

# 2018 ANNUAL REPORT

Baltimore City Office of Information and Technology

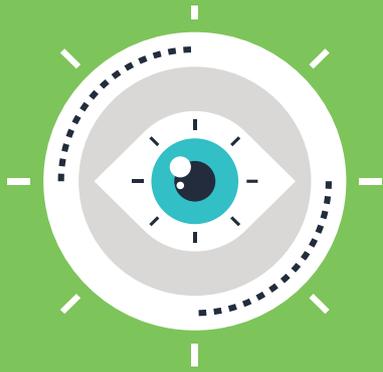


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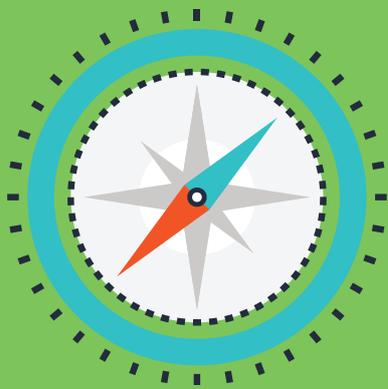


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## Our Vision

Over the next decade engage all City departments, businesses and citizens to design, build and implement technology that creates a safe, thriving and smart city.



## Our Mission

The Baltimore City Office of Information & Technology will provide sustainable infrastructure and technology to support and enhance City departments, communities, businesses, and mayoral goals.

## TABLE OF CONTENTS

	Page
Word from the CIO	2
Our Services	3
Our Top Priorities	4
Strategic Plan Update	5 - 8
311 Upgrades Pages	9 - 10
Finance & HR Modernization	11
Employee Recognition	12
Strategic Partnerships	12
Improving Customer Service	13
Supporting Public Safety	14
Smart Cities	15
Infrastructure and Security	16
Data, Analytics & Apps	17
What's coming in 2019?	18

# WORD FROM THE CIO



Since our launch of the City's first ever Inclusive Digital Transformation Strategic Plan, our dedicated staff has worked tirelessly to start bringing about the changes necessary to transform not only an agency, but IT operations across city government and the community. The agency began with changing its name from the Mayor's Office of Information & Technology (MOIT) to the Baltimore City Office of Information & Technology (BCIT) as well as an expansion of key personnel brought on to change the culture, operations, and brand of the agency.

Our expansion is not exclusive to our internal operations, our staff is focusing on increasing and improving stakeholder engagement and relations, taking proactive steps in understanding the service needs of our partner City agencies, and most importantly, provide exceptional customer service.

These changes have led to an increase in internal productivity, reevaluation of processes and governance, and an improvement in communication. By changing our agency's business model, we have transformed how staff views success. Productivity is no longer simply measured by the volume of tickets completed; but rather how we execute on project from inception to completion by each member involved in the work. We view this holistic strategy as the future, not only in technology, but for service delivery in general.

In our strategic plan, we outline a vision that begins with building the staff for a 21st century Information Technology infrastructure capability, in 2018 BCIT took strides in beginning to fulfill that vision. We are proud and eager to continue with this forward momentum into 2019 and beyond.

Sincerely,

A handwritten signature in black ink, appearing to read 'Frank Johnson'. The signature is fluid and cursive, with a long horizontal flourish at the end.

Frank Johnson

# Our Services

BCIT is more than just email and network connectivity. Our agency is made up of a number of divisions that provide services across city government.



## 311

The 311 call center is the city's call intake system branded as a customer's "One Call to City Hall" to request services, get general information and answer non-emergency questions. The information gathered from 311 is utilized by all city agencies to access and measure customer responsiveness and satisfaction.



## Service Desk & Customer Service

The Service Desk is committed to delivering a proactive, knowledgeable and reliable service at first point of contact, in a variety of methods to suit our customer's needs, including telephone, email, and in person resulting in resolutions to IT issues.



## Agile DevOps

The Agile DevOps team is BCIT's application support team. This team does all custom coding and system integration. They support the City's intranet, public website, and provide other technical support duties. In the past year, the team has shifted from historic DevOps practices to an agile focused operation.



## Infrastructure & Operations

This division is responsible for maintaining the City's Internet connectivity and infrastructure, CCTV operation, 800MHz Safety Radio System infrastructure and connectivity, and mainframe infrastructure. This division is also responsible for the City's ongoing migration to a more cloud based environment.



