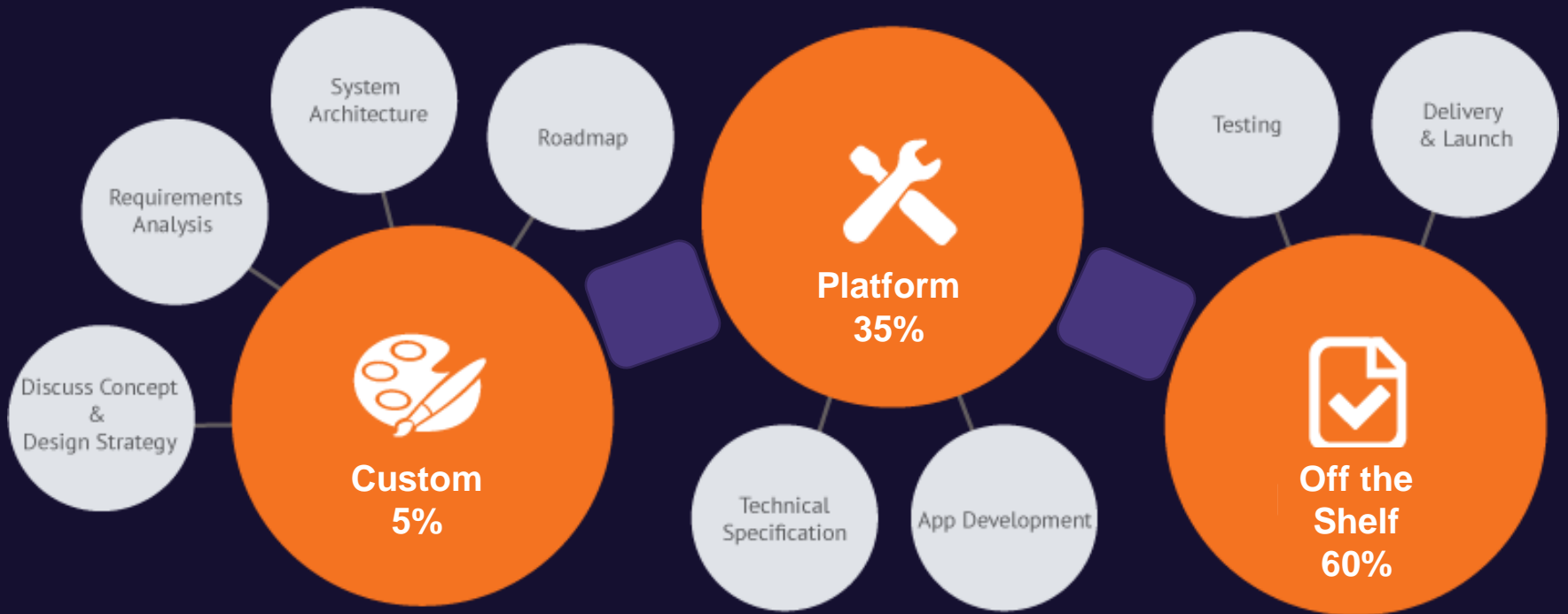
Security



# Innovation & Technology Blueprint



# Business Solutions Strategy



# Validation through IT Advisory Board

## Feedback Themes

- Excellent Assessment
- Goals Do Not Match Resources
- Cybersecurity is Essential

## Advice

- Force Prioritize Core Needs
- Embrace As-a-Service
- Manage Staff Transitions/Pressures
- Emphasize Investments that Meet Multiple Needs
- Engage Groups, Employees, and Other Leaders



# IT Portfolio Map– 2017-2019

(Initial)

