City of Phoenix

To:	Jeffrey Barton City Manager	**Date:**	March 15, 2022
Thru:	Inger Erickson Deputy City Manager		
From:	Steen Hambric Chief Information Officer		

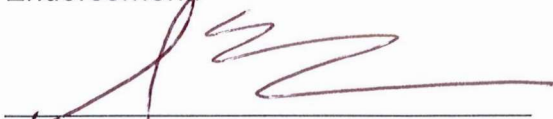**Subject:** City of Phoenix Strategic Technology Plan (2022 – 2026)

The attached City of Phoenix Strategic Technology Plan (2022 – 2026) is hereby submitted for your endorsement. This plan memorializes the city's enterprise IT strategies for the next five years as well as serving as the overarching IT strategic guide for departmental planning and alignment.

Background:
Formalizing strategic planning and prioritization of Information Technology (IT) solutions, services, and related enablers for the City of Phoenix is essential to the continued growth and effective delivery of IT services and capabilities to city residents and internal city departments. As the city's enterprise IT organization, Information Technology Services (ITS) took the lead to solicit and capture inputs from the City Manager's Office, Mayor and Council Offices, and city departments to create the city's first IT strategic plan in over 12 years. A draft plan was completed in late 2021 and subsequently vetted with city executives, elected officials, and department heads for final review and feedback, of which none necessitated revisions to this plan.

Moving forward, ITS will provide city leadership with annual updates of our progress in achieving the strategic goals and objectives called out within the Strategic Technology Plan. Thank you for your continued leadership and support of IT as a critical enabler to city operation and resident services.

Endorsement:

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Inger Erickson, Deputy City Manager

_____
Jeffrey Barton, City Manager

Attachment: City of Phoenix Strategic Technology Plan (2022-2026)

CITY OF PHOENIX

STRATEGIC TECHNOLOGY PLAN

2022-2026

FINAL

INTRODUCTION

As the fifth largest city in the United States, the City of Phoenix is at the leading edge of delivering technology-driven public services. With over 17 million external visits (pageviews) to the City's phoenix.gov website, 17,000 end user computers operated and supported, and over 1,250 business applications supporting City services, it goes without saying the City of Phoenix is an extremely large and complex enterprise. This Strategic Technology Plan will serve as the Information Technology Services (ITS) department's compass to focus and prioritize limited staff and financial resources to not only improve our city's services and how they are provided today, but also enable the city services and capabilities we envision for tomorrow.

This plan will be reviewed, and progress reported annually to ensure continuous alignment between the Mayor, City Council, City Manager's Office, and ITS in achieving the strategic goals and objectives set forth in this plan.

INFORMATION TECHNOLOGY SERVICES

OUR VISION

To be recognized as the best-in-class IT services organization within municipal government.

OUR SUPPORTING MISSION

Deliver secure, responsible, sustainable, and flexible IT services, solutions, and governance for the City of Phoenix.

STRATEGIC FRAMEWORK

This Strategic Technology Plan was developed using a time-tested, strategic framework to align and ultimately link its strategic goals, objectives, and supporting initiatives to critical success criteria or metrics. By doing so, ITS will be able to track our progress towards achieving each goal and, more importantly, know when we have met that goal.

At its foundation, this strategic framework serves as the building block and roadmap for the city to accomplish five core strategic goals. Each goal (or strategy) has been deliberately set after much thought, reflection, and feedback by city leadership and staff. These goals set the "bar" for what we, the City of Phoenix, want from IT and the deliverers of IT in support of city operations and services to our residents. While achieving this "bar" may not be easy, the direction set by this plan, coupled with the indomitable spirit and dedication of city IT staff, makes this "bar" attainable

This plan includes objectives and supporting metrics for each strategic goal. Following this process for each strategic goal establishes a logical and defensible linkage between goals, objectives, and initiatives and ultimately the vision, mission, strategic goals and supporting objectives set the groundwork for work plans to be established and implemented within the timeframe set within this Strategic Technology Plan – five years. For planning and tracking purposes, this timeframe is further divided for implementation of key initiatives into short-term (0-2 years) and long-term (3-5 years).

Success of this plan requires:

➢ Endorsement by city leadership
➢ Support from city departments
➢ Timely submission and approval of financial resources

## City of Phoenix Strategic Technology Plan 2022 – 2026

City of Phoenix

Vision: To be recognized as the best-in-class IT service organization within municipal government

Mission: Deliver secure, responsible, sustainable, and flexible IT services, solutions, and governance for the City of Phoenix.

Strategies

| 1. Deliver resilient IT services and capabilities aligned with current and future city needs | 2. Improve resident and employee access to city information and services through technology | 3. Secure city information resources from cybersecurity threats and vulnerabilities | 4. Respond better and faster to City requests for ITS services and support | 5. Strengthen oversight and delivery of City technology through sound IT governance |

Objectives

1	2	3	4	5
1.1 Invest in and promote technologies supporting the needs of city departments and our residents	2.1 Simplify and improve access to public and internal-facing city services	3.1 Strengthen the city's first line of defense through a rigorous Security Awareness program	4.1 Align IT service delivery with customer expectations	5.1 Elevate sound IT governance to drive city-wide IT decision making and effective oversight
1.2 Partner with Mayor, Council and City leadership to deliver a Smart City Strategy	2.2 Improve community trust through transparency initiatives and Open Data	3.2 Improve the city's enterprise Security Operations Center (SOC) ability to centrally monitor, actively respond, and mitigate threats	4.2 Invest in our staff to increase job satisfaction and retention, and overall service delivery	5.2 Leverage ITS' governance framework to identify gaps, remediate, and educate affected departments and staff
1.3 Seek out and leverage strategic partnerships to identify and evaluate potential IT solutions	2.3 Exploit workflow tools and their capabilities to better initiate, track, and respond to inquiries and requests from city residents and staff	3.3 Ensure comprehensive incident response to anomalies and alerts on city networks, systems, and applications	4.3 Improve delivery and support of City IT services through technology standardization	5.3 Increase IT performance and success through effective project and resource management techniques and reporting
1.4 Embrace the "Cloud" in delivering resiliency to city IT services	2.4 Promote city IT services through education and targeted outreach	3.4 Protect city data by assuring data confidentiality, integrity, availability, and accountability	4.4 Pursue reimagined support models to better deliver effective and timely ITS services and support	5.4 Embrace enterprise portfolio management to ensure visibility and alignment of City IT initiatives with City priorities
1.5 Embody Business Continuity and Disaster Recovery (BC/DR) principles within city IT operations	2.5 Establish a data-driven culture promoting information sharing and decision making	3.5 Provide adaptive defense through cyber threat intelligence (CTI)	4.5 Embody the concept of "Speed to Market" in our delivery of IT services	5.5 Drive improvements in quality of service (QoS) for new and existing City IT