## Project Management

The vision of the BCIT Enterprise PMO is to reshape the culture to be more focused on strategic alignment with the City's objectives by implementing a centralized approach to provide Enterprise-wide guidance on governance, project portfolio management best practices, mentoring, tools, standardized processes and continuous improvement measurements.



## Data & Business Intelligence

The Data & BI team is BCIT's database administration team that supports all data sources, data workloads, and data related solutions including OpenBaltimore. This team is also comprised of our GIS staff that support agencies in the use of GIS data and mapping.



## Information Security (InfoSec)

The INFOSEC division focuses on the discovery of cyber threats, characterization and attribution of those threats, creation and sharing of situational awareness, and the development of mitigation strategies. It is responsible for developing the City's security policies, identify and remediating cyber threats and increasing security awareness for the City of Baltimore's agencies, departments, personnel, and citizens.

# Our Top Priorities

Although there are a significant number of priorities for BCIT, these listed below comprise the top five priorities that are the focus of the agency at this time.



## Organizational Development

The top priority for IT is organizational development and human capital. A new IT governance structure will be created for the City as we work to implement the strategic plan.

## Consent Decree Tech

BCIT has been charged with supporting the implementation of Consent Decree related tech projects for Baltimore Police.



## Enterprise Resource Planning

The City is in the early stages of project planning to shift the City to a modern ERP. A new system will allow for improved financial and HR processes citywide.

## The Platform

A core focus of BCIT is moving to a more agile, data focused and cloud based environment to provide improved services for customers and citizens.



## Broadband Communications

Expansion of broadband is critical to growing Baltimore City. BCIT is currently in development of a citywide broadband communications plan.

# Our Strategic Plan

In spring 2018, the Baltimore City Office of Information and Technology (BCIT) launched the City's first ever Inclusive Digital Transformation Strategic Plan for public comment. The plan is a road map that will guide us towards a technology ecosystem that reduces redundancy and costs while improving the public's experience with city government. The five-year vision sets our priorities for changing IT culture and improving customer service, securing critical IT operations and infrastructure, and building partnerships and increasing community engagement around technology. This is not the City's plan but the community's IT plan.

BCIT received feedback from the tech community, educational institutions, strategic partners and Baltimore City citizens. This feedback was incorporated into the final version of the plan that was released in early summer 2018.

The strategic plan is divided into three major categories:



## Change the IT Culture and Improve Customer Service

### One IT Enterprise

Centralize various IT operations and functions to reduce cost, improve efficiency and streamline operations

### Human Capital Investment

Improve training and IT professional staffing levels

### Governance & Administration

Establish a structure that promotes cross-agency collaboration, strategic alignment, and continuous change for IT initiatives

### DevOps

Integrate software development to strengthen enterprise IT operations and service delivery

## Support and Secure Critical IT Operations and Infrastructure

### Cloud Services

Utilize cloud services to rapidly deploy platforms and software without the need to build physical infrastructure

### Data Telecommunications

Invest in next-generation network infrastructure to connect the City with high-volume, high-velocity data communications

### Enterprise Resource Planning (ERP) modernization

Procure a modern and integrated system to streamline the complexities of the ERP landscape

## Build IT Partnerships & Increase Community Engagement Around Technology

### Data and Analytics Hub

Expand the City's capacity to combine data residing in different sources and provide users with the ability to access, use, and benefit from the data

### IoT-Enabled Smart City

Deploy new technology that improves the quality of life and service delivery for all city residents, businesses and visitors

### Baltimore Tech Center

Create a space for people to view and experience immersive technology environments

### P3 Partnerships

Partner with external stakeholders to leverage technology resources for the betterment of all city residents and businesses

For more details please visit the plan at [technology.baltimorecity.gov](https://technology.baltimorecity.gov)

# Our Strategic Plan

# 6

WAYS BALTIMORE CITY INFORMATION & TECHNOLOGY (BCIT) WILL SUPPORT MAYOR CATHERINE E. PUGH'S FIVE PILLARS TO "MOVE BALTIMORE FORWARD"

