Draft City of Albuquerque FY19 Technology and Innovation Plan

'A Smart and Digital City'

1. Introduction

This plan is the blueprint for the City of Albuquerque's smart and digital city. Our goal is to empower our City employees and expand government service accessibility to constituents through the smart use of technology. Specifically, this plan relates to the mission and functions of the Department of Technology and Innovation (DTI).

We need to promote a '*digital operating system'* through the innovation and redesign of government services. Through leadership and technology implementations, the civic innovation revolution in the City is well underway - with the City's established open data program and use of civic technology, we are building a toolset for citizens to participate in the improvement of our City's quality of life.

By embracing civic innovation - it can change everything; service costs go down and the speed to deliver services goes up, quality improves and new information is uncovered every day that spurs further innovation. With innovation, public services better respond to evolving needs in flexible and more predictive ways - everyone wins. This plan will create the conditions necessary for the civic innovation revolution to take root.

The majority of initiatives in this plan are funded and will be in progress this year with completion dates ranging from 12 to 18 months out.

2. Statement of Technology Strategy

Citizens prefer to interact with government online. As a City, we need to provide city services online, in concert with the built environment. E-government delivers City services digitally via any device (particularly mobile), on a 24/7 basis.

Mobile and transactional (end-to-end transactions with City Departments) services need to be provided through self-service platforms. Where appropriate, these digital services must provide secure payment capabilities though smartphone and responsive web portals. Following is the current portfolio of online capabilities:

System	Service(s)	Status	Payment Functionality
eProval	Online Special Event Permitting system	Implementation	Phase 2
iCart	Online payments: 1) Parking Citations 2) Business Registration renewals 3) Alarm permit renewals 4) Environmental permit renewals	In production, replacement underway	In production
SeeClickFix	ABQ311 (online service requests)	In production	N/A
Cognos	Online reports: 1) Transparency 2) Vendor payment status	In production, upgrade underway	N/A

Siriusware	Point-of-sale:
	    1) Admissions for BioPark, Aquarium, Botanic Garden, Museum, Pools
	    2) Concert tickets
		In production	In production

NeoGov	City employment applications	In production	N/A
ESRI GIS	Spatial mapping and address lookup	In production	N/A
SiComm	Purchasing solicitations	In production	N/A
Plone	City website	In production, redesign underway	N/A
Campaign Finance Reporting	Gateway for campaign finance receipts, ex expenditures, etc	In production	N/A
CrimeMapping.com	Crime report mapping	In production	N/A
Granicus	Video of City government meetings including agenda-specific tagging	In production	N/A
Legistar	City government meetings agendas and minutes, legislation tracking	In production	N/A
APDOnline.com	APD recruiting	In production	N/A
HoldMyTicket.com	Event admissions ticketing	In production	In production
GovTV Streaming	Streaming video of City government meetings and other broadcasts	In production	N/A
PetHarbor	Lost or adoptable pet search	In production	N/A
Samaritan	Volunteer opportunities and registration	In production	N/A
Computronix Posse	- Business Registration - Special Event permits - Planning permits	Implementation	In process
Avolve ProjectDox	- Electronic Plan Review (Building Permit Plan Review)	In production	N/A
EdgeSoft	Construction barricade and traffic change permits	In production	In process
TMS	Museum collection information	In production	N/A

RecTrac Rec & Activity Mgmt	Recreational activities and leagues
	    1) Participant sign-up
	    2) Schedule maintenance
	    3) Cancellations notification
	    4) Standings, statistics, etc.
		In production	In production

On-line Trip Planner for ABQ RIDE	Using the data published to the Open Data site, several vendors, including HopStop and Google Transit, as well as Trapeze Info- WEB, now provide trip planning services for ABQ Ride bus service	In production	N/A
Trapeze OPS online	ABQ RIDE extra-board bus drivers, whose schedules are auto-generated after hours, can check their work schedules on-line	In production	N/A
Websites that display real-time location of ABQ RIDE buses	Using the data published to the Open Data site, several entities, including UNM and Google Earth, display real time location of ABQ RIDE buses	In production	N/A
Smart Phone app display of real time location of buses	Smart phone applications are available for Apple and Android phones to show, real time, location of buses, as well as closest bus stops, route, where to buy a bus pass, etc.	In production	N/A