STRATEGY ONE

Deliver resilient IT services and capabilities aligned with current and future city needs
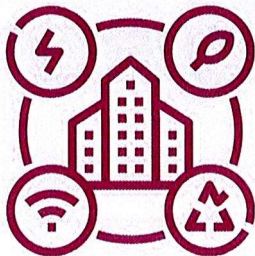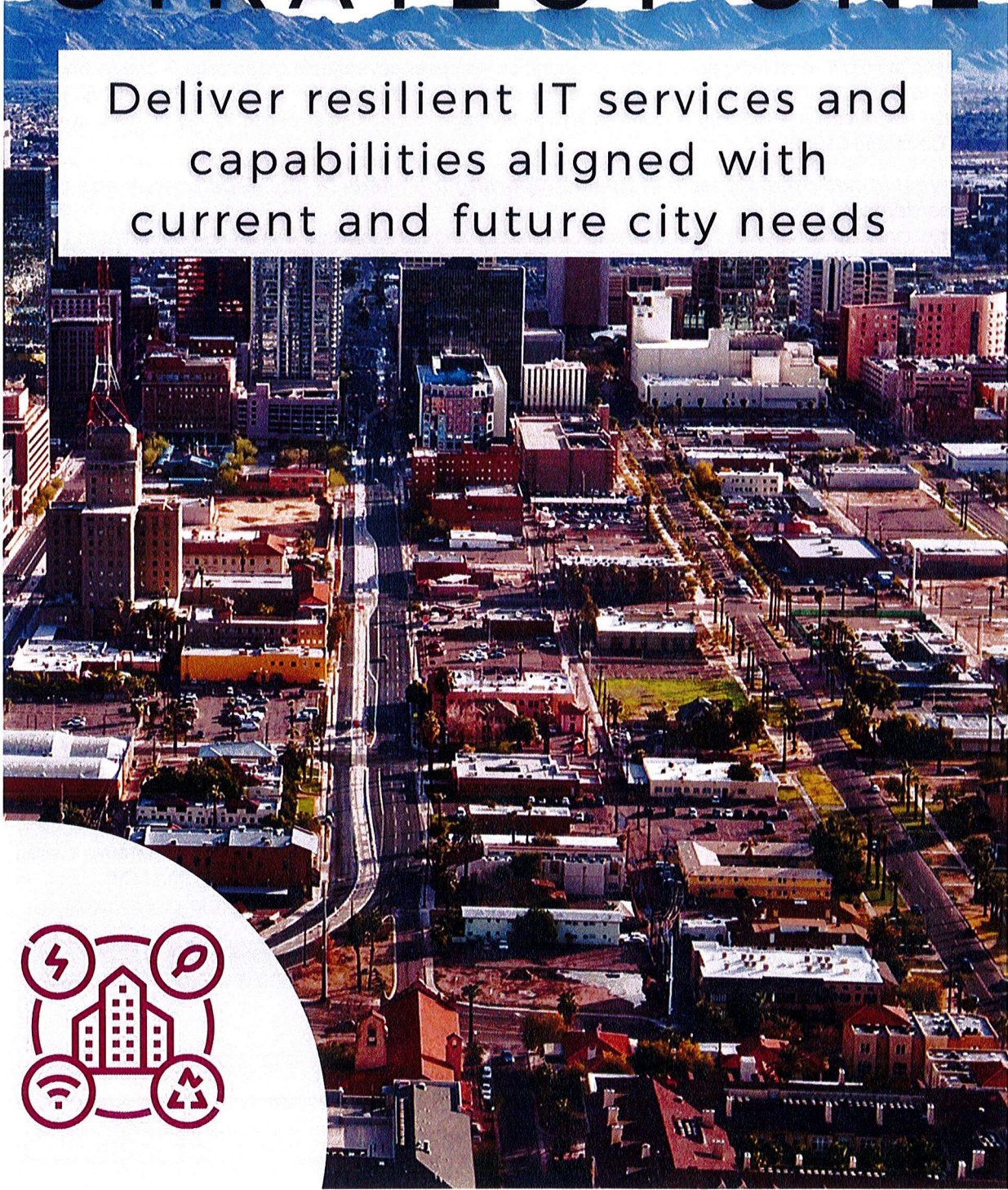
STRATEGIC GOALS (STRATEGIES) & OBJECTIVES

1. Deliver resilient IT services and capabilities aligned with current and future city needs

Alignment of information technology services and capabilities is critical to maximizing the business value of the city's investments in technology to the departments ITS supports, and ultimately, to the public the city serves. This goal embodies the city's desire to proactively and systematically identify, evaluate, and implement robust IT solutions able to withstand the test of time and work conditions. Additionally, this goal addresses the city's need for improved city collaboration with peer government organizations and technology leaders to solve business challenges and identify technology opportunities faster. Lastly, this goal will formalize city direction and commitment to adopt or leverage technologies related to key IT themes (e.g., Smart Cities and Cloud).

1.1. Invest in and promote technologies supporting the needs of city departments and our residents

This objective is driven by the business needs of the city and our residents which can be fulfilled in full or part by technology. To accomplish this objective, ITS will establish improved mechanisms for capturing and understanding the needs of our customers and then seeking out possible solutions that bridge the gap to satisfying them. A major component of this objective is establishing mechanisms by which new and innovative technologies and potential solutions can be quickly identified and evaluated with minimal business impact.