<b>1</b>	<b>CHANGE THE CULTURE OF</b>				
		Using Band-Aids	Building Silos	Using Outdated Technology	
<b>2</b>	<b>START</b>				
		Connecting Resources	Identifying Opportunities	Measuring Progress	
<b>3</b>	<b>TRY</b>				
		New Ideas	New Strategies	New Tactics	
<b>4</b>	<b>DISRUPT GOVERNANCE TO</b>				
		Eliminate Wasteful Systems	Reorganize Operations		
<b>5</b>	<b>IMPROVE OPERATIONS TO</b>				
		Continuously Communicate	Encourage Leadership	Increase Skills and Staffing Levels	
<b>6</b>	<b>ENGAGE TO</b>				
		Showcase Progress	Build Relationships	Include Everyone	

# Our Strategic Plan: Where are We?

Outlined in the Strategic Plan are a number of initiatives. The chart below highlight where we are with implementation of those initiatives.

Plan for a baseline IT budget in the average benchmark range, with increases over the next 5 years up to or about the 75th percentile range	In Progress
<b>Creation of Agency Resource Manager (ARM) Roles:</b> These senior-level BCIT employees will be given the responsibility of establishing and maintaining value-driven, strategic relationships with one or more City departments and pro actively manage business demand and customer satisfaction.	Upcoming
<b>Transition to an enterprise model</b> will offer new services and operations.	Upcoming
<b>Services will be offered</b> in the areas of application and data hosting, workplace and end-user computing, unified communications and collaboration, and others as needed.	Upcoming
<b>A catalog will be developed</b> that describes the services available to customer agencies, the service level tiers offered, and the performance measurements.	In Progress
<b>Create an Enterprise Service Desk</b> to provide a one-stop-shop for any and all IT needs integrated with agency and application-specific support teams.	Upcoming
<b>Create a modern command center</b> to monitor network and security operations and report status, resolve issues, and communicate with stakeholders in real-time.	Upcoming
<b>Perform a responsible vendor orchestration and coordination function.</b> With multiple vendors involved in delivering end-to-end services, vendors work as partners with the city and work together to deliver desired outcomes in addition to basic Service Level Agreements (SLAs).	In Progress
<b>Design an ongoing process of risk management</b> that will pro actively seek out negative impacts of internal operations, and potential improvements to better align with enterprise needs.	Upcoming
<b>Develop a pipeline of Baltimore Based IT Talent</b> – BCIT will partner with Baltimore City Public Schools (BCPS) and the two and four-year educational institutions to create a tech talent growth initiative and to build a tech talent pool in Baltimore.	In Progress
<b>Skills Assessment</b> – To identify training and competency gaps, BCIT will conduct an enterprise-wide evaluation of skills and competencies.	Upcoming
<b>Career Ladder Mobility</b> – To facilitate opportunities for professional growth and career mobility, BCIT will work with the Department of Human Resources (DHR) to conduct a review of all IT related positions and utilize the findings to create job descriptions and salaries that better align with other public-sector IT departments.	In Progress
<b>Create a Citywide IT training program</b> – To ensure staff stays current with changes in the industry and have the ability to move forward in their career, BCIT will need to develop a robust training program. This program should not only support the continued training of front line IT professionals, but also provide an avenue for all Baltimore City employees to stay up to date with changes in IT. An online training platform (enterprise wide) will provide staff the ability to access a variety of training modules, from recognized certifications to coding skills from any location.	Upcoming
<b>Provide cross-training opportunities</b> – To improve knowledge sharing between teams, provide for continuity of operations and allow staff the ability to grow in their career through access to new skills and information, BCIT will provide cross-training opportunities across agencies and divisions.	In Progress
<b>Develop a recognition program</b> – To acknowledge and motivate exemplary staff, BCIT will build an inclusive and participatory recognition program.	On-going
<b>Create a diversity and inclusion program</b> – BCIT does not have a documented diversity and inclusion program. Initiatives focused on diverse workplace recruitment should be undertaken in collaboration with the Department of Human Resources.	In Progress
<b>University Project Delivery Collaboration</b> – In order to meet the gap of IT needs in the city, BCIT will partner with local academic institutions to engage students through working on a substantive project for a City agency.	Upcoming

# Our Strategic Plan: Where are We?

Outlined in the Strategic Plan are a number of initiatives. The chart below highlight where we are with implementation of those initiatives.

