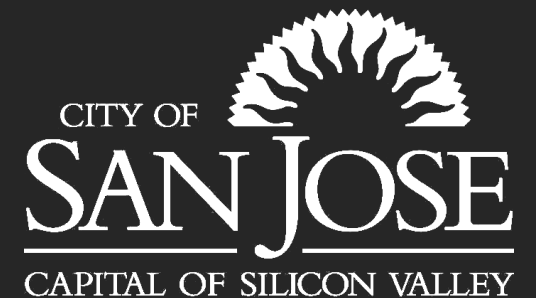


2021-2023 Information Technology Strategic Plan

Rob Lloyd, Chief Information Officer
Jerry Driessen, Assistant Chief Information Officer
Information Technology Department

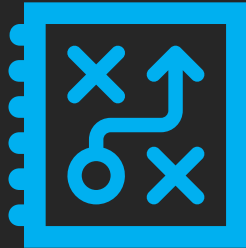
May 6, 2021



Our Approach to **IT Strategic Planning**



City
Roadmap



IT Strategic
Plan



Annual IT
Workplan



Employee
Goals


Information Technology Planning

Feedback Loops

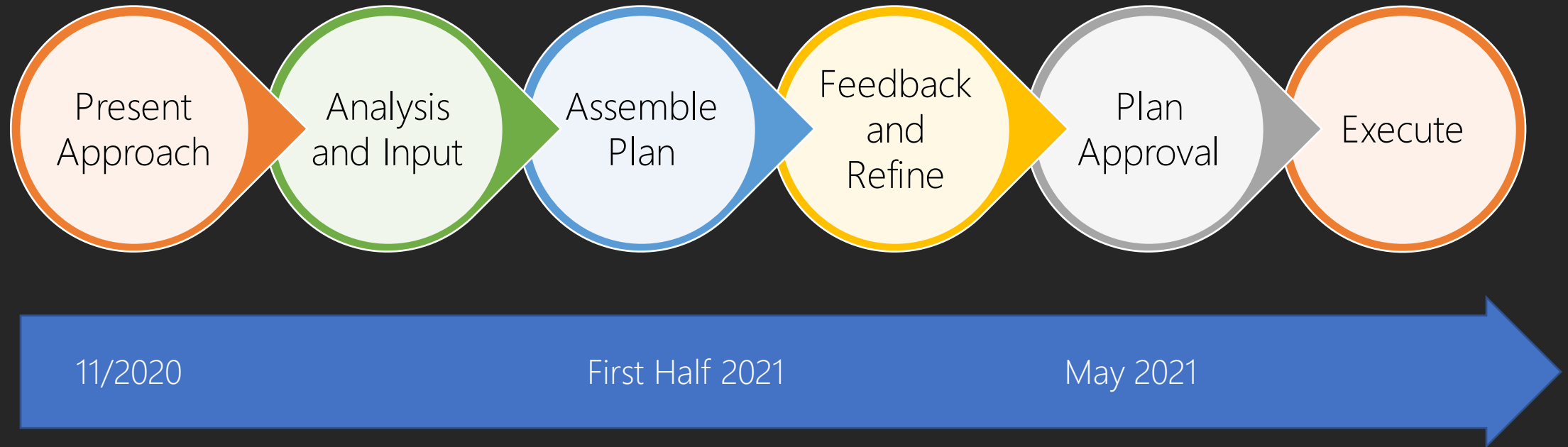


IT Strategic Plan Inputs + Products

- ✓ CMO + Department Input
- Committee + Council
- ✓ Audits
- ✓ Trends + Risks
- ✓ Performance Metrics
- ✓ Harvard – Digital Services
- ✓ Assessment w/ Expert Advisor

-  Strategies and Core Metrics
-  Governance and Optimization
-  Resource Plan
-  Objectives and Key Results

Strategic Planning Timeline

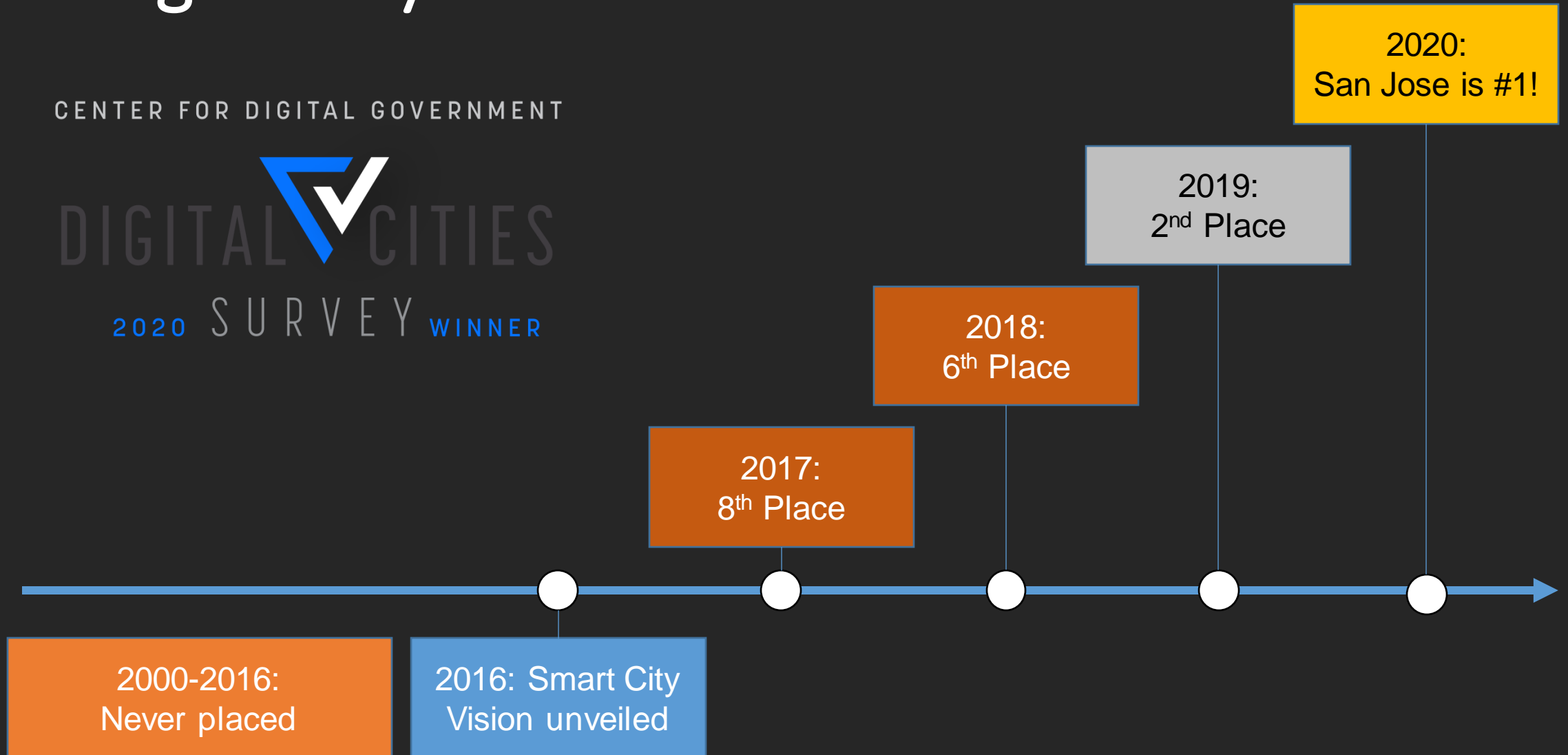


San Jose celebrated 2020 as the #1 Digital City in America

CENTER FOR DIGITAL GOVERNMENT



2020 SURVEY WINNER



City of San José Achievements

- [Center for Digital Government](#) – 4x Top-Ten Digital Cities, #1 in 2020
- [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 Pre-emption
- [American Planning Association](#) – 2019 Smart City Award of Merit
- [World Economic Forum](#) – 2020 Pioneer City