Key Initiatives	
Short-Term	• City of Phoenix/ITS Strategic Technology Plan • ITS pilot and proof of concept guidelines established • ITS business relationship management (BRM) program assessment • IT investment forecast
Long-Term	• ITS test lab • City of Phoenix portfolio management/investment management process • ITS BRM Program Redesign

1.2. Partner with Mayor, Council and City leadership to deliver a Smart City Strategy

In past years, the City of Phoenix has completed numerous IT initiatives which align with Smart City thinking and benefits. However, these "Smart City" initiatives were driven primarily by departmental needs and were not coordinated across departments. This objective addresses the need to elevate Smart City planning, coordination, execution and tracking by developing a city-wide Smart City strategy and governing framework. Based on this strategy, all City of Phoenix departments will work from a shared Phoenix definition of "Smart City" and associated priorities which embody the City's Smart City vision. In concert, this strategy will provide for a centralized view of the City's Smart City portfolio of initiatives.

Key Initiatives	
Short-Term	• COP Smart City strategic plan • COP Smart City governance charter/framework
Long-Term	• COP Smart City technology roadmap

1.3. *Seek out and leverage strategic partnerships to identify and evaluate potential IT solutions*

"Working smarter, not harder" is a concept city IT must continue to embrace as demands for technology-based services and support continue to grow. This objective directly supports this concept by city IT seeking out and embracing business partnerships, collaboration, and information sharing with IT and business experts within state and local government, industry, and academia with the purpose of helping the city gain new insight into solving problems or addressing business needs faster and with less effort.

Key Initiatives	
Short-Term	• Establish/formalize strategic partnerships - regional academic institutions • Establish/formalize strategic partnerships - industry leaders • Establish/formalize strategic partnerships - municipal government peers
Long-Term	• Establish recurring information sharing forum(s) with strategic partners • Strategic partnerships report card

1.4. *Embrace the "Cloud" in delivering resiliency to city IT services*

The "Cloud" can satisfy or enable a full range of city needs from hosting critical business applications to being a virtual and scalable alternative to physical servers and storage to serving as the foundation for an organization's IT operations such as performing enterprise backups and providing robust disaster recovery capabilities. This objective will instill a citywide cloud strategy and supporting framework for leveraging the "Cloud" to reduce costs, improve scalability and flexibility, and ensure IT service resiliency is built into our city IT services moving forward. In addition, this objective will set citywide cloud governance and standards from which all city departments can plan and execute their cloud initiatives moving forward. In doing so, this objective will set the stage for more manageable and secured cloud-based operations, ability to scale cloud services to meet city demands at a moment's notice and ultimately minimize the city's reliance on physical infrastructure and the associated costs to maintain them.

Key Initiatives	
Short-Term	• COP cloud strategy/governance framework • DRaaS implemented (Phase 1) • COP cloud services inventory/completed security assessments • Phoenix.gov to the cloud • City backups to the cloud
Long-Term	• Migrate InsidePHX to the cloud • Data center in the cloud strategy

1.5. *Embody Business Continuity and Disaster Recovery (BC/DR) principles within city IT operations*

This objective goes beyond the concept of system resiliency by partnering with the Office of Homeland Security and Emergency Management to ensure the establishment of up-to-date and achievable Business Continuity and Disaster Recovery (BC/DR) capabilities and plans, related procedures, and testing requirements for key city systems. In doing so, this objective will ensure key systems are accessible and can deliver required capabilities in the event of a disaster or major service disruption. Furthermore, this objective focuses on the IT staff to ensure adequate training is incorporated into normal operations so that if or when a disaster is called, city IT staff and our support contractors are prepared to restore key services quickly and with confidence.

Key Initiatives	
Short-Term	- DRaaS award and implementation - Conduct BC/DR staffing/support model review - Establish COP BC/DR test program - COP critical application/DR validation - Complete enterprise storage replacement project
Long-Term	- Formalize annual assessment of COP critical applications inventory and BCDR posture - Establish "Data Center in the Cloud" strategy - BC/DR support model formalization - BC/DR test program fully operational capability (FOC) - BC/DR testing report card - Improve business continuity through consolidation of citywide IT assets into enterprise data centers

STRATEGY TWO

Improve resident and employee access to city information and services through technology
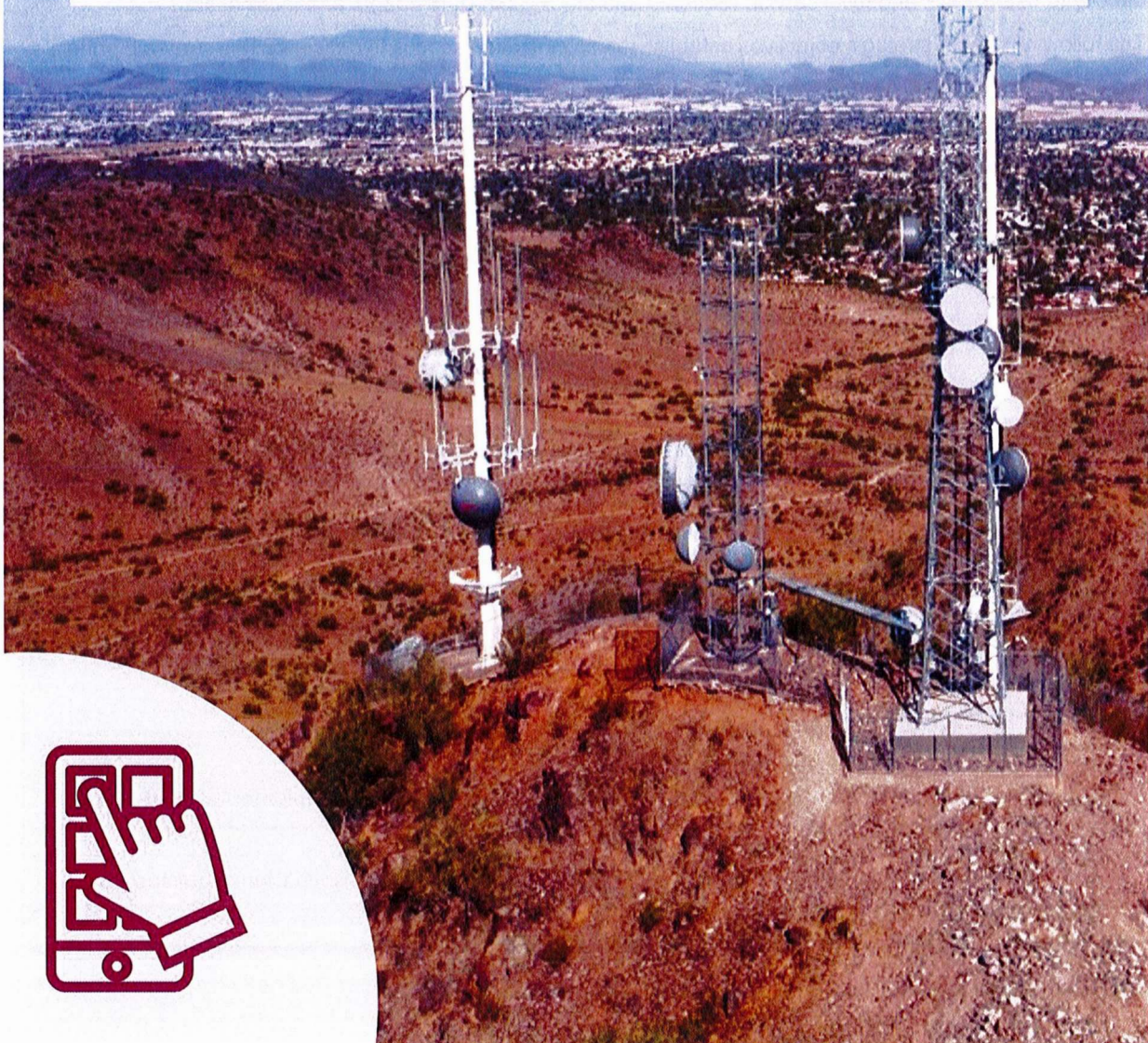
2. Improve resident and employee access to city information and services through technology

