



INFORMATION
SERVICES

Fiscal
Year **20** Business
21 Plan

WAKE COUNTY
NORTH CAROLINA



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THE ORGANIZATION

The Wake County Information Services (IS) Department serves the public by providing innovative, reliable, and responsible technology solutions. The department is the primary technology provider for County departments. IS operates centrally managed operations and administration for enterprise, public safety, and mission-critical systems, desktop and mobile services, network and telephone services, software development and management, and technical support and consultation to County departments and business partners. Additionally, IS provides leadership in the areas of business process re-engineering and works with the County Manager's Office to develop long-term, business-focused technology strategies.

Our Vision

We strive to be recognized and valued for collaboration and leadership in the delivery of citizen-centric solutions.

Our Mission

We serve our citizens by providing innovative, reliable, and responsible technology solutions.

Our Values

Our thinking and actions are guided by six values. These values are in all staff work plans and annual performance evaluation and, consequently, are tightly woven into the department's DNA.

- **Leadership:** We demonstrate, through communications and actions, our commitment to success.
- **Innovation:** We value and encourage creative problem solving and the implementation of new solutions.
- **Collaboration:** We recognize the value of partnerships and seek participatory solutions whenever possible.
- **Reliability:** We build dependable products and services that our customers and citizens can rely on to accomplish their goals.
- **Agility:** The solutions we create, and the process by which we create them, are flexible and are adaptable to change.
- **Customer Satisfaction:** We go above and beyond all customer expectations in the delivery of services and products.

Our Goals

The strategic goals and initiatives of the Board of Commissioners, the business plans of County departments, and the IS Department's core goals provide the business drivers that shape and guide the work of the department.

Each goal is crucial and interconnected. All must remain a constant guide for the organization to ensure the department is delivering the best services and products available to all customers. Thus, all IS initiatives are connected to one or more of these goals, and these goals are used to formally prioritize projects and tasks.

- **Foundation:** Provide, maintain, update, and expand technical infrastructure to create a foundation for the County's business operations;
- **Collaboration:** Collaborate with customers to design and implement effective and sustainable solutions in support of business needs;
- **Re-Engineering:** Identify and implement re-engineering efforts that will reduce costs for internal operations and expenses incurred by County departments; and
- **Service:** Improve access to County information and services.



Programs and Services

IS employees and the services provided are organized into seven programs, illustrated in Table 1. Measures of success for each program and service are provided in the Targeted Outcomes section of this document. Detailed definitions of each program and service are provided in the Appendix.

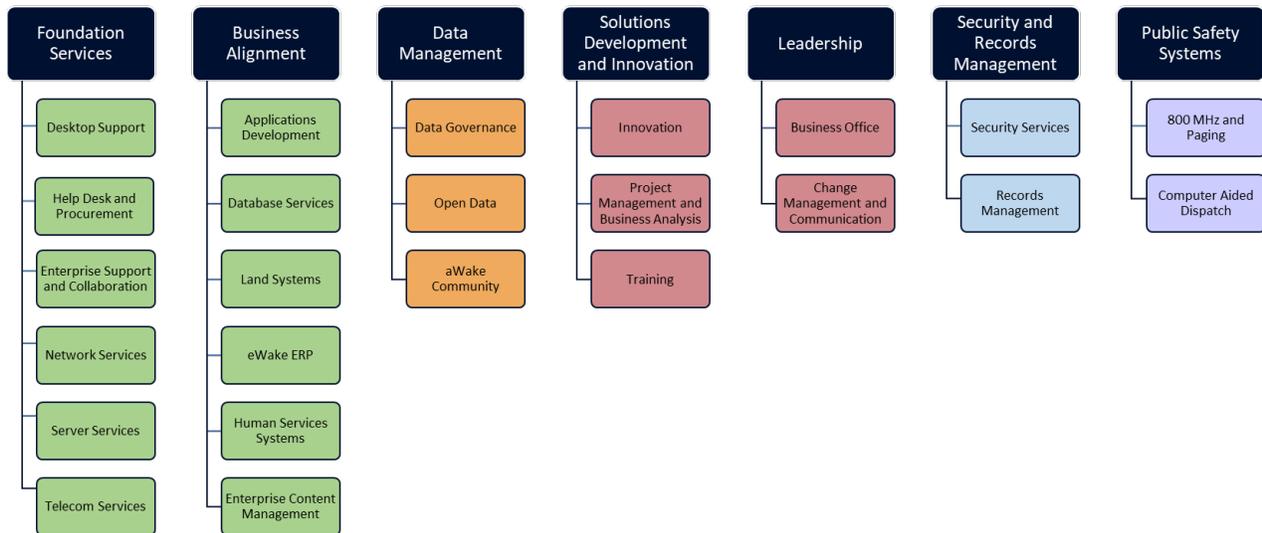


Table 1.