IT Portfolio Map—2017-2020

(Update: 3/2021)

| Active | | | Done | | | | | | |
|------------------------|------------------------------|--------------------------|---------------------------------|---------------------------------|-----------------------------|---------------------------|---------------------------|----------------------------|---------------------------|
| Innovation Roadmap | Dev Svcs Transform | Facebook Terragraph | SJ311 Language Support | Community Data Engmt Grant | Dev Services Transform A7 | Business Tax Amnesty | New City Data Portal | IT Strategic Plan | My San Jose 1.X |
| | | | | Open Data Environment | Youth Viol. Data Story | CEVP Data Story | Transport Data Story | IT Advisory Board | Open Data Architecture |
| Powerful Team | | | Full C3PO Division | ERP Staffing | Availability 99.1% ↑ 99.9% | Proj Success 5% ↑ 84% | Engagement 8%ile ↑ 27%ile | Vacancy 36% ↑ 18% | Cust Sat 74% ↑ 86% |
| Secure & Reliable City | COVID-19 Support | Citywide Server Patching | Cybersecurity RFP | Cybersecurity Training | Security Scanning | Cybersecurity Team | Secondary Data Center | PCI Compliance | Cyber Intel Alliance |
| | | | Privacy, Data, and Use Policy | Power Vuln Planning | Mobile Mgmt | City Hall Wireless | Incident Response Funct | Cloud Apps Architecture | Secure Card Processing |
| Modernize & Execute | Productivity + Collaboration | Modern Reprographics | | Citywide PC Replacements | Security Training Awareness | Bus Email Compromise Sol | Priority Anti-Malware | IT Disaster Recov Exercise | Critical Sys Contin Plans |
| | | | Bus Process Automation Sys | Arcadia Ballpark Tech | eSig Policy & Ordin | Prod-Project Management | HR Mgmt Upgrade | Talent Mgmt System | Payroll Upgrade |
| New Priorities | SJC WiFi | IT Modernization Fund | Infrastructure Systems Plan | Modern IT Infrastructure | Virtual PCs | Budget System | Treasury System | Revenue Mgmt System | Work Comp Sys/Vendor |
| | | | 911-311 Transition | Electronic Time Clock-In | Mobile Collab Platform | Microsoft Licensing | Utility Billing System | 3-1-1/CRM System | Business Tax Registration |
| Audits | Tech Deploy.m.t Audit 2 | Mobile Devices | FirstNet Pilot + Major Rollout | City Website Live | Data Engagmt Grant | Transp Analytics Platform | Smart Irrigation | 2017 Flood Support | Financials Upgrade |
| | | | | | | Recycle+ in SJ311 | Access East Side Phase 2 | Access East Side Phase 1 | Access East Side Pilot |
| | | | 911-311 Audit + Civ Gr Jury Rpt | Tech Deploy.m.t Audit 1 | General Controls Audit | CAPUC Energy Audit | External Financials Audit | Cybersecurity Policy | Call Handling Audit |
| Queue | My San Jose 3.X (Hold) | IoT Architecture (Hold) | Business Tax System | One City Workspace New Intranet | ERP Direction | Records Retention | Measure T & New EOC | | |



Assess to **Support Direction**

San José City Roadmap | FY 2021-2022 | Approved by Council on March 16, 2021

Legend: ■ COVID-19 Response ■ Enterprise Initiatives

| Enterprise Priority | Project | | | | | | | Strategy | | Policy |
|---|---|---|---|---|-------------------------------|-------------------------------------|----------------------------|---|--|--|
| Emergency Management + Preparedness <i>C+ER: Community + Economic Recovery</i> | Vaccination Taskforce | C+ER Food + Necessities Distribution | C+ER Digital Equity | | | | | | | Soft-Story Building Earthquake Retrofit Policy |
| Creating Housing + Preventing Homelessness <i>C+ER: Community + Economic Recovery</i> | C+ER Rental Assistance | Emergency Housing Construction + Operation | Sheltering + Enhanced Encampment Services | | | | | North San José Strategy | | Encampment Management + Safe Relocation Policy |
| Safe, Vibrant, + Inclusive Neighborhoods + Public Life <i>C+ER: Community + Economic Recovery</i> | C+ER Re-Employment + Workforce Development | C+ER Small Business Recovery | C+ER Child Care Learning Pods | Police Reforms Work Plan | San José 311 Service Delivery | Encampment Waste Pick-Up BeautifySJ | Vision Zero Traffic Safety | Equity Strategy Development | Neighborhood Services Access Strategy | Build Back Better + Recovery Taskforce + Al Fresco Forever |
| The Future of Downtown | Google Development | | | | | | | BART + High-Speed Rail Strategy | | |
| Building the San José of Tomorrow: Private Development Services | Align Zoning with General Plan | Development Services Transformation | Major Real Estate Development Projects | | | | | | | |
| Smart, Sustainable, + Reliable City: 21st Century Infrastructure | Pavement, Fire, EOC, Transit Capital Improvements | Regional Wastewater Facility Capital Improvements | Electrical Service for Major Development | Climate Smart American Cities Climate Challenge | | | | Lowering PG&E Above Market Costs for Clean Energy | | |
| Enterprise Priority Foundational | Project | | | | | | | Strategy | | Policy |
| Strategic Fiscal Positioning + Resource Deployment | Federal + State Stimulus Advocacy | Secure City Cybersecurity | Procurement Improvement | Pension Obligation Bond Analysis | | | | Budgeting for Equity | City Roadmap, Budgeting, Accountability, Performance | |
| Powered by People | Continuity of City Services | Workplace Safety | Employee Health + Wellness | Drive to Digital | Effective Teams | | | City Workforce Diversity + Skill Building | | |