This strategic goal is focused on the "customer" and how they interact with the city through technology, regardless of whether they are city residents, employees of the city, vendors, or other interested parties. Key premises of this goal are that "easy to access," "easy to use," and "easy to understand" must be forefront in how the city plans for and delivers its IT-based services moving forward. The city will not promote or implement IT services without considering the impact those systems will have on our customers who rely upon them. In addition, this goal will strive to address the challenges of documenting, tracking, and ultimately fulfilling large numbers of customer service requests and inquiries, often with limited staff. Finally, this goal will address the concept of data transparency by systematically evaluating city internal data sources that can be made available or "open" to the public through self-service tools, thus strengthening the view of the city as an "Open Government" municipality.

This goal will positively affect how residents view the city and the services we provide and will drive improvements in how the city leverages information for making informed decisions. Additionally, it will allow the city to better track and fulfill service requests and inquiries from residents and internal staff.

The following five (5) strategic objectives establish the organization's focus to deliver on this strategic principle.

2.1. Simplify and improve access to public and internal-facing city services

This objective focuses on the best approaches and mechanisms to deliver city services to our internal and external customers. Currently, the city relies upon multiple "channels" for delivering city services through technology. Some of these channels have been recently improved but not always from an end-to-end perspective. This objective will provide a systemic approach to evaluating and improving not only the means by which services are requested (e.g., web, phone, email) but also the backend systems and existing workflow automation or interfaces to other systems which are integral to service fulfillment. From a simplification or ease of use perspective, this objective emphasizes the importance of the user experience in all our technology solutions implemented throughout the city.

Key Initiatives	
Short-Term	• myPHX311 Phase 1 completion • Develop myPHX311 product 3-year roadmap • Modernize/overhaul phoenix.gov and search • Unified service portal architecture • Secure self-service kiosk expansion • Gain CMO endorsement of ERP consolidation roadmap and recommendations • Conduct city contact center consolidation study • E-signature service expansion • Enterprise Learning Management System (LMS) Implementation (PHXYou)
Long-Term	• InsidePHX Assessment • Enterprise Resource Planning system (ERP) consolidation acquisition strategy

• Application Programming Interface (API) Management (APIM) solution
• Citywide consolidated contact center implementation
• Establish customer advisory board
• Service(s) simplification study
• Channels study (e.g., current vs. possible)
• myPHX311 product roadmap operationalized
• City artificial intelligence (AI) strategy/expansion
• Unified service portal hub implementation

2.2. *Improve community trust through transparency initiatives and Open Data*

The City of Phoenix is charged with effectively and responsibly carrying out its mission on behalf of its over 1,600,000 residents. This objective will ensure the Phoenix community and other interested parties have access to relevant, updated, and accurate information and dashboards regarding city operations (e.g., public safety statistics) from which independent evaluation and inquiry can take place. This availability and access to information is foundational in building and preserving public trust and confidence related to city operations.

In addition, this objective will elevate the city's reliance on Open Data concepts, tools, and datasets to enable greater public access to city information and, ultimately, greater oversight of city operations. In doing so, this objective will set the stage for improved resident trust in how the city is being operated and spending their tax dollars.

Key Initiatives	
Short-Term	• Develop Open Data strategy • Establish Open Data governance framework • Complete Open Data targeted dataset expansion (Phase 1) • Rebrand/promote Open Data portal • CMO dashboard enhancements (Phase 1) • Develop/enforce content management governance • Modernize/overhaul Phoenix.gov and search
Long-Term	• Implement Open Data site modernization • Complete Open Data targeted dataset expansion (Phase 2) • Deliver CMO dashboard enhancements (Phase 2) • Implement API management platform • Open Data team assessment/buildout

2.3. Exploit workflow tools and their capabilities to better initiate, track, and respond to inquiries and requests from city residents and staff

The city currently leverages multiple software-based tools to track internal and external customer requests for various services or information throughout the city - to include for our elected officials. This objective recognizes the importance of these tools in support of city operations while also realizing their untapped capabilities which we must strive to unleash to make the city even more efficient and responsive to our customer's needs. In addition, this objective will exploit the rich data that comes out of these tools to better understand how our services are performing according to our service level agreements and where our services or city operations generate the most interest and questions from our customers.