TXT2RIDE	Passengers can get real time notification of scheduled time of departure of any bus on any route at any stop through texting appli- cation	In production	N/A
Trapeze PASS	ABQ RIDE SunVan drivers get real time up-dates to their schedule of pickups and drop-offs as passengers change their schedules	In production	N/A
Trapeze applications to schedule trips and track vehicles	ABQ RIDE currently shares it's technology with UNM (to track their shuttles), Depart- ment of Senior Affairs (to schedule their Meals on Wheels routes), MRCOG (to track the real time location of their trains) and Rio Metro (to schedule their demand response trips)	In production, though Rail Run-ner trains are still in trial	N/A

☐ To advance the City's digital capabilities, DTI will work with departments to develop a policy initiative to expand the offering of online service delivery applications. We will sponsor a coordinated process with Departments to identify and adapt existing business processes (built environment) to online services. To this end, DTI will:

    o Work with City Departments to survey and determine services not currently being delivered online. Upon survey completion (end of 2nd quarter, FY16), DTI will generate a report of the online service opportunities and involve stakeholders to prioritize and schedule a plan for online service creation (based on available budget).

☐ Employee and business process efficiencies. Continue to provide employees with automated process and workflow technology to increase overall service delivery efficiencies. Continue to eliminate paper and manual, inefficient process operations.

☐ Cyber Security. The protection of City digital infrastructure and cyber assets is paramount. We will continue to mature the City's cyber security program with proactive and real-time network and application monitoring tools and processes.

3. Statement of Civic Innovation Strategy

Use new technology and design methods to bring efficiency to government and power to citizens. Future-proof our City by ensuring the City's technology portfolio and organizational culture can accommodate a scalable future.

Getting to a Smart City Albuquerque can be obtained through the following:

☐ Data visualization and performance management dashboards. Using open data (financial and City service performance), build out real-time performance dashboards with city event data using visualization and geospatial mapping tools. Take 311 service data and visually map to City neighborhoods to have a 24/7 view of what is happening in our City. Create the City's dynamic, performance dashboard with gauges and dials to determine service delivery effectiveness.

- ☐ Broadband Internet, commit to improving our City by investing in broadband infrastructure. Use the Central Avenue Broadband project to redefine broadband capabilities along Central Avenue and connect those digitally inclusive sites to Gigabit Internet as outlined in the assessment study. Pilot the project along Central and then replicate the success throughout other neighborhoods in the City
- ☐ Smart City real-time (big) data. Leverage sensor based networks for parking, intelligent traffic systems, and mass transit. Partner with Municipal Development for Parking and Intelligent Traffic System integration. Partner with Transit on ABQRide and Albuquerque Rapid Transit (ART) projects to continue to build application portfolios.
- ☐ Innovation Central. Continue to support and develop the private/public relationships needed to advance the use of technology for economic development, city services, and constituent use.
- ☐ Further develop relationships with State and Local Government, Sandia Labs, UNM, and the local tech community.
- ☐ Further the relationship with Code for America and establish a local brigade.

4. Public Safety Communication Initiatives

- ☐ 800 MHz Radio system, ensure that public safety is equipped with capable communications systems. The current 800 MHz Radio System for Public Safety is past end-of-life and obsolete. The City must replace this with a new, P25 compliant, 800 MHz radio system, replacing the current, obsolete EDACS system. Funding was obtained from the state legislature in FY20, and the project has now begun.