Prioritized Backlog | FY 2021-2022

| No. | Initiative/Policy Name (by points and alphabetized) | Points |
|-----|--|--------|
| 1 | Boost San José's Retail Sector (D1) | 7 |
| 2 | Update Council's Wage Theft Prevention Policy | 7 |
| 3 | Anti-Displacement Preference Ordinance | 6 |
| 4 | Local Hiring/Business/Apprentice Utilization Program | 6 |
| 5 | San José Surveillance Ordinance (D2) + Digital Privacy Policy Implementation | 6 |
| 6 | Traffic Calming Policy for Residential Neighborhoods | 6 |
| 7 | Urban Greening Implementation Plan | 6 |
| 8 | Universal Preschool Policy (D5) | 5 |
| 9 | Staffing Analysis (D7) | 4 |
| 10 | Universal Development Fee | 4 |
| 11 | Affordable Housing Construction Policy on City Land (D9) | 3 |
| 12 | Citywide Goals + KPI Dashboard (D10) | 3 |
| 13 | Private Percent for Art | 3 |
| 14 | Transit First Policy Framework | 3 |

| Source of Backlog Items | |
|--|---|
| Remaining, Unfinished FY 2020-2021 Council Policy Priorities [CP] | New Proposed FY 2021-2022 Council Policy Priorities [NP] |
| Referrals of Potential New Policies from FY 2020-2021 Rules Committee [RR] | Deprioritized FY 2020-2021 Enterprise Priority Initiatives [EP] |

Audits

Themes:

- Mix of Weak Controls, Project Execution, Need to Optimize
- Brilliant at the Basics = Resolved 50+ Audit Recommendations in 4 years

I. City **Fully Closed** IT-Related Requirements from 6 Audits

- A. 10-04 Decentralized Cash Handling with 8 Recommendations (2 IT)
- B. 12-01 Office Supply Purchases with 5 Recommendations (1 IT)
- C. 12-02 Technology General Controls with 11 Recommendations
- D. 14-06 Customer Call Handling with 13 Recommendations
- E. 16-04 Tech Deployments: Resources with 9 Recommendations
- F. 2019 MGO External Audit: Resources with 5 Findings (3 IT)
- G. 19-01 9-1-1 and 3-1-1 with 19 Recommendations (4 IT)

II. 16-11 Mobile Devices: Improvements with 16 Recommendations | **8 Open**

III. 19-10 Tech Deployments: Processes with 10 Recommendations | **9 Open**

Lingering Tech Debt

Limiting Systems

- Budget System
- Financials Systems
- Human Resources and Talent Systems
- Payroll System
- Asset Management

Slow and Incomplete Controls

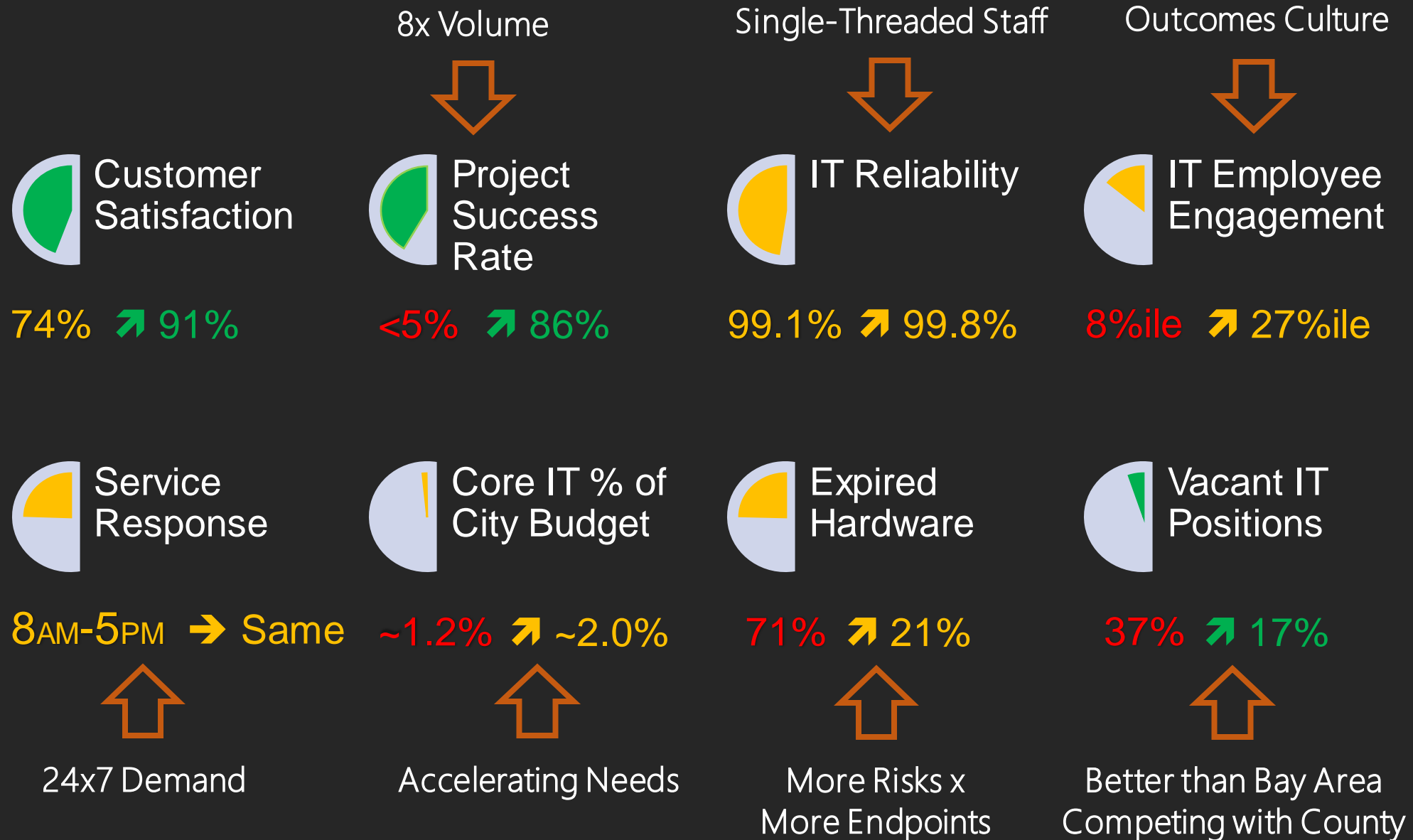
- Asset and License Management
- Patching and Version Control

Resourcing

- Manual Work and Processes
- Lean Staffing = One-Deep + Continuity Risks



Technology Services Metrics



Voice of the Customer

What do you need from technology to support you in delivering the City Roadmap? How must we help your department be what it needs to be in three years?