	Active						Done	
Innovation Roadmap	Business Tax System	CRM/My San Jose	Integ Permit System	IT Strategic Plan	City Data Environment			
	Facebook Terragraph	Access Eastside 1	Access Eastside 2 + 3	IT Advisory Board	Open Data Architecture			
Team	Availability 99.7%	Proj Success 5%	Engagement 8%ile	Vacancy 36%	Cust Sat 74%			
Secure	Cybersecurity Office	Privacy, Data, and Use	Cybersecurity Policy	PCI Compliance	Cyber Intel Alliance	Cyber Aware Month		
	Incident Response Plan	Continuous Education	Cybersecurity RFP	Cloud Apps Architecture	Secure Processing	Secondary Data Center		
Modernize & Execute	Prod-Project Management	HR Mgmt Upgrade	Bus. Process Automation	Workers' Comp System	3-1-1/CRM System	Business Tax Registration		
	Talent Mgmt System	Payroll Upgrade	Infrastructure Modernization	Utility Billing System	Microsoft Licensing	Server Upgrades		
	Budget System	Revenue Mgmt System	Treasury Mgmt System	Data Portal	Virtual PCs	Modernization Funding		
Audits	Technology Deployments	Mobile Devices	General Controls	External Financials	Call Handling Audit			



# 1-Page IT Strategic Plan

Out of a decade of disinvestment, execute, secure, and sustain the civic solutions that allow the San José community to thrive.

## Strategic Direction

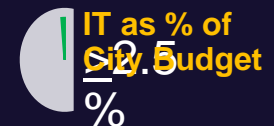
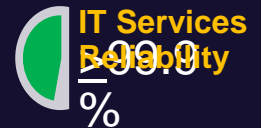
1. **Engage** an exceptional team defined by our solutions, service, & growth.
2. **Re-platform** onto current and responsive technologies and services as our foundation
3. **Secure** to manage evolving cybersecurity risks and operating requirements.
4. **Maximize Investments** through project management and user-centric approaches.
5. **Accelerate** the City's ability to execute and sustain innovation.
6. **Focus** on prioritized business needs
  - Customer Relationship Management
  - Use of Data for Decision-making
  - Business Process Automation

## Underlying Assumptions

1. **Need:** Technology demands are core to operations and are increasing.
2. **Vision:** The San José Smart City Vision identifies IT as a strategic multiplier for our future.
3. **Priority:** The City aims to coordinate its increasing IT investments.
4. **Opportunity:** No city has better assets to make Smart Cities part of a successful community.



## IT Metrics 2017-2019



# After three years

## **Our Results**



# Innovation & Technology Blueprint



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	Budget System	Revenue Mgmt System	Treasury Mgmt System	Data Portal	Virtual PCs	Modernization Funding		
Audits	Technology Deployments	Mobile Devices	General Controls	External Financials	Call Handling Audit			





# IT Portfolio Map– 2017-2019

(Update: 2/2020)

	Active			Done					
<b>Innovation Roadmap</b>	Integ Permit System (N)	Open Data Environment (N)	Facebook Terragraph	Dev Services Transform A7	Business Tax Amnesty	New City Data Portal	IT Strategic Plan	My San Jose 1.X	Access East Side 1
					Youth Viol. Data Story	CEVP Data Story	Transport Data Story	IT Advisory Board	Open Data Architecture
<b>Powerful Team</b>	Availability 99.1% <span style="color: green;">↑</span> 99.6%	Full C3PO Division (N)			ERP Staffing	Proj Success 5% <span style="color: green;">↑</span> 81%	Engagement 8%ile <span style="color: green;">↑</span> 27%ile	Vacancy 36% <span style="color: green;">↑</span> 14%	Cust Sat 74% <span style="color: green;">↑</span> 86%
<b>Secure &amp; Reliable City</b>	Privacy, Data, and Use (N)	Security Training Practices	Power Vuln Planning (N)		Security Scanning	Cybersecurity Team	Secondary Data Center	PCI Compliance	Cyber Intel Alliance
	Cybersecurity RFP	Citywide PC Replacem. (N)	Citywide Server Patching (N)		Mobile Mgmt	City Hall Wireless	Incident Response Funct	Cloud Apps Architecture	Secure Card Processing
					Security Training Awareness	Bus Email Compromise Sol	Priority Anti-Malware	IT Disaster Recov Exercise	Critical Sys Contin Plans
<b>Modernize &amp; Execute</b>	Infrastructure Modernization	Bus Process Automation		Arcadia	eSig Policy & Ordin	Prod-Project Management	HR Mgmt Upgrade	Talent Mgmt System	Payroll Upgrade
	Productivity & Collaboration (N)				Virtual PCs	Budget System	Treasury System	Revenue Mgmt System	Work Comp Sys/Vendor
<b>New Priorities</b>	911 to 311 Transition (N)	Access East Side Phase 2 (N)	Access East Side Phase 3 (N)	Electronic Time Clocks	Mobile Collab Platform	Microsoft Licensing	Utility Billing System	3-1-1/CRM System	Business Tax Registration
	Modernization Fund	SJC WiFi (N)	FirstNet Pilot + Rollout (N)	2017 Flood Support	City Website Live	Data Engagmt Grant	Transp Analytics Platform	Smart Irrigation	Financials Upgrade
<b>Audits</b>	Tech Deploy. #2 (N)	Mobile Devices	General Controls			CAPUC Energy Audit	External Financials Audit	Cybersecurity Policy	Call Handling Audit
<b>Queue</b>	My San Jose 2.X (Hold)	Business Tax (Hold)	IoT Architecture (Hold)	City Intranet	ERP Direction	Records Retention	Measure T & New EOC	Modern Reprographics	(N) = New