Key Initiatives	
Short-Term	• COP Enterprise Case Management strategy (PCH 11/CMO departments) • COP Customer Relationship Management (CRM) strategy (includes myPHX311) • COP Grant Management strategy • IT Service Management (ITSM) Tool Enhancements
Long-Term	• Enterprise Case Management strategy and deployment

2.4. Promote city IT services through education and targeted outreach

This objective recognizes the criticality of educating and informing the intended users of city technology-based services along with the rollout and continued offering of these services. By accomplishing this objective, our internal and external users will better understand our technology-based city services, how best to use them, and how to easily seek assistance (via self-help, on-line training materials, and/or other means). In addition, this objective will purposely market our available services to gain higher utilization, and ultimately greater user independence and satisfaction.

Key Initiatives	
Short-Term	• ITS marketing/communications strategy • IT Service Catalog launch
Long-Term	• Technology self-help resource center and video library • IT Service Catalog enhancements • Technology outreach report card/assessment

2.5. *Establish a data-driven culture promoting information sharing and decision making*

This objective is focused on elevating the significance of city data in making better- and well-informed business decisions throughout the city. This objective will ultimately drive change in organizational behavior so that business intelligence (BI) and data analytics becomes foundational components of our day-to-day operations. The result will be greater reliance on data-driven decision making throughout the city.

Key Initiatives	
Short-Term	• ITS digital signage – CCG 6th floor common area • ITS department BI dashboard rollout • City BI strategy/roadmap • Data governance framework • BI/analytics framework
Long-Term	• Complete City BI Dashboard • Implement data management strategy and tools • Predictive analytics platform recommendations

STRATEGY THREE

Secure city information resources from cybersecurity threats and vulnerabilities

3. Reduce cyber risk by securing city information resources

Cities have become the new battleground for malicious, foreign agents desiring to cripple government agencies, or to ransom unprotected and unsecured data. Over the past two years ITS has made substantial investments to better educate city employees on cyberthreats, and to acquire new security monitoring and data leak prevention systems for the purposes reducing the risk to the city. This strategic principle conveys the important objectives that will be on the forefront over the life of this plan.

3.1. Strengthen the city's first line of defense through a rigorous Security Awareness program

The first line of cyber defense is citywide employees, industry partners, and effective public awareness. This objective capitalizes on the existing momentum that has already been created to provide employees and industry partners with annual security awareness training requiring security awareness training annually, upon receipt of network credentials as an industry partner, or upon joining the city during new employee orientation.

Key Initiatives	
Short-Term	• Conduct new employee orientation and annual security awareness training (ASAT) for all phoenix.gov account holders • Implement monthly relevant security topics to keep security at the forefront of the workforce • Implement citywide phishing and other social engineering training/tests • Ensure training is provided to meet regulatory requirements for Payment Card Industry (PCI), Health Insurance Portability and Accountability Act (HIPAA), etc.
Long-Term	• Automate training to report accurate metrics on the efficacy of training

3.2. Improve the city's enterprise Security Operations Center (SOC) ability to centrally monitor, actively respond, and mitigate threats

Having a robust and mature Security Operations Center is critical to improving the city's overall security posture through continuous monitoring, response, and mitigating of cybersecurity incidents. The SOC provides a myriad of security services with the goal of providing effective enterprise cyber incident response. The focus of this objective is to continue developing and refining the SOC's tactics, techniques, and procedures (TTPs).

Key Initiatives	
Short-Term	• Complete implementation of Phase 1 SOC tools (Endpoint Detection and Response (EDR), Security Information and Event management (SIEM), email security, vulnerability management, cyber threat intelligence, and Network Access and Control (NAC) • Develop SOC standard operating procedures • Develop SOC incident response readiness plan and procedures documents

	• Ensure SOC personnel are adequately trained to execute the SOC's mission
Long-Term	• SOC assessment and recommendations • Complete implementation of Phase 2 SOC tools • SOC tactics, tools, and procedures refinement

3.3. *Ensure comprehensive incident response to anomalies and alerts on city networks, systems, and applications*

Creating an adaptive cyber defense will involve continually maturing the city's incident response (IR) readiness plan and procedures. Further regular testing of the SOC's capabilities as well as the city's actions during a major incident will show gaps in our current IR capability. Significant effort will be made to ensure our SOC analysts receive regular training as well as tabletop and red team exercises to make certain the city incident response plans function effectively.

Key Initiatives	
Short-Term	• Develop standard operating procedures (SOPs) and other incident response documentation to properly detect, contain, eradicate, and recover from an incident • Initiate Cybersecurity tabletop exercises (e.g., "Red (external attacker) Team, Blue (defender), Purple (exercise advisor)" • Certify, where applicable, newly implemented security technologies are tied to the SOC and the IR readiness plan and procedures manual
Long-Term	

3.4. *Protect city data by assuring data confidentiality, integrity, availability, and accountability*

Preventing unauthorized disclosure (confidentiality), preventing unauthorized creation, modification, and destruction (integrity), and assuring information resource availability and data accountability are critical to a resilient enterprise information ecosystem. Without these foundational tenants of security addressed, the city is at significant risk of a major breach or a cyberattack like a ransomware event. We assess our risk through developing a gap analysis by mapping the enterprise networks, systems, and applications to the National Institute of Standards and Technology (NIST) 800-53 moderate security controls. Performing a risk assessment on those gaps will provide justification for future security and privacy investments.

Key Initiatives	
Short-Term	• Planned security improvements (Phase 1) • Implement encryption of data at rest across our database environments • Implement a citywide asset management program that accurately tracks all IP-based devices, their patching status, and vulnerability impact potential • Map the city's enterprise network to include all router and firewall configurations to pinpoint security issues, misconfigurations, and other problems leading to a less resilient environment • Map city departments to NIST 800-53 moderate security controls • Establish repeatable risk assessment process to assess network,

	applications, systems, cloud, and business process gaps • Implement Privileged Access Management (PAM) for management and monitoring of privileged account usage throughout the city • Implement Network Access Control (NAC) to city-owned devices and city authorized users
Long-Term	• Conduct micro segmentation assessment and recommendations of Criminal Justice Information System (CJIS) and Health Information Portability and Accountability Act (HIPAA) data hosted in the city's private cloud environment • Planned security improvements (Phase 2)

3.5. Provide adaptive defense through cyber threat intelligence (CTI)

While vulnerability management, Security Information Event Management (SIEM), firewalls, and intrusion detection/ prevention systems are critical to a mature SOC, reducing the attack surface requires an additional approach in the form of cyber threat intelligence (CTI). CTI is the culmination of information from open sources, evaluated in its context, and analyzed to understand a threat actor's motives, targets, and attack behaviors. CTI analysts provide this intelligence to help the organization make faster, more informed, data-backed, and risk-based decisions. This is a change in thinking from a reactive to a proactive posture in our cyber defense. This transformation in approach, to malign actor's TTP and motives. It enables organizations that have limited resources to mitigate every vulnerability, to take advantage of CTI and make more informed and strategic decisions to mitigate risk.