An <b>Executive IT Strategy &amp; Investment Board</b> will be established to set citywide IT strategic objectives that align with the Mayor's policy priorities.	In Progress
The <b>existing IT Council</b> will continue to provide agencies with visibility and collaboration opportunities through regular meetings and events, and the formation of subcouncils and subcommittees.	On-going
A <b>Smart City Council</b> will be established to focus on Smart City strategy, partnerships, opportunities, and coordination. It will be led by the CIO, leverage the IT Council for collaboration and communications, and will lead Smart City development for the City.	On-going
The EPMO will establish a <b>Demand Management process</b> to manage the balance between enterprise strategy, agency missions, and operational requirements.	Upcoming
The <b>CISO</b> will enhance the security program by establishing a framework of resources and principles through which projects can be managed.	Upcoming
Baltimore's DevOps will <b>integrate software development</b> with Enterprise IT Operations, Service Delivery, collaborating and working together on environments, automation, configuration, and delivery tools and processes.	Upcoming
Baltimore will begin to <b>expand to a hybrid cloud model</b> to make the best use of existing city-managed infrastructure while taking advantage of scalable, reliable, and secure public cloud services that provide the foundation for integrated enterprise applications, platforms, and data.	Upcoming
<b>Develop a procurement strategy</b> that enables flexible, scalable, pay-for-use contracts for products, but also professional services to provide architecture, development, operations, training, and advisory support.	Upcoming
<b>Develop a broadband strategic plan</b> and road map.	In Progress
Develop the <b>ERP Modernization Strategy</b> .	In Progress
<b>Create an enterprise Data &amp; Analytics Hub</b> that will evolve to meet the data integration needs of the City.	Upcoming
BCIT will collaborate with the Mayor's Office of Sustainable Solutions to <b>create a robust, dynamic enterprise data environment (EDE)</b> .	Upcoming
Baltimore seeks to <b>develop a robust analytics operation</b> which institutes strong , meaningful, operational and predictive analytics at every level of the enterprise to improve operational performance, service to Baltimore's residents and taxpayer value.	In Progress
<b>GIS should evolve</b> towards a true enterprise operation with centralized licensing and migration of core GIS data functions.	Upcoming
BCIT will <b>leverage enterprise capabilities</b> to prepare for the unique demands of the Internet of Things (IoT)	Upcoming
BCIT will work with the City's Smart City Council to <b>adopt and establish standards</b> to support interoperability and sustainability of IoT assets, infrastructure, and services (e.g. NIST's IOT-Enabled Smart City Framework, commercial standards, or partnership agreements).	Upcoming
To achieve that goal, <b>Baltimore will create a chic, modern physical space</b> that enables innovative individuals and organizations to collaborate and work together on technical solutions that enhance the City's image as a place to live and work.	Upcoming
BCIT, in collaboration with the Department of Finance and Bureau of Procurement, will need to <b>create a tech-focused procurement team</b> focused solely on information technology purchases.	In Progress
The City of Baltimore will need to <b>increase the level of engagement</b> with all members of the community, of every age, through the website, social media, listening tours, and community surveys.	In Progress

# 311 Upgrades

## Telephone System Migration

This past year, 311 migrated from a telephone system that was initially installed in 1996 replacing the system with a VOIP system. This project was designed and managed to create a seamless and transparent transition and was executed in May 2018, without dropping one call. This project took seven months from design to implementation. By upgrading this technology, 311 is now in a position to implement new technology that includes, but is not limited to, automated intelligence.

311 replaced the 16-year-old CRM system with a cloud based system (Salesforce). This project took 21 months from management to implementation and was launched citywide in September 2018. This upgrade allowed us to expand our mapping capabilities and will position us to provide future communication avenues such as texting and chat. To prepare for this implementation, the 311 staff worked collaboratively with every city agency to document workflow processes and configured the system to capture agency workflows and standard operating procedures. 311 staff also trained and prepared over 1000 employees citywide to ensure that workforce readiness was seamless. Training courses were also conducted at the agency location to ensure we were demonstrating actual tasks in real time.