5. Public Safety technology initiatives

- ☐ Continued support of data management efforts to comply with DoJ CASA.
- ☐ Assistance and support in identifying and deploying replacement for Early Intervention System and benchmarking systems.
- ☐ Continue to renew end user hardware (laptops, toughbooks, desktops) to aim for an average aging of 7 years.
- ☐ Install 2 Factor Authentication on all mobile devices.
- ☐ Continued buildout of data warehouse to support crime analysis and overall business process improvement within APD.
- ☐ Continued assistance to APD management efforts to identify and improve business processes.
- ☐ Online crash reporting.
- ☐ Deployment of Mobile Device Management.
- ☐ Review of online services.
- ☐ Deployment of case management system
- ☐ Copperfire Replacement
- ☐ Real Time Crime Center (RTCC) process maturation.

6.   Enterprise Resource Planning (ERP) Initiatives

☐ Kronos project (automated time collection and absence management for all City Departments) completion.

☐ APD TeleStaff process improvement

☐ PeopleSoft Treasury, Cash Management and Deal Management modules completion.

☐ PeopleSoft Purchasing supply chain modules including "req. (requisition) to check" work flow functionality, completion.

☐ HRIS modules and Employee Benefits Self Service completion.

☐ Identify, scope and implement replacement for contract tracking

☐ Electronic Signatures, process maturation to additional workflows.

☐ Deployment of PeopleSoft "fluid" interface to support employee self-service

7.   Enterprise Applications (multi-departmental)

☐ Create interfaces through Application Programming Interfaces (APIs). Many systems have been implemented recently and more are planned for the next 3-5 years. These systems have generally been coupled with function-specific process improvements (e.g., food permits). The City is now ready to link these systems and processes to bring greater efficiency and efficacy to cross-function processes (e.g., link food permits to special event permits).

☐ Promote a shared systems (solutions) strategy, deliver departmental solutions based on an enterprise vision. Implement solutions that are shared across City Departments with common business requirements (e.g. point-of-sale, case management, and asset management). Shared solutions consisting of single-instance, function-specific, enterprise versions should be considered ahead of department-specific solutions.

☐ Examples of recent shared system implementations include:
  - PeopleSoft
  - Kronos (automated time keeping across all City Depts.)
  - Yardi (facility lease and maintenance management across multiple City Depts.)
  - ServiceNow (self-service Help Desk and IT service level management)
  - Siriusware Point of Sale
  - Plone web content management system

☐ Business Intelligence/Analytics and performance based/metrics dashboard implementation

- Business analytic tools currently used at the City require significant Department of Technology and Innovation (DTI) involvement for implementation and modification and are sometimes limited in timeliness and usability. Departments are requesting, and DTI is looking to provide, analytic tools that are easier to use for the data analyst, less maintenance for the technical support, more intuitive for the general user. Newer technology will increase availability and provide opportunity to incorporate predictive analytics in operational and strategic decision-making.

☐ On-Base, Enterprise Content (Document) management, implementation.

☐ Yardi project – process/application maturation
  - Facility Asset and Work Order Management System
  - Cultural Services, Solid Waste Management, DMD, Parks and Rec, Planning/Real Property

☐ 311 CRM upgrade to Oracle RightNow, cloud version implementation

☐ Boards and Commissions, solutions survey

☐ Employee Communication project completion

☐ IPRA project implementation

☐ Campaign Finance Reporting maturation

☐ Volunteerism application maturation

☐ Citizen Engagement
  - ABQ311 and online service request portals
  - Online parking citations payment, business registration renewals online
  - Expand into mobile admissions and payments for events
  - Expand online facility reservations
  - Boost use of GIS with more integration with online content

8. Departmental Initiatives.

☐ Animal Services
  - Chameleon, Pet Harbor process maturation

☐ Cultural Services
  - TMS, collection software upgrade done, open data and collections going online

☐ DFAS
  - Risk Management
    - select new Information System

☐ DMD
  - Sensor based parking Smart parking technology to provide public with parking garage space availability (including handicap spaces), cost, hours, and self-service payments
  - ParkMe app, smart parking development