Key Initiatives	
Short-Term	• Formalize CTI team • Acquire/Incorporate key CTI information sources for city use • Establish Tier 1 CTI customers • Establish CTI SOP and work products
Long-Term	• Refine CTI tradecraft and product

STRATEGY FOUR

Respond better and faster to city requests for ITS services and support
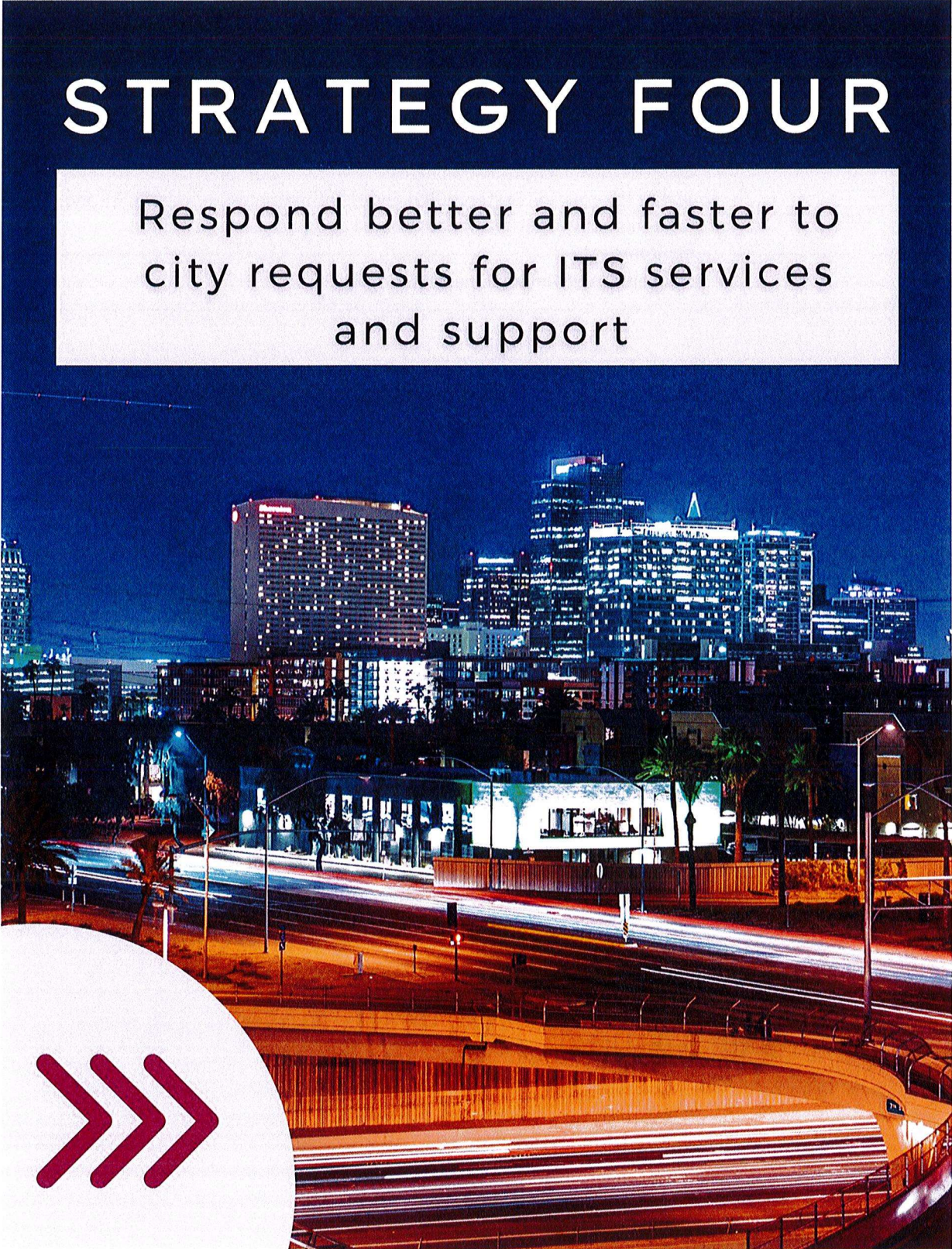
4. Respond better and faster to city requests for ITS services and support

This strategic goal recognizes the need for ITS to continuously assess, evaluate, and mature how it provides services and support to its customers. This goal has several key elements which must be satisfied for this goal to be accomplished. These include the need to (1) better understand and align IT service capabilities and response times with customer expectations, (2) embrace new, innovative, and scalable IT support models across a broad range of service areas, (3) establish, publish, and enforce city IT standards our IT staff must be ready to support, and (4) improve how we acquire, train, and retain our most critical resource, our IT staff. In doing so, city IT staff will be better equipped to support IT customer requests more professionally, with less waisted time, and with higher customer satisfaction.

4.1. Align IT service delivery with customer expectations

The alignment of IT service delivery with customer expectations are supported by establishment of Service Level Agreements (SLA), service delivery operational enhancement, and service catalog. The key to aligning services to customer expectations relies on the city's ability to measure the volume and frequency of various customer request types, response time to the requests, and the overall customer experience and satisfaction. This shall enable the city to better prioritize response to requests based on service catalog categorization and to proactively improve and streamline our services. This objective takes ITS to a next level of maturity by focusing on lifecycle metrics and key performance indicators (KPIs) that start with measuring strategic planning objectives, the portfolio of potential investments via the annual technology planning program, and measurement of approved and inflight technology projects.