Recurring Themes

- Equity will Reshape the City and Departments
- “New Normal” for Communication, Work, and Collaboration
- Time to Re-Design Services and Go Digital
- Harness Data for Decisions & Transparency
- Need More IT & More than Ever
- Security Important



The Gaps

- Clarity in How to Set and Meet Equity Goals
- Not Enough People w/ Skills to Harness Data
- Not Enough IT People for Support & Projects
- Investment to Manage *Better* in New Normal

Specific Imperatives

- Police Reform
- Development Services Transformation
- Fire IT Master Plan
- PRNS Data and Staff Support
- Grow Use of GIS / Grow Beyond GIS
- Leap in Industrial Control Management Tech
- Climate Smart Initiatives

Smart City Vision & Council
Clear Enterprise Priorities
Dedicated & Diverse Team
Departmental Collaborations
Modernized Infrastructure
Demonstration Policy

Strengths

Opportunities

Readiness for Transformation
Focus on Equity & Resilience
Superior Access to Partners
New & Scalable Technologies
Procurement/Contracts Innovation

Innovation & Technology Assessment

Extreme Resource Limits
State of Security & Privacy
Fragmented IT Governance
Recruitment/Retention
Uncoordinated IT Services

Weaknesses

Threats

Cybercrime & Disasters
Economic Downturn
Compliance Demands
Talent Competition
Low Staffing Ratios

Tech Trends

Technology Priorities for Cities 2020– Pre-COVID

1. Cybersecurity
2. Citizen Experience/E-Services provision
3. Disaster Recovery/Continuity of Operations
4. Business Intelligence/Analytics
5. Hire and Retain IT Personnel
6. Data Governance
7. Increased Agency/Department/IT Collaboration
8. Infrastructure Modernization
9. Cloud Computing
10. Mobility: Mobile Applications

Technology Priorities for Cities 2020– Post-COVID

1. Cybersecurity ↔
2. Budget and Cost Control ↑
3. Citizen Engagement and Experience ↓
4. Disaster Recovery/Continuity of Operations ↓
5. Business Process Automation ↑
6. Infrastructure Modernization ↑
7. Business Intelligence/Analytics ↓
8. Data governance; Transparency, Open Data ↓
9. Networks: Broadband, Connectivity; Digital Divide ↑
10. Hire/Retain Competent IT Personnel ↓

Technology is really about Community...



Validating **Strategies**

About Info-Tech Research Group

Info-Tech's Toronto Office

Masonic Temple



Info-Tech is a full-service professional IT Research, Advisory, and Professional Services firm, founded in 1997 with approximately 660 full-time employees throughout North America and Australia, largely in Ontario, Canada. Our U.S. office is located in Las Vegas, NV. Our corporate head office is located in London, ON Canada with a secondary location in Toronto, ON Canada. We recently opened our first office outside of North America in Sydney, Australia.

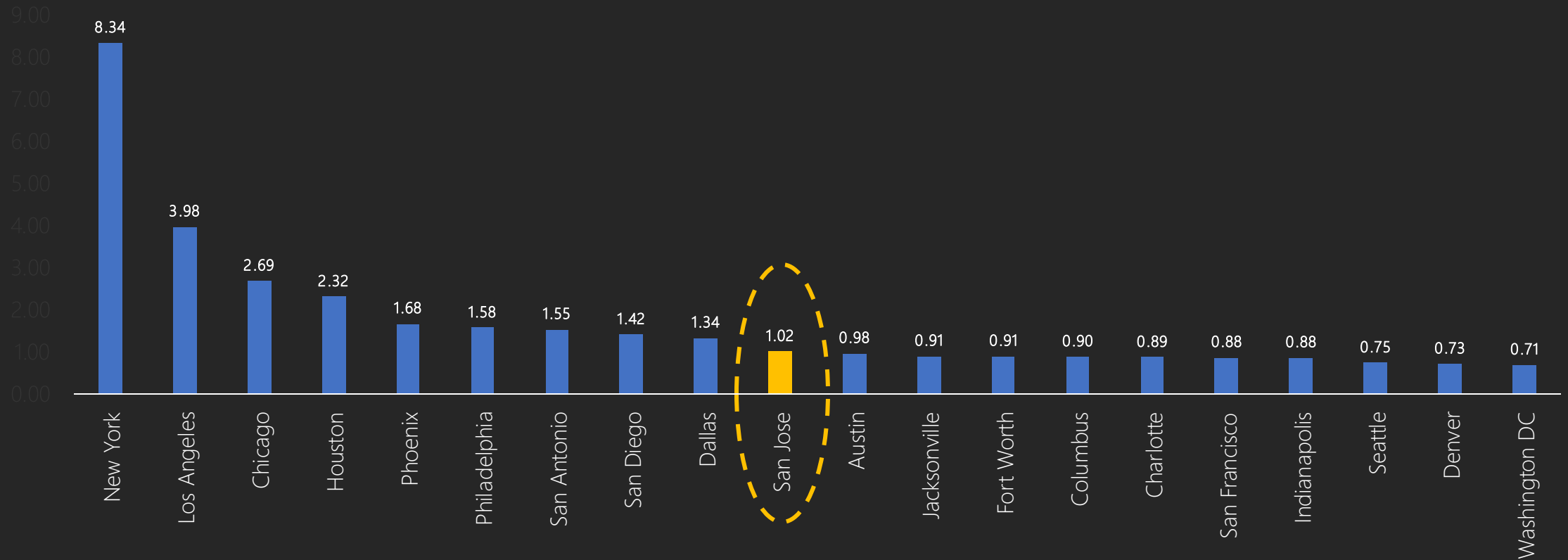
Our services include technology based business research, industry-specific reporting, best practice methodologies, benchmarking, market analysis research, and consulting. Info-Tech offers a practical approach to complex IT and business issues. Our consultants, including veteran IT professionals and CIOs, work side-by-side with you and your team in a co-operative approach that delivers results and leaves you with the tools needed for continued success.

We are the world's fastest growing information technology research and advisory company, proudly serving over 30,000 IT professionals. For more details on who we are, please refer to www.infotech.com.

How Does San Jose Compare?

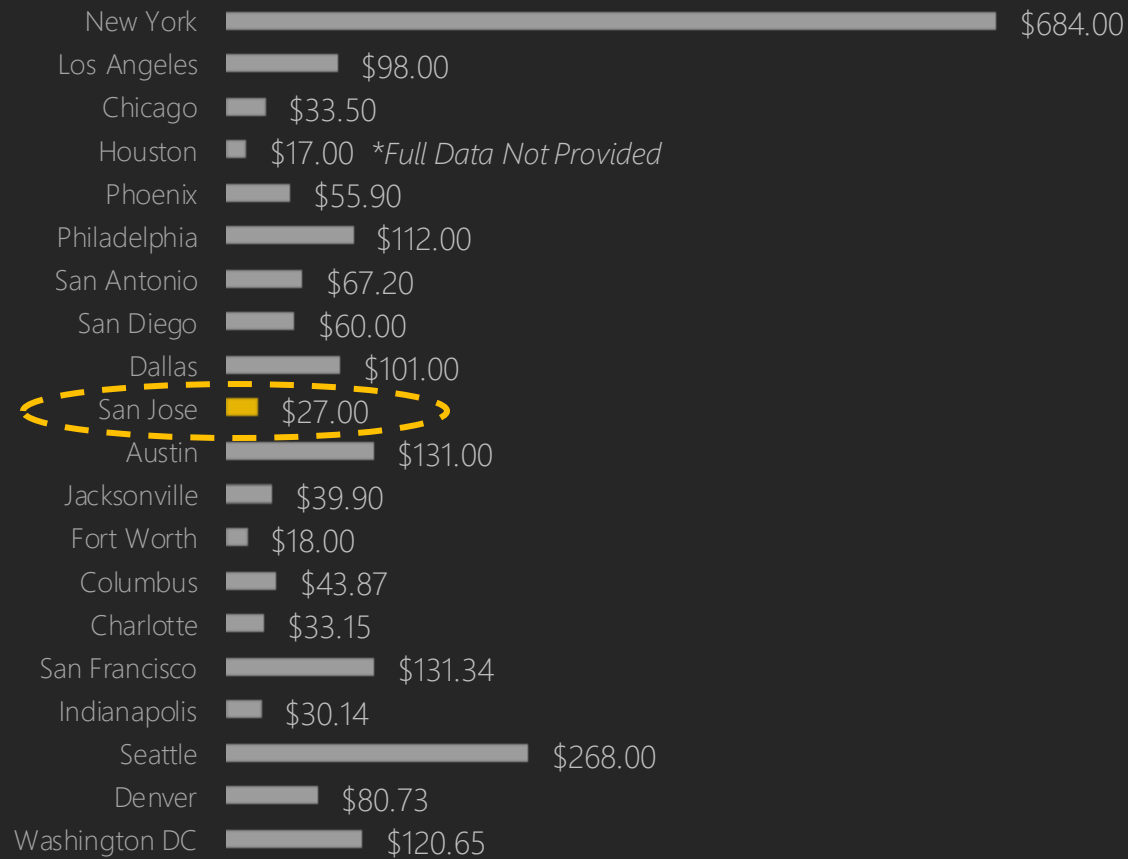
Sample Size: US Cities (by population)