- VueWorks /Edgesoft process maturation
- Online payments, construction permitting, barricades, EPA permits, etc. functionality in 6 months. Within Edgesoft/VueWorks, provide this year;
  - Construction permits
  - Barricade and excavation permitting
  - EPA storm water quality permitting
  - On-line permit submittals, permit tracking, and workflow approvals
  - Construction inspections
- Online citizen request form for Neighborhood Traffic Management study
☐ EHD
- Air Quality sensor data (particulates/pollen), online data visualization
- Implement online permitting for Environmental Health permits (e.g., food, pools)
☐ Family and Community Services
- Early Childhood Development, online payments this year
☐ Legal
- ProLaw upgrade
☐ Parks and Recreation
- Rec and League Management solution development
- Golf courses online using City POS systems (every sale goes through the POS now)
- Online tee time solution development
- Irrigation
  - Better schedule and gauge park and median irrigation
  - Increase number of precipitation stations throughout the City
  - Replace aging systems
- Identify and deploy replacement fixed assets system
☐ Planning
- Computronix implementation
  - Licensing and payments online
  - Event permitting online
  - Permitting, tracking, and enforcement functionality for code enforcement (zoning), building safety, and planning.
- ProjectDox (Electronic Plan Review)
  - Currently in production for building permit online plan reviews
  - Design Review Board (DRB) coming online FY17
- Environmental Planning Commission (EPC) coming online FY18
- Improve Real Property technology for tracking City-owned and City-leased properties.
☐ Senior Affairs
- Online senior center membership implementation
- Food inventory management system implementation

- Create or procure a repository for family, senior, and community services information. Provide a basic portal (most likely website) to present that information.

☐ Solid Waste
- Fleet Dispatch and Routing Management software, in progress

☐ Transit
- Online/smart phone payment for bus passes
- Increase the options for presentation of bus passes –e.g. implement a flash-pass to be used with a smart phone
- Partner with ART fiber design and build for Community Broadband
- Upgrade communications devices on buses allowing for passenger Internet service on most buses
- Share the underlying technology and infrastructure with other transit-oriented entities to allow citizens a broader view of all transit options in the geography
- Plan the technology for the Albuquerque Rapid Transit buses and for the stations of that project

9. Open Data Initiatives.

☐ Expand ABQ View and ABQ Data (City's transparency and open data portals).
- Increase the number of datasets in the open data portfolio.

☐ Code for America, City selected as 2015 CFA city.
- Partner with CFA to bring a civic coding event to the City of Albuquerque.
- Establish a local CFA Brigade.

10. Mobile application Initiatives

☐ Central to this initiative are the ABQ311 online and mobile applications from See-Click-Fix.
☐ Continue to partner with Departments in developing their mobile portfolios; e.g., expand and compliment the Bio Park, Transit, and Museum mobile applications.

11. Infrastructure Initiatives

☐ Data Center consolidation. Take full advantage of the City's primary and secondary data centers by consolidating Departmental data centers and closets into these two main datacenters. This will allow for a better utilization of compute resources and provide for Disaster Recovery. Departments will still manage and own their compute resources, but by consolidating into these two co-location centers, the City will reduce its overall cost for cooling, security, and energy expenses.

- Library and Solid Waste completed.

☐ Mature the on-premise/internal cloud service as an alternative option to off-premise cloud. When considering new applications, the business case needs to address criteria such as internal vs. external cloud hosting in order to establish which option would be more desirable based on cost and performance factors as well as the needs of the business.

☐ Mature the Disaster Recovery Program by periodic failover continuity testing to the Pino yards fail-over site. Successful fail-over testing will be accomplished for all Tier 1 (high priority) applications. All other applications must be fully restored based upon the mean time to recover requirements as identified by the business owners.

- AD recovery

- Application Firewall failover

- Backup recovery (multiple sites and applications)

- ERP failover

- Exchange recovery

- File sharing failover

- FleetFocus failover

- POS failover

- Tiburon failover

☐ Mature the cyber security program that takes into account the following;

- Recurring security posture assessments. Address any gaps and implement pro-active cyber security processes to address threats and security vulnerabilities

- Mature Layered Security Model. Ensure all of the components of cyber security are optimized and integrated for optimal results, (e.g. firewalls, intrusion detection/prevention, internet/web filtering, spam filtering, virus/malware protection, and patch management)

- Enhance Intrusion Detection and Prevention (IDP) capabilities both at Primary and Disaster Recovery locations. Upgrading existing IDP appliance providing capability

to integrate with Active Directory, automate filter identification and upgraded GeoLocation capabilities for the detection and prevention of malicious software and sites.