Key Initiatives	
Short-Term	• Initiate Annual Customer Satisfaction Survey for ITS services • Create/track operational dashboards and key performance indicators (KPI's) to show operational performance • Conduct Design Thinking Training for management/team leads • Implement ITS Service Catalog (Phase 1)
Long-Term	• Automate ITS metrics capture and reporting • Implement ITS Service Catalog (Phase 2)

4.2. Invest in our staff to increase job satisfaction and retention, and overall service delivery

In today's competitive work environment, hiring and retaining qualified IT staff is paramount to mission success. Within the city, this is even more challenging as we observe strong competition within specialized technical specialties, specific industries, and geographical regions. To counter these challenges, this objective will embark on key initiatives to entice the best technical candidates to seek out and apply for city IT vacancies, elevate the value and capabilities of our existing staff through high-value training opportunities and certification programs, and ultimately retain our staff longer by improving job satisfaction and opportunities for advancement.

Key Initiatives	
Short-Term	• Expand employee recognition program • Enhance ITS-internal vacancy and hiring action notifications • Mature/enhance ITS-internal staff communications • ITS reemphasis in staff training • Align department training plan with Strategic Technology Plan

Long-Term	- Implement ITS departmental new employee orientation program - Establish IT Career Ladder Development Program

4.3. *Improve delivery and support of city IT services through technology standardization*

Technology standardization, to include application rationalization, is the practice of strategically identifying, investing, and supporting information technology that creates value throughout an organization rather than a single department or set of departments. A key aspect of this practice is to seek out, evaluate, and ultimately minimize the number of technologies (hardware and software) that provide similar or redundant capabilities within an organization. In doing so, this objective will result in opportunities for cost savings across the city from a technology licensing perspective, set the stage for improved IT service and support throughout the city by being able to focus staff support models, standard operating procedures and playbooks and technology architectures based on fewer hardware and software variables throughout the city.

Key Initiatives	
Short-Term	- Conduct COP technology standards study - Formalize COP technology standards review and update process - Conduct application rationalization study - Conduct platform rationalization study
Long-Term	- Complete application rationalization recommendations and roadmap - Complete platform rationalization recommendations and roadmap

4.4. *Pursue reimagined support models to better deliver effective and timely ITS services and support*

The purpose of this objective is to strategically address the city's staffing challenges which directly affect ITS' ability to deliver excellence in our enterprise IT services and support we provide the city and our residents. These challenges exist for many reasons to include (1) expansion of technologies implemented within the city occurring faster than ITS' ability to hire qualified staff to support them, (2) staffing needs to support new or growing technologies were not fully identified or approved at the project planning phase, (3) inability to hire qualified staff due to market competition, and (4) dilution of staff focus due to overwhelming demand to support "must do"/"high priority" initiatives.

Key initiatives supporting this objective will address the cumbersome and ineffective hiring processes that impact ITS services today, develop and implement innovative ways to deliver ITS services and support with by more reliance on contract resources (e.g., managed services or staff augmentation), and explore opportunities to completely outsource select IT support functions where it is in the best interest of the city. By accomplishing initiatives that address these areas, ITS will be better positioned and more flexible to deliver more effective and timely support to our customers at scale.

	Key Initiatives
Short-Term	• Complete ITS organizational support model review and recommendations to include staffing, staff augmentation, outsourcing • Review ITS support functions as candidates for managed services • Streamline recruitment process for ITS positions • Streamline onboarding/offboarding process for ITS staff and contractors • Leverage 3rd party recruiter partnerships for hard-to-fill ITS positions
Long-Term	• Tie IT support requirements to COP investment decision making process • Establish an IT staffing capacity and capability planning model to ascertain and measure resource availability for future project and operational activities • Expand COP use of available IT contract vehicles at municipal and state level

4.5. Embody the concept of "Speed to Market" in our delivery of IT services

Mature organizations focus on Speed to Market to rapidly launch new technologies and services and deliver enhancements to existing IT services. Within the City of Phoenix, this objective focuses on a continuous improvement mindset and culture to improve the speed by which we will deliver services to our customers in the future. Key initiatives within this objective will build upon and reinforce the mindset traditional "big bang" implementations are a way of the past and replaced by incremental release in an agile manner without compromising quality. To achieve the right balance, it requires adaptability, ability to quickly learn, and resilience. These key capabilities are critical components in our Speed to Market delivery of IT solutions and services.

	Key Initiatives
Short-Term	• Formalize Agile development methodology expansion and focused training • Streamline IT planning, architecture, and development processes • Review and enhance IT service delivery processes • Strengthen project intake and initiation processes • Explore opportunities to expand use of product management/team concepts • Optimize onboarding process for ITS project and support resources
Long-Term	• Conduct IT processes optimization review

STRATEGY FIVE

Strengthen oversight and delivery of city technology through sound IT governance

5. **Strengthen oversight and delivery of city technology through sound IT governance**

Successful delivery and support of technology within an organization is often the result of applying comprehensive and effective IT governance (framework, policies, and procedures) across all IT initiatives and operations. Within the city, elements of effective IT governance exist but need major overhaul and/or expansion to reflect the core elements of today's IT operating environment. This goal embraces the application of IT governance holistically so that all city IT staff can perform their jobs with clear guidance based on the city's adoption and interpretation of industry best practices across a broad range of IT disciplines and support areas.

The following objectives support the city's focus to deliver on this strategic goal:

5.1. Elevate sound IT governance to drive citywide IT decision making and effective oversight

This objective will raise awareness and visibility of IT governance throughout city departments. Where appropriate, this objective will also extend awareness of our IT governance practices to our vendor partners who implement and/or support IT on behalf of the city.

To improve the value and utility of IT governance across the city, this objective will seek out opportunities to elevate IT governance within and beyond the boundaries of ITS through a focused outreach and communications campaign. This will be done through targeted and recurring messaging and marketing to ensure IT governance awareness and knowledge retention of affected staff.

This objective will also establish mechanisms by which governance oversight can be affectively put in place, administered, and evaluated over time for compliance and improvement opportunities.

Key Initiatives	
Short-Term	• Formalize IT governance framework • Develop IT governance communications strategy • Institutionalize COP IT investment forecasting • Institutionalize COP IT portfolio management/IT capital planning/investment control (CPIC) for CMO decision making
Long-Term	• Review/update IT governance communications strategy

5.2. Leverage ITS' governance framework to identify gaps, remediate, and educate affected departments and staff.

A robust IT governance program is essential to a well-run IT organization. The challenge is that "robust" is a difficult and subjective word to achieve. Within ITS, this objective will be driven by the creation of a framework approach to inventory and evaluate existing IT governance against industry best practices to determine adequacy of what exists today's and/or governance areas that are missing all together. ITS will then prioritize its efforts to create or improve upon the city's IT governance based on determination of best value and organizational impact to the city.