## Service Request Modernization / New 311

## 311 Quick Facts

Approximately  
**1 million**  
calls received



**80%**  
answered  
in under **60**  
seconds

Over **1,000** City  
employees  
trained on  
new 311 system



Baltimore  
was the first  
city to have a  
311 system  
beginning  
in 1996

# Service Request Modernization

One system for all communication channels



## ONE SYSTEM FOR ALL PLATFORMS

Screen automatically  
adjusts to device

Configure, NOT customize

Design ONCE, use MANY  
TIMES

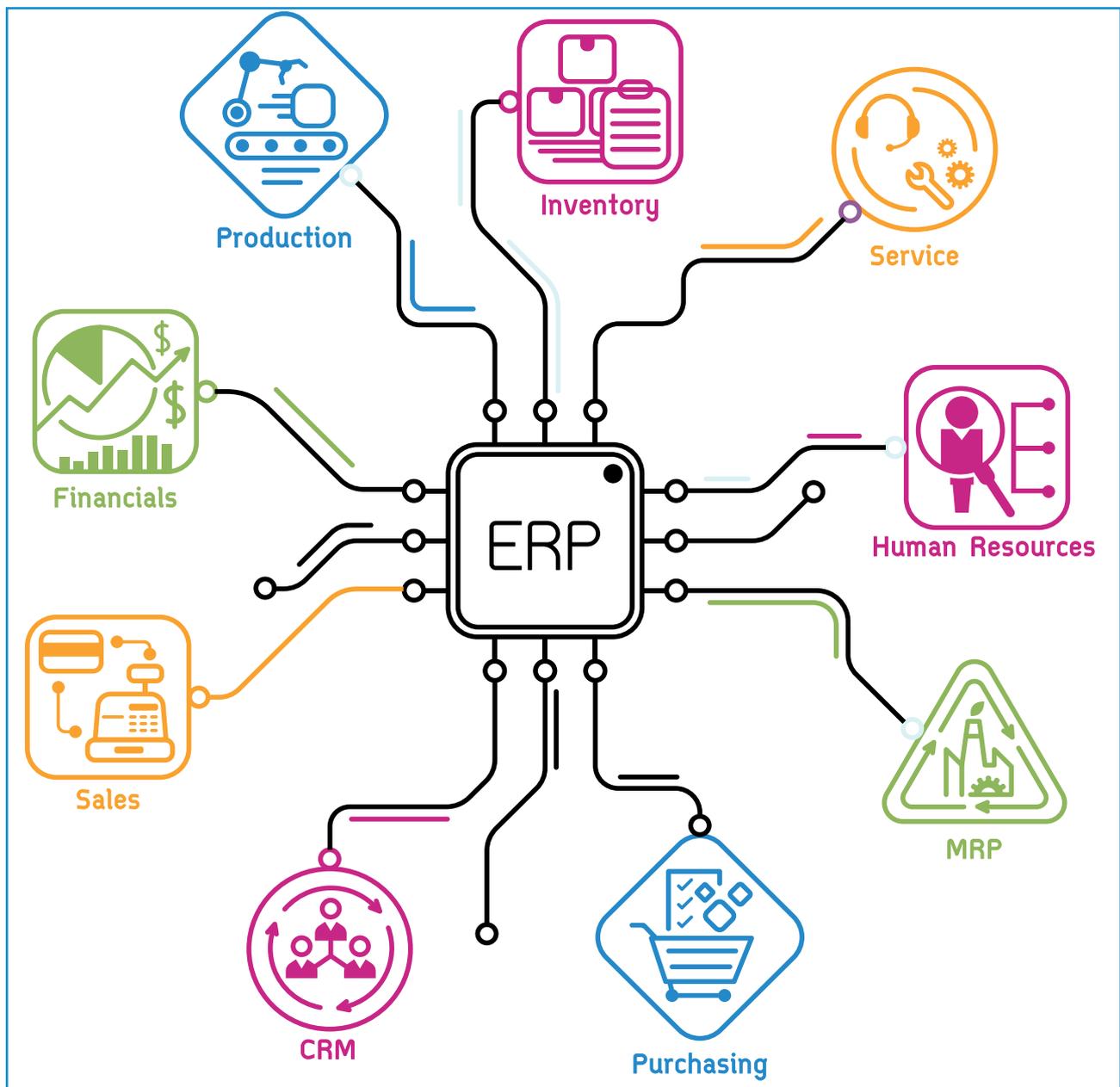
The new Salesforce platform will allow for easily configurable and personalized reports and dashboards for City agencies.

It will also “plug-in” with CitistatSMART.