Top 20 US Cities (by population)



TOP 20 US Cities in M (by population, 2019 US Census)

IT Spend Benchmarking of Top 20 Cities

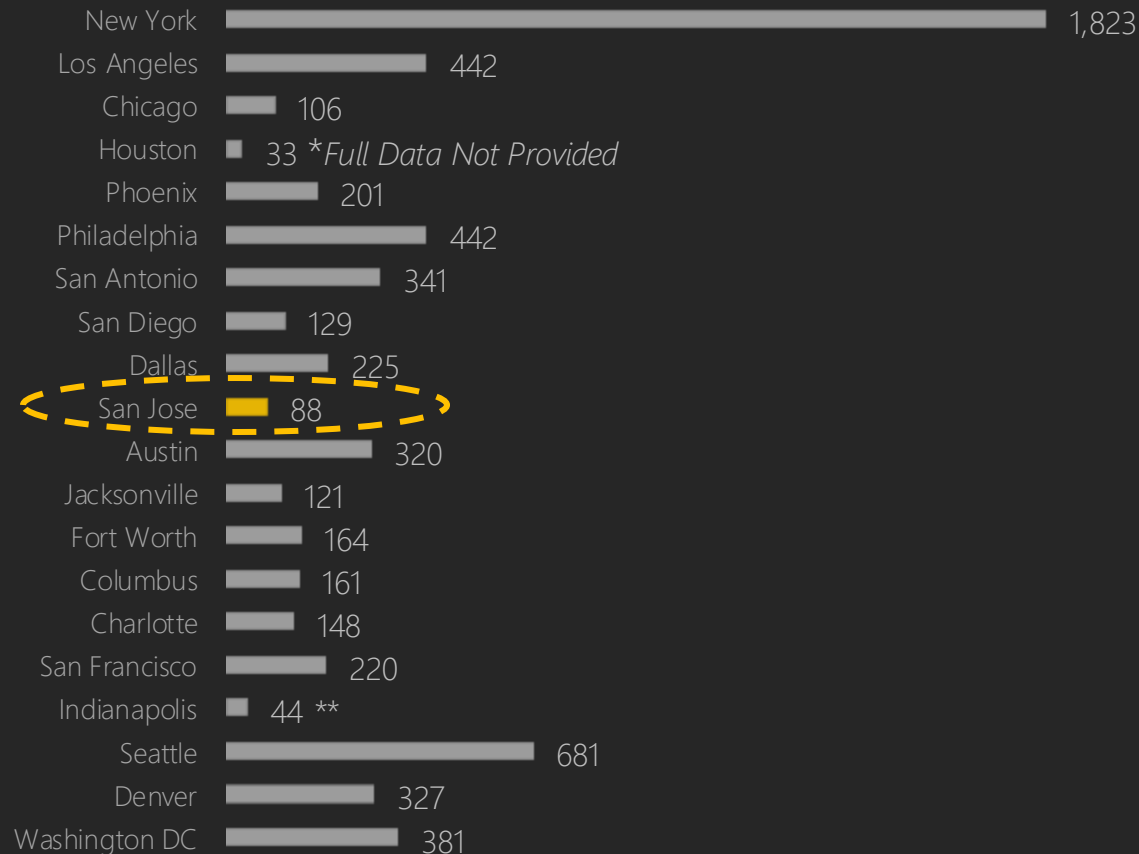


2020 IT Budget (in \$M) for Top 20 US Cities
(population based on 2019 Census)

- Analysis of budgets for top 20 US cities
- Key trends:
 - For cities with population of more than 1M residents, IT spend was between \$17M to \$684M, with **average US IT spend of \$133M**.
 - For cities comparable to San Jose (population between 0.9M to 1.5M), **average comparable cities IT spend is \$52.5M**
 - **Three lowest** IT spend in top 20 were:
 1. Houston: \$17M*
 2. Fort Worth: \$18M
 3. **San Jose: \$27M**
- Gartner Research estimates **2020 Average IT Budget Rate for State/Local governments for organization over \$1B in revenue is 4.10%**

*Houston's IT Budget detail is not fully accessible and verifiable

IT Staffing Benchmarking of Top 20 Cities



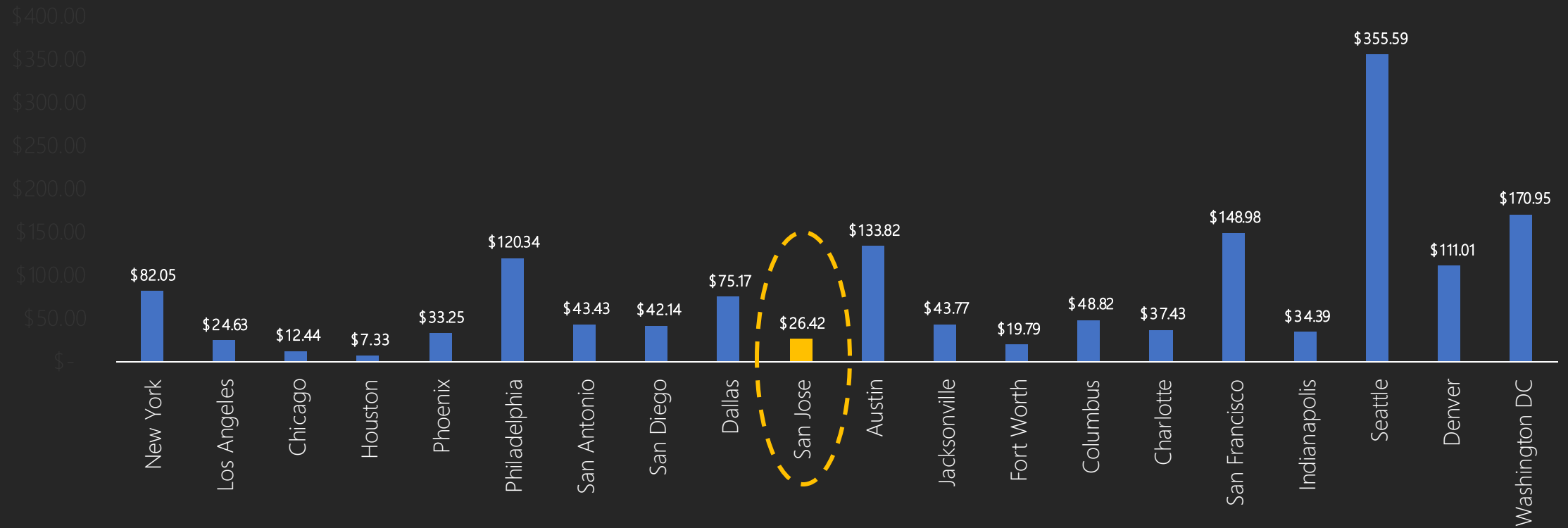
2020 IT Staffing for Top 20 US Cities
(population based on 2019 Census)