# Progress

## Highlights

- ✓ Support Systems – HRIS, Payroll, Talent Upgraded; On Cloud
- ✓ My San Jose 1.x – Live; Audit closed; Digital Services now running
- ✓ Workers' Comp – System live; Resolved State Audit; Moved to Vendor
- ✓ Utility Billing – Recovery project completed; Live
- ✓ Revenue Management – System migrated; Live
- ✓ Treasury Management – System migrated; Live
- ✓ Compliance – PCI compliance updated; Scanning; Incident Response
- ✓ Budget System – System live; Supporting budget
- ✓ Financial System Upgrade – System live
- ✓ City Website – Live
- ✓ Integrated Permitting System Upgrade – System migrated, Live
- ✓ Clean Energy Customer Handling – Procured; Live with vendor
- Infrastructure Modernization – RFP Award; Active project
- Cybersecurity Advanced Services – RFP in selection; Multi-gov
- Business Process Automation – RFP in selection
- ❖ Business Tax – Project recovery; Supporting ballot and revenue goals

# Updates on IT-Related Audits

## Audits by Year

- 2012 General Controls
- ✓ 2014 Customer Call Handling
- ✓ 2016 Technology Deployments
- ✓ 2016 Financial Statements
- 2016 Mobile Devices
- 2019 911/311 Call Handling
- 2019 Technology Deployments 2

## Council Priorities

- ✓ 12-02 #8– Develop & Test Disaster Data Recovery Plan
- ✓ 12-02 #4– Security Policy and Compliance Actions