- Perform security vulnerability assessment quarterly on network resources and applications.

- Risk Management, utilizing the Risksense software, organize, assign and manage network and application vulnerabilities from discovery to remediation.

- Implementation of Endpoint Encryption for the protection of Patient Information in an effort to adhere to HIPPA requirement.

- Configuration of Point of Sales (PoS) devices and network to meet PCI Compliance requirements.

- Continued maintenance of Security Awareness Website.

- Continued review and update of City of Albuquerque Security Policy and Standards.

☐ Mature the DTI Information Technology Infrastructure Library (ITIL) program currently in place by fully developing the remaining ITIL Service Level Management processes and ensuring they are inculcated into all IT Operations.

- 35 ITIL certified DTI employees

☐ Managed Desktop Program, continue the roll-out of the Enterprise PC replacement program.
- 873 completed of 1400

☐ Voice over IP Project. Replace the existing PBX switches with Voice over IP (VOIP) technology. Continue the roll-out of citywide VOIP to city facility sites that currently have adequate bandwidth and a traditional PBX voice switch.

☐ Oracle 12c upgrade: Migrate the existing Oracle 9 and Oracle 11g PeopleSoft database environments to the current database version of Oracle. Transition from Oracle Virtual Machine to VMware, thus providing higher levels of availability and redundancy thereby increasing fault tolerance.

☐ Provide for the messaging server upgrade from Exchange 2010 to Exchange 2013, this includes e-mail archiving and Servers/storage/licensing. Set up the secondary failover email production site at Pino yards for Disaster Recovery.

☐ Server and storage requirements for increased capacity in the server environments. Purchase additional blade servers and maintain and increase the server/SAN/VM software to provide for additional capability for fail-over at Pino if a DR event occurred at City Hall. Will be able to maintain City technology services should a critical event occur, provides for a distributed, cooperative processing environment.

☐ Storage replacement/upgrade initiative: DS4800 storage device is at end of life and will soon no longer be supported by IBM. In addition this will allow new applications and growth of the internal cloud (icloud) initiative within the City.

☐ VMware Hardware refresh: Refresh the VMware with new hardware to take advantage of new technology, this equipment was purchased in 2011. Computer hardware should be refreshed on a 5 year lifecycle.

☐ Virtual Desktop infrastructure (servers, storage, client, licensing) implementation. This will work in conjunction with the desktop refresh lifecycle and provide faster refresh times and less down time for users. Creates a uniform, standard approach to desktop computing platforms.

☐ Application firewall implementation. Provides for performance load-balancing and an additional layer of security for the City's application environment.

12. Network Initiatives.

☐ Cisco Network Identity management system implementation. Will provide for enhanced network security for all identities (users) and devices connecting to the City's network. Non-city devices will also be able to be identified and managed appropriately.

☐ Mobile Device Management (MDM) implementation. Will provide for remote security and administration/end-point management of all mobile devices, smart phones, tablets, laptops, (mobile devices) assigned as a city resource

☐ Core Router upgrade to accommodate 10 GB network traffic requirements. This will increase network bandwidth from 1Gb to 10Gb capacity for all City of Albuquerque departments by adding the additional capacity of 10 Gb at the core router.

☐ Additional network switching capability, add new switches and increase failover capability. Will provide for increased performance and capacity to the network for all City of Albuquerque departments geographically spread over 150 facilities.

☐ Network monitoring. Purchase Fluke network monitoring and analysis to determine and proactively manage traffic flow. The analytics this tool provides will enable the City to better manage, monitor, and trend network traffic to improve network reliability and service delivery.

☐ Disaster Recovery/Palo Alto firewall solution. This is to mirror City's network environment to the Disaster Recovery site for seamless failover and load balancing (in the event of a catastrophic failure).