Enterprise Data Management was added to the program catalog in 2019 in conjunction with the creation of a Chief Data Officer (CDO) position. The CDO is leading the County’s development of a data management strategy to foster a data-driven culture and build intelligence essential for a digital enterprise.

Department Recognition

Wake County is consistently recognized as an innovative, nationwide technology leader among large counties. In 2020, Wake County ranked second place in the [Digital Counties Survey](#), an annual competition sponsored by the National Association of Counties and the Center for Digital Government. The award recognizes counties across the U.S. for their use of technology to improve government services, encourage collaboration, and enhance cybersecurity.



| Year | Digital Counties Survey Award | Population Category |
|------|-------------------------------|---------------------|
| 2020 | 2 nd Place | 1 million or more |
| 2019 | 5 th Place | 1 million or more |
| 2018 | 2 nd Place | 1 million or more |
| 2017 | 3 rd Place | 1 million or more |
| 2016 | 1 st Place | 1 million or more |
| 2015 | 4 th Place | 500,000 – 999,999 |
| 2014 | 8 th Place | 500,000 – 999,999 |
| 2013 | 8 th Place | 500,000 – 999,999 |
| 2012 | 10 th Place | 500,000 – 999,999 |

The award announcement cites achievements such as the enterprise data management program, Incident Risk Management Core Team, cybersecurity training for employees, and COVID-19 response efforts. The County has placed in the top five since entering the population category of one million or more.

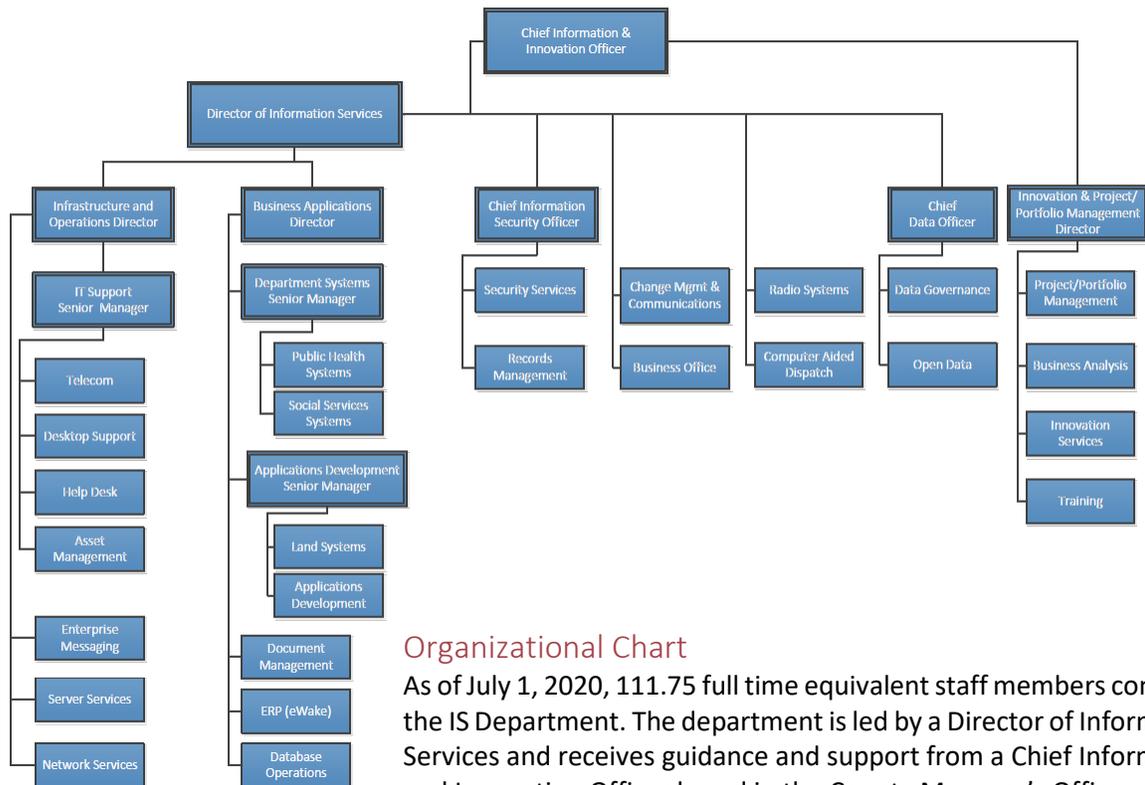
Table 2.