# Finance & HR Modernization

In early summer 2018, BCIT, the Department of Finance and the Department of Human Resources began planning for the transition to an enterprise resource system platform that would modernize the City's legacy financial and human resources systems. An RFI was issued in the summer with vendor presentations occurring throughout the fall. A final selection is expected to be made in 2019.

The new platform will be a modern cloud-based system that will enable the City of Baltimore to modernize human resources and financial operations and processes.





# Improving Customer Service

In 2018, BCIT started to reimagine the City's service desk. BCIT is focusing on customer service and improving the experiences of city employees that contact BCIT for assistance.

The Service Desk team is comprised of four Service Desk techs, three field technicians, one PC Refresh tech, two leads, one supervisor and one manager. A day to day for our service and field techs consist of providing Tier I/II support which can range from application support to hardware installation.

The Service Desk is committed to delivering a proactive, knowledgeable and reliable service at first point of contact, utilizing a variety of methods to suit our customer's needs, including telephone, email, and in person resulting in resolutions to IT issues.

## In 2018:

### Total Tickets Received through Footprints

Received: 27,788  
Closed: 27,502

### Service Desk Ticket Totals

Received: 8,059  
Closed: 8,054

### Account Creations Tickets

Received: 2,746  
Closed: 2,725

### City Council

Received: 216  
Closed: 216

### City Hall

Received: 1,574  
Closed: 1,574

### Fire Department

Received: 580  
Closed: 581\*

### Field

Received: 931  
Closed: 930

### Quality Assurance

Received: 251  
Closed: 252\*



## Keeping Technology Current

The Service Desk manages the City's hardware and software refresh program, ensuring City PC's are refreshed on a regular basis.

Between January and November 2018, BCIT refreshed

# 926 PCs

## Training Staff

In 2018, the BCIT service desk had three staff become ITIL v.11 Foundations certified, had one trained in ITIL and Sql Server and one trained in SharePoint.

BCIT is proud of the service desk staff that is continuing to build on their IT skillset.

\* tickets closed above those received were tickets opened in prior year.

NOTE: Footprints is the City's IT ticketing system.

# Supporting Public Safety

CitiWatch provides state-of-the-art CCTV cameras throughout the City of Baltimore in an effort to assist Police and other city agencies with public safety. The cameras are monitored 24 hours a day and 365 days of the year by trained and certified CCTV staff with law enforcement backgrounds. It is the responsibility of BCIT to ensure the functionality of the cameras and to provide technical vision for future CCTV initiatives.

## **Bloomberg Initiative**

MOCJ was awarded a 5 million dollar grant from the Bloomberg Foundation in late 2017 for public safety. MOCJ, BPD and BCIT worked to identify 55 camera locations. Collington Square and Heritage Crossing came online in November 2018 with a total of 24 cameras. 26 additional cameras are scheduled for installation by Spring 2019.

## **Comcast – CitiWatch Partnership**

CitiWatch (MOCJ, BPD and BCIT) and Comcast are in negotiations to partner in an effort to address public safety. Comcast will donate 100 CitiWatch cameras to Baltimore as part of this project. In addition, Comcast will offer a service to its customers that will allow CitiWatch to have access to private cameras that are located in public spaces. The expected start date is Spring 2019.

## **LDC CitiWatch Project**

MOCJ, BPD and BCIT have worked with the Casino Local Development Council (LDC) to address public safety around the casino impact areas and have identified CCTV locations. In the Spring of 2018, the Pigtown initiative was completed with 15 CitiWatch cameras while Waterview Avenue was completed shortly thereafter with 3 additional cameras in the Summer of 2018. Westport will be the next phase of the project with a completion date slated for Spring 2019.

## **Brooklyn Homes**

CitiWatch partnered with the Housing Authority (HABC) to apply for a grant for public safety in 2016 and it was awarded in 2017. CitiWatch and HABC used the funding for better lighting in the neighborhood and CitiWatch CCTV cameras. The seven CitiWatch cameras came online in the Fall of 2018.

# Smart Cities

In Summer 2018, as part of the implementation of the Inclusive Digital Transformation Strategic Plan, Baltimore City launched its first ever Smart City Committee.

The committee is made up of representatives from city departments, universities, Baltimore businesses and community members. The meetings are open to the public and are working to create the foundation for the City's Smart City Strategic Plan.