- Analysis of staff head count for top 20 US cities
- Key trends:
 - For cities with population of $\geq 1M$ residents, staffing of 33 – 1,823.
Average Large US City IT Staffing of 383 FTE.
 - For cities comparable to San Jose (population .9M – 1.5M), **average comparable Large US City IT Staffing of 175FTE.**
 - **Three lowest** IT budgets in top 20 were:
 1. Houston: 33 FTE*
 2. Indianapolis: 44 FTE**
 3. **San Jose: 88 FTE**
 - Anomaly: San Jose FTE Count Includes 13 FTE in SJ311
- Population data was gathered by US 2019 Census and city budgets were analyzed from respective city reports

*Houston's IT Budget detail is not fully accessible and verifiable; **City-County Shared Service

IT Spend/City Population Analysis

IT Budget by City Population (2020)



**TOP 20 US Cities in M (by population, 2019 US Census)
2020 IT Budget from respective City Budget documents**

Key Indicators of Effectiveness

Key Indicators Outlined

- **Projects:** Budget, Schedule, Scope, ****Value****
- **Applications:** Uptime, Downtime, System Performance
- **Infrastructure (Systems & Network):** Uptime & Availability, Performance
- **Customer Support:**
 - On hold
 - Abandonment rate
 - Outages
- **Customer Satisfaction**
- **Cybersecurity**
 - # of Trainings
 - # of Risk Assessments

- Our assessment outlined the following indicators as the common indicators across most strategic plans
- San Jose provides reporting on the key metrics outlined plus value and outcome measures
- Additionally, **the vacant IT staffing indicator** is a critical metric for San Jose as it competes with talent in the Bay Area
- Cybersecurity also covered by San Jose (internal)

Assessing the City's Analysis...

Key Trends Identified

01.

Enabler vs. Solution Provider

- ❖ Develop a Strategy for the City of San Jose and align strategic initiatives towards digitization
- ❖ Establish integrated service design and deliver policy for UX

02.

Personalized Services

- ❖ Improve connection with citizens of San Jose through single sign-ons
- ❖ Increase levels of trust between government and citizens
- ❖ Develop roadmap integrating essential government service

03.

Processes and Governance

- ❖ Establish a federated governance model with a breakdown of capabilities to be centralized, decentralized across the organization

04.

Digital Services

- ❖ Adopt a Digital Transformation Strategy for the City of San Jose and identify areas to collect and re-use data
- ❖ Adopt digital first strategy

05.

Equity

- ❖ Engage with non-profits and other organizations outside of government to gain insight into their needs and identify potential solutions

06.

Service Delivery

- ❖ Implement an HR plan to increase resources for various IT services
- ❖ Implement HR policies to track skills development and employee engagement

07.

Cybersecurity

- ❖ Build cybersecurity office with an advisory board and workplan
- ❖ Build a Secure City initiative through partnering with cybersecurity leaders

08.

Smart Government

- ❖ Utilize IoT to distinguish duties of various departments

Priority #1: Support City Equity Initiatives

Identify areas of lower income and prioritize. Build awareness around current available resources. Create programs to provide families in need with additional devices given current climate with COVID-19

1

Prioritize Residents

2

Training

Train for digital literacy across the City (internally and externally) and develop local broadband mapping tools

Align with internal teams to be an effective equity player

4

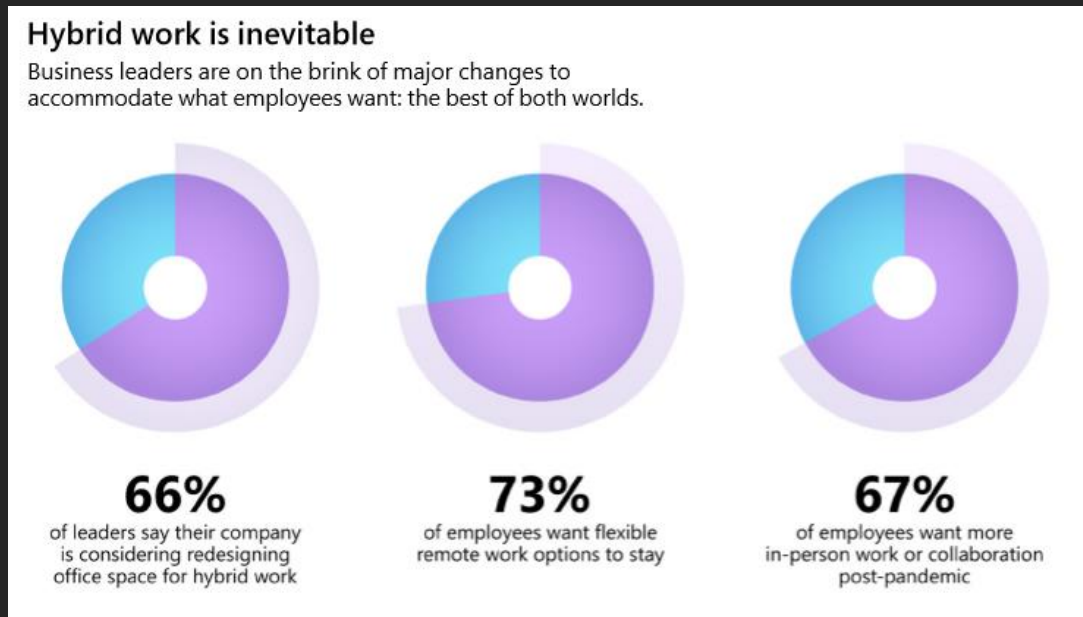
Internal Partnerships

3

External Partnerships

Partner with community based organizations and non-profits

Priority #2: Manage a Hybrid Organization



- The data is clear.
- Extreme flexibility and hybrid work will define the post-pandemic workplace. Employees want control of where, when, and how they work, and expect businesses to provide options.
- The decisions business leaders make in the coming months to enable flexible work will impact everything from culture and innovation to how organizations attract and retain top talent.

Priority #3: Double Down on Digital Services

01.



Ensure greater transparency, openness and inclusiveness of government processes and operations

- ❖ Adopt open and inclusive processes
- ❖ Accountability and transparency regulations
- ❖ Address existing digital divides



03.