As new and/or improved governance is written, ITS will ensure affected departments and staff are aware of these changes in a manner that ensures understanding, retention, and compliance through sound organizational change management techniques and robust communications channels that not only focuses on initial delivery but continuous reinforcement and support.

Key Initiatives	
Short-Term	• Formalize IT governance review/update process • Establish/maintain IT governance reference library - online • Assess/recommend IT governance support requirements • Develop IT governance communications strategy
Long-Term	• Review/update IT governance communications strategy

5.3. Increase IT performance and success through effective project and resource management techniques and reporting.

Projects serve as the single most pivotal activity that the city executes to transform its business and technologies to deliver improved services to the public and our staff. To accomplish these projects, the city entrusts ITS to implement and lead effective IT project management governance across all city departments. This governance has been established and is championed by ITS' Project Management Office (PMO). However, there are opportunities to further refine, simplify, and apply PM best practices across the city to make our project management practices even more robust, yet agile and ultimately more effective as the city's business needs evolve.

A companion to effective project management is resource management which is a data driven discipline which applies practices and techniques to effectively assess, allocate, and ultimately manage required staff and financial resources against an activity (or project) or portfolio of activities or projects. Today, resource planning and management is performed primarily in an ad hoc fashion and/or without insight into other potential city projects or activities that may rely on the same resources to be successful. As a result, ITS resources are often required to react quickly to unanticipated requests for assistance or city priorities which puts planned work and timelines in jeopardy.

This objective will take on the challenges of effective IT project management and resource management in a world in which the desire for technology-driven change far exceeds the available resources to implement and ultimately administer, service, and support the outcomes of these projects over time.

Key Initiatives	
Short-Term	• Optimize PMO policy/procedure/tools/templates • Develop ITS resource capacity management program for projects and operations • Develop streamlined project intake process • Implement resource allocation forecasting tool • Publish and promote PM portfolio dashboards
Long-Term	• Promote/formalize PM resource management and time tracking system • Conduct project and resource management maturity assessment • Conduct IT project management "best practices roadshows"

5.4. Embrace enterprise portfolio management to ensure visibility and alignment of city IT initiatives with city priorities

This objective will fundamentally replace the city's Business Investment Board (BIB) process with a more agile and value-add IT capital planning/investment control process. This new process will change how city leadership selects, controls, and evaluates strategic IT initiatives throughout the year and in a more nimble and meaningful way. Additionally, this objective will incorporate the best practices of IT portfolio management to ensure a holistic view of IT initiatives across the entire city so the evaluations, prioritizations, and selections of IT initiatives are made not only from a department's perspective but from the city's perspective as well. In doing so, resource considerations and decisions across the entire city can be made in a more thoughtful and comprehensive manner to ensure all required project resources are identified for and committed to support these projects when needed.

Key Initiatives	
Short-Term	• Formalize City of Phoenix portfolio management/investment management process to include proposal intake/evaluation/prioritization and resource allocation forecasting • Seek CMO/B&R endorsement of process changes to elevate ITS awareness of departmental plans for future IT initiatives or major procurements
Long-Term	• Formalize ITS preview/review process of departmental IT budget submissions

5.5. Drive improvements in quality of service (QoS) for new and existing city IT

Quality must be a foundational word the city uses when referring to its IT services and systems and the staff that provide them. Not only is quality demanded in the IT services we deliver, but quality is demanded in the projects we implement and the data that we provide or make available to our customers for them to make their business decisions.

While the concept of "Quality of Service" (QoS) is often attributed to the telecommunications industry and its ability to guarantee delivery of clear network paths by which companies are solely dependent on to perform their work or deliver their services, this objective takes the concept of QoS even further and applies this mindset to our delivery of IT services and systems across the city as a whole. In other words, IT must be delivered with quality in mind – always. City departments rely on ITS and other providers of IT to deliver reliable and resilient technologies that are error-free and "up" when they need them. In addition, the data and information provided as a result of IT must always be of the highest quality for effective decision making at all levels as well as to protect the reputation of the city against entities which may wish to discredit us or embarrass us due to lack of quality in the data we rely upon or provide them.

Much of this objective is focused on culture and the need to change it amongst our IT professionals so that "good enough" is no longer in our vocabulary. This objective also strives to reenforce the importance of embedding "quality" at all stages of IT service delivery from project planning to project closeout to IT operations. This also requires the attention to detail to report writing and the validation of data presented as accurate to its consumers whether they be the City Manager or one of our many residents.

Key Initiatives	
Short-Term	• Leverage P1 After Action Review process to systematically improve quality control issues • Formalize quality assurance/quality control (QA/QC) policy and procedures • Establish quality metrics

Long-Term	• Develop QA/QC and testing framework
	• Develop Release Management framework

6. Strategy Execution

This Strategic Technology Plan spans five (5) year representing the enterprise IT strategic goals and objectives of the entire City of Phoenix. This plan serves as the city's overarching IT strategic plan for all departments to align their departmental IT plans and internal operations over this timeframe. For those city departments which have IT teams dedicated to supporting their operations, this plan is not intended to replace essential department-level planning or internal strategies but rather provide enterprise guidance and direction from which department plans and strategies can be built upon.

Within ITS, this plan will be foundational to its budgetary and resource planning activities as well as its project/initiative prioritization efforts. These project/initiative prioritization efforts will be performed in close coordination with the City Manager's Office and key stakeholders such as the city's Chief Innovation Officer, Chief Finance Officer, and Budget and Research Director. No IT expenditures or related activities will be authorized without a direct or indirect tie to the goals and objectives within this document or explicit approval by the CIO. On an annual basis, this plan will be reviewed by ITS leadership for their progress in meeting the goals and objectives as identified, herein. Annually, the city's CIO will also present to city leadership a "report card" of their progress in achieving these stated goals and objectives and provide recommendations for adjustment based on redefined city priorities (if needed).