BCIT will work closely with the committee to adopt and establish standards to support interoperability and sustainability of IoT assets, infrastructure, and services (e.g. NIST's IoT-Enabled Smart City Framework, commercial standards, or partnership agreements).

Representatives from BCIT and the Mayor's Office have presented at a number of smart city conferences over the past year to tell the City's smart city story including: The Smart Cities Week Conference and Exhibition in Washington, DC and the Smart City Expo World Congress.



# Infrastructure and Security

## Firewall Security

BCIT has made investments in upgrading the City's legacy firewall during 2018. The upgrades will support higher data throughputs and analysis.



## Enterprise Data Center

BCIT has virtualized 95% of known City system workloads as part of the effort to modernize and integrate systems through private and public hybrid clouds.



## Internet Optimization and Stabilization



BCIT began the process to upgrade the City's internet capacity from 1GB to 10GB.

Completed Port Upgrade top of the rack to 10GB.



Completed a wifi assessment of Baltimore City Hall the findings of which will be implemented in 2019.

## City Email System

BCIT has been completed migration to Office 365 for email. BCIT is currently developing the roll-out plan to scale the Office 365 cloud based mail system enterprise wide. Migrating the City to a cloud based system will provide for greater storage capacity and improved ability to collaborate between agencies with access to new tools.



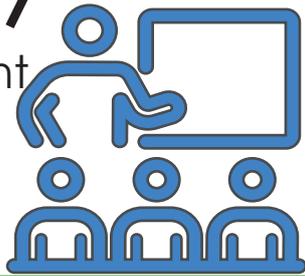
# Data, Analytics & Apps

## Open Data

In 2018, BCIT completed the first phase of Open Baltimore data cleanup and maintenance and successfully conducted open data platform RFI sessions with multiple vendors. The RFI process will continue in 2019.

## BALTIMORECITY.GOV

In 2018, BCIT conducted **21** Drupal Training classes and trained **67** Drupal Content Editors.

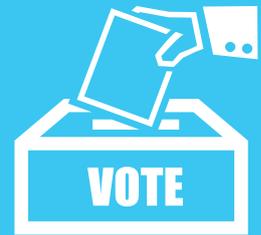


## Parking Amnesty

BCIT supported the 2018 City's Amnesty Program. The program initiated by the Mayor's Office and sponsored by the Department of Finance was a multi-agency collaboration. BCIT undertook significant programming changes to City systems to enable amnesty and expanded the areas required for the online payment processing which was double the normal outstanding records. BCIT assured the availability of the online portal making it available close to 100% of the time for those wanting to make payments. There were only a few seconds of downtime while processing close to 10 times the normal payment volume. BCIT also created a PowerBI dashboard to provide data on the program as it was underway. (<http://cityservices.baltimorecity.gov/amnesty/>)



## 2018 Elections



BCIT supported the 2018 primary and general elections through the establishment of database systems to store georeferenced Polling Places and developed a web GIS application and dashboards. The application helped to efficiently monitor and evaluate the election processes. BCIT's EGIS team also trained police officers on the application, developed necessary manuals and were involved on the days of elections to provide further technical assistance.

# What's coming in 2019?

## Fiber Broadband Study

BCIT is in the final stages of completing its Fiber Broadband Study as outlined in the Strategic Plan. This plan will be released in Spring 2019 and will provide recommendations for how Baltimore should move forward with its fiber infrastructure.

## Civic Data Analytics

BCIT has drafted a civic data analytic plan that will be finalized and released in 2019 when a new Chief Data Officer is hired.

## Public Safety

BCIT is in the midst of procuring upgrades to the City's fire station alerting and consoles. The upgraded equipment will be installed in 2019 and provide an enhanced feature set and optimal workflow management. It will provide a truly integrated approach with Baltimore City's existing radio infrastructure investment.

## IT Unification

BCIT has drafted a future state organizational development plan to unify the IT resources across Baltimore, add resources where needed and identify how these additional resources would be utilized. BCIT is now partnering with agencies across the city to refine this plan based on unique needs of the different agencies. This will be an iterative process. There will be ongoing outreach and communication as BCIT works with each agency to engage, discover, assess, design and execute. Depending on the complexity of the agency, this process may take more time.