Create data driven culture in the public sector

- ❖ Develop frameworks to enable, guide and foster access to use, and re-use of increasing levels of data and statistics

02.

Encourage engagement and participation of public, private and civil society stakeholders in policy making and public service design and delivery

- ❖ Address citizen, organization and resource allocation issues
- ❖ Identify and engage non-government organizations



04.

Risk Management approach to address digital security and privacy issues

- ❖ Increasing confidence in government services
- ❖ Engage relevant stakeholders and integrate digital government strategy in overall public administration reforms



Info-Tech Assessment...

Info-Tech Findings

Info-Tech's supported San Jose's IT Department by conducting an independent assessment of San Jose IT Department's strategic process, resourcing, and draft IT Strategic Plan. Some key findings noted by Info-Tech:

- ❖ No local government has a record of **higher achievement per dollar** of technology investment.
- ❖ San Jose is a **leader in strategic planning** by aligning strategy development with the agile nature of modern IT. While other cities/counties continue to use the outmoded waterfall IT Strategy process and emphasize new technology features, San Jose's IT **strategy focuses on alignment** and provides a mechanism to match IT efforts to evolving demands.

Info-Tech Findings

(Part 2)

- ❖ San Jose's IT strategy process **accounts for both departmental needs and resident needs**, guided by City Council/City Manager priorities. This approach is **vastly different from other cities**, which struggle to align with their departments. The process also positions the IT team to be true to its most important customers – the residents of San Jose.
- ❖ **Digital services will be a key driver** in the future. San Jose's IT team has already positioned to support the city through this transformation ahead of others and has emerged as a leader in the space through robust planning and partnerships

Info-Tech Findings

(Part 3)

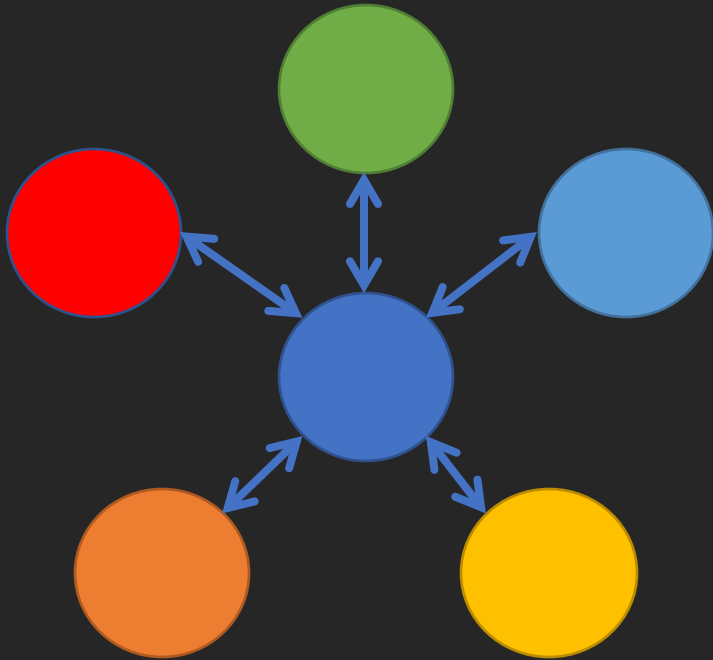
- ❖ Post-COVID 19, **managing a remote organization will be critical** for the success of cities.
- ❖ San Jose **competes with an extreme SF Bay Area Technology market for employees**. Ability to hire and retain staff should be a focus.
- ❖ San Jose **must address IT resource optimization and adding resources where needed** to achieve its March 2021 City Roadmap. Demands outstrip current and projected resources. The City's IT Governance approach should reduce redundancies/inefficiencies to reassign resources.

Addressing Governance...

Governance Approaches

A tradeoff exists between the three models of IT Governance

Centralized



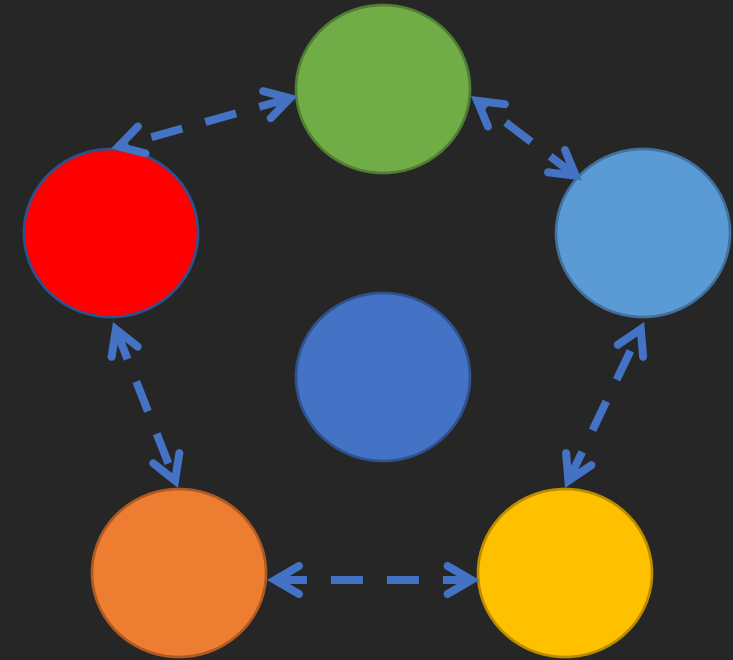
Centralized IT function provide operational speed and simplicity

Federated



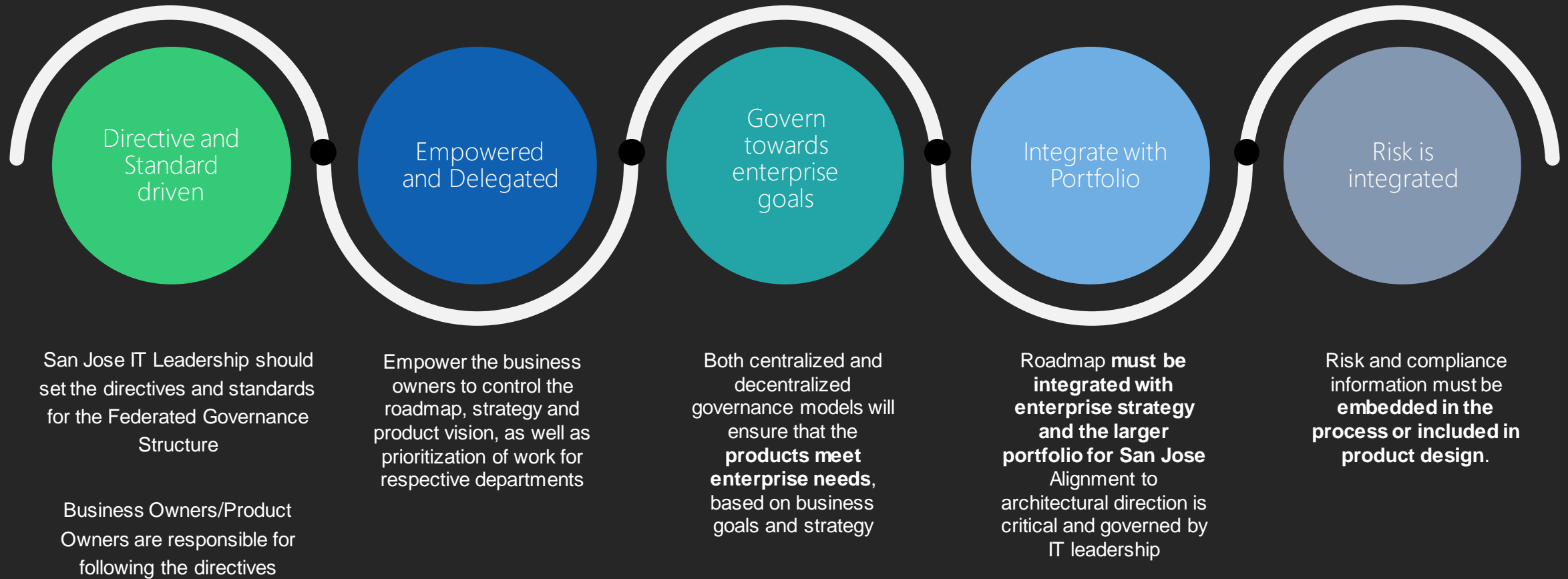
Federated models provide flexibility around common processes, tools, and technologies