# Updates on IT-Related Audits

## IT General Controls (1/2012)

11 Audit Recommendations  
7 Complete/Closed  
4 In Progress (Target: 6/2020)



## Customer Call Handling (8/2014)

13 Audit Recommendations  
13 Complete/Closed



# Updates on IT-Related Audits

## Technology Deployments (03/2016)

9 Audit Recommendations

9 Complete/Closed



## External Audit of Financial Statement (11/2016)

13 Audit Recommendations for IT

13 Complete/Closed



# Updates on IT-Related Audits

## Mobile Devices (12/2016)

16	Audit Recommendations for IT
5	Complete/Closed
10	In Progress (Target: 6/2020)
1	Queued



## 911-311 Call Handling (2/2019)

9	Audit Recommendations for IT
5	In Progress (Target: 12/2020)
4	Complete/Closed



# Updates on IT-Related Audits

## Technology Deployments (11/2019)

10	Audit Recommendations
0	Complete/Closed
10	In Progress (Target: 12/2020)



# Technology Services Metrics

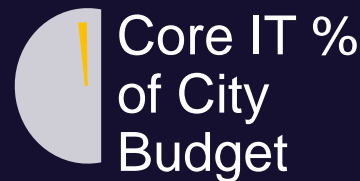


74% ↗ 86%

<5% ↗ 81%

99.1% ↗ 99.6%

8%ile ↗ 27%ile



8AM-5PM

~1.2% ↗ ~2.0%

71% ↗ 47%

37% ↗ 14%

July 2016 → February 2020



Win Our Races  
Change the Game

# Amazing Partners



facebook

Bloomberg  
Philanthropies

Google.org



DELL EMC

ORACLE®

Microsoft

box



AT&T



NUTANIX®



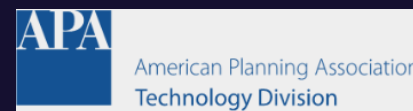
KNIGHT  
FOUNDATION



verizon✓

# Special Honors – 2017-2019

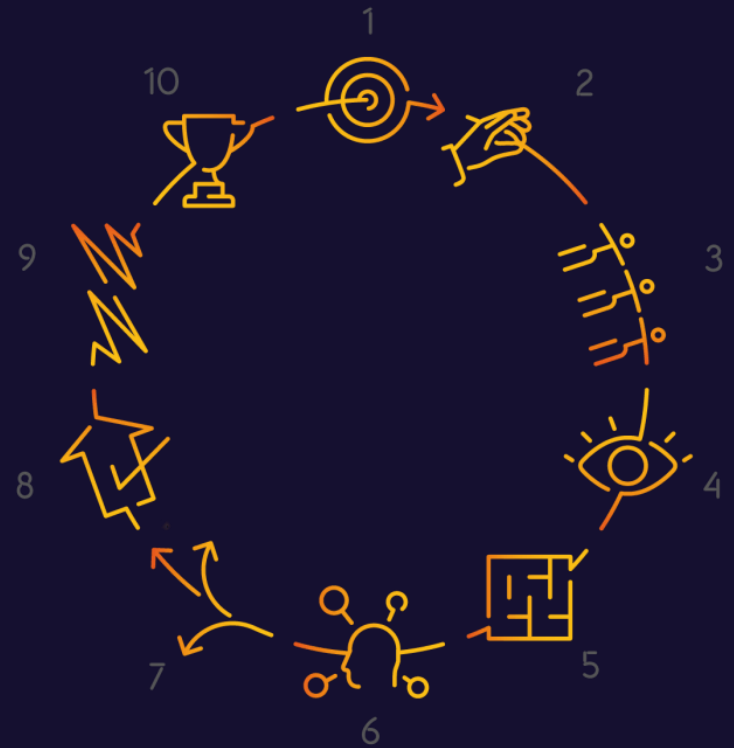
- Center for Digital Government – 3x Top-Ten Digital Cities, #2 in 2019
- StateScoop – Top Smart Communities / Top Cybersecurity Leaders
- IDC – Smart Cities North America Awards, 2x Finalist, #1 in 2019  
Smart 50 Awards, Tax Amnesty & Emergency Vehicle Preemption
- American Planning Association – 2019 Smart City Award of Merit
- Oracle – Modern Customer Experience Awards



**2020**

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**Bridging  
IT Strategic Plans**



# Completing Today's Plan...

## Finishing 2017-2019 Goals

- IT Infrastructure Refresh
- Multi-Gov Advanced Cybersecurity (in Procurement)
- Business Process Automation (in Procurement)

## Efforts that Emerged

- Events: Floods; Power Shutoffs; Coronavirus
- Management: Cybersecurity Risks; 911-311 Transition; San Jose Clean Energy
- New Projects: Utility Billing System; Inclusion WiFi; Integrated Permitting System; Tax Amnesty; FirstNet; Community Engagement through Data; New City Website
- Policy: Privacy

# For the Next IT Strategic Plan...

## **Building to Support**

- City Manager's Enterprise Priorities
- Community Equity
- Climate
- Innovation

## **Acting on 2019 Tech Deployments Audit**

- Direction from City Council
- Oversight of all IT-related projects to maximize success
- Ready for the challenges of multi-department initiatives
- Optimize IT Resource Management

**2017-2019**

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**Lessons  
Learning**



# What We are Learning

## Transformation is Hard

- Iterative projects are most successful
- Highly transformative initiatives struggle
- Run v. Transform staffing contentions
- Process re-engineering not yet a strength

## San Jose Departments Work Together

- Generally low resistance to cooperative efforts
- Success follows a few amazing people



# What We are Learning

## IT Resource Optimization Matters

- Whole Picture: Budget+Purchasing+Staff+Support+Projects
- Tech Debt still holds us back

## A Critical Few Advances Reshape Most

- Artificial Intelligence
- Unifying Platforms (IoT, Infrastructure, Data/GIS)
- Security + Privacy
- Location-aware, Hyper-Personalized Services
- User Experience Design with Process Re-Engineering
- Flexible Work Environments
- Skills and Resources Management

For Your Support  
Thank You!



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# Questions And Feedback