Decentralized












Decentralized provides autonomy to departments to innovate w/ "creative waste"

Principles for Federated Governance Model



Recommendation: Governance for San Jose

| | | | | | | | | | | |
|----|---|--------------------------------------|--------------------------------------|-------------------------------------|------------------------------------|--|-------------------------------|------------------------------|--|----------------------------------|
| 01 |  | Strategy & Governance | IT Governance | Strategy | Performance Measurement | Policies | Quality Management | Innovation | | |
| 02 |  | People & Resource Mgmt | Stakeholder Management | Resource Management | Financial Management | Vendor Selection & Contract Management | Vendor Portfolio Management | Workforce Strategy | Strategic Communications | Organizational Change Enablement |
| 03 |  | Enterprise Architecture Capabilities | Enterprise Architecture | Telecom Architecture | Systems Architecture | Data Architecture | Application Architecture | | | |
| 04 |  | Service Portfolio Mgmt | Operations Management | Service Portfolio Management | Release Management | Service Desk & Incident Management | Problem Management | Change Management | Demand Management | |
| 05 |  | Infrastructure Portfolio Mgmt | Asset Management | Infrastructure Portfolio Management | Availability & Capacity Management | Network & Infrastructure Management | Configuration Management | Storage/Cloud | Compute & Virtualization | |
| 06 |  | Information Security & Risk | Cybersecurity Standards & Operations | Identify, Protect & Detect | Prevention & Training | Incident Response & Recovery | Compliance, Audit & Review | Continuity Planning & Drills | Intelligence Sharing w/ Joint Response | |
| 07 |  | Application Capabilities | CORE APPS | Fiscal and Budgeting | People Systems | Productivity | Content Mgmt. | Specialized Systems | Monitoring Systems | |
| | | | Enterprise APPS | Application Management | Systems Integration | Application Development | User Testing | Quality Assurance | Application Maintenance | |
| 08 |  | PPM & Projects | Portfolio Management | Requirements Analysis | Project Management | | | | | |
| 09 |  | BI & Reporting | Data Catalog | BI & Reporting | Data Quality & Governance | Database Operations | Enterprise Content Management | | | |

Hybrid functions are contextual – if clear standards must be met, we recommend centralized IT governance, otherwise decisions can be made at business departments level

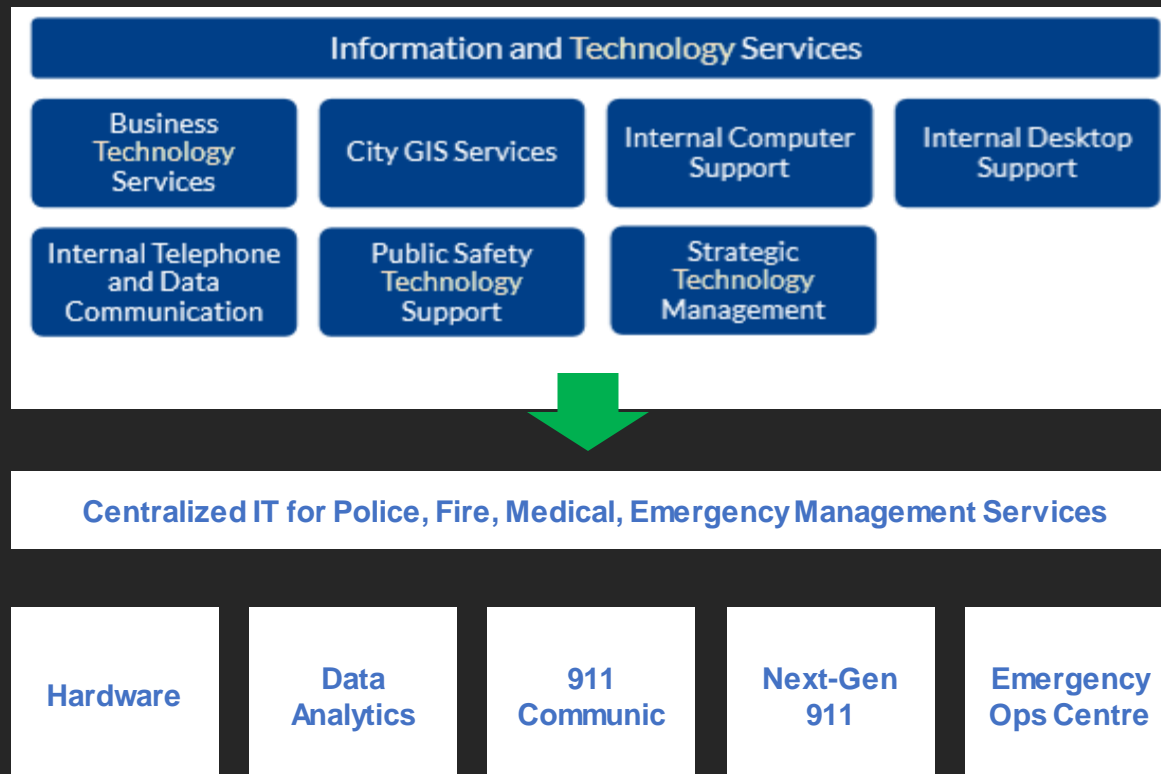
Applications should be assessed on outcomes: Core Apps and SJC wide apps should be centralized, and Enterprise apps should be decentralized

Legend

- Hybrid
- Centralize
- Decentralize

Recommendation: Public Safety Technologies

Type of Model



- Based on San Jose's current limited budget and resourcing, Info-Tech recommends setting up an *emergency services technology office within the current ITS department*
- Multiple cities either already have this model or are implementing this model. Some of such examples include:
 - City of Dallas
 - City of Philadelphia
 - City of Los Angeles

Committee Input & Continue to June Committee Meeting