IT Staffing in the Research Triangle

The Raleigh area continues to be ranked as one of the best places to work in the IT sector in the nation. In December 2019, Raleigh was ranked as the #2 "tech town" in the U.S., according to a new report by nonprofit tech trade association CompTIA. With massive tech employers like SAS, RedHat, IBM, Lenovo and Citrix next door, the County has to be creative and earnest in its recruitment strategies to attract and retain highly competent staff.

Having just implemented a new countywide classification and compensation structure, the County is better prepared to recruit IT staff by offering salaries that are directly in line with the private sector for key positions. The new structure makes County IT job titles consistent with private industry, creates new pathways for advancement within the IT department by adding senior levels to existing positions, and provides updated position descriptions. A successful market rate survey positively impacts IT pay bands which has greatly assisted with attracting IT talent. Partnerships with HR and external staffing agencies also aid in the hiring process.

Lastly, IS places significant focus on staff retention, promoting an excellent work-life balance, many training opportunities, tuition reimbursement, certification support, and a highly collaborative, fast-paced environment where people are encouraged to think outside the box. IS offers flexible schedules, telecommuting, and plenty of opportunities for career development and growth within the organization. The website countyhealthrankings.com has named Wake County the healthiest county in North Carolina for the past five years. This, coupled with a recently renovated workspace that includes modern upfits such as dedicated collaboration areas and hoteling capabilities for the County's increasingly mobile workforce, has created an environment that allows staff to be more creative and enjoy coming to work every day.



Organizational Chart

As of July 1, 2020, 111.75 full time equivalent staff members comprise the IS Department. The department is led by a Director of Information Services and receives guidance and support from a Chief Information and Innovation Officer based in the County Manager's Office.

Table 3.



Staffing Growth

IS grew from 108.75 to 115.75 Full Time Equivalent (FTE) positions in FY19. The department's FY21 budget request in January 2020 included requests for four new positions. Mandatory budget cuts across the County due to the COVID-19 pandemic required IS to eliminate 4 FTE positions, reducing the FY21 staffing count to 111.75. Table 4 displays the fluctuations in staffing across the last 10 years.

14%
Staffing Growth
across last five years

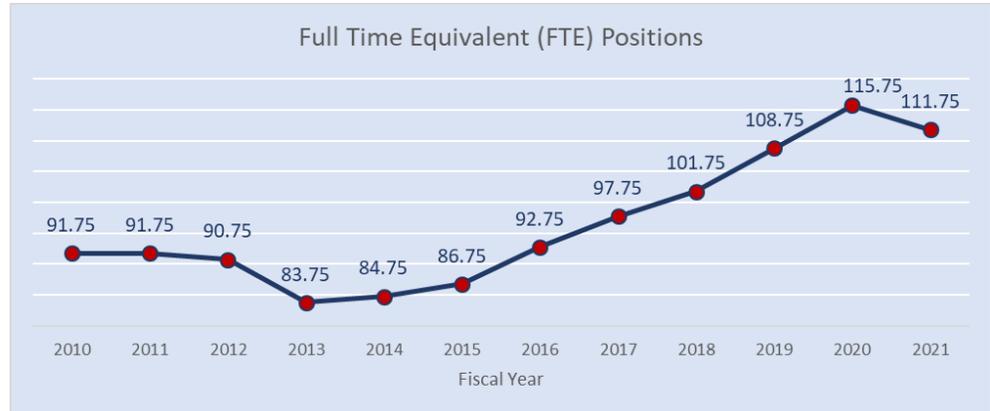


Table 4.

Nearly 78% of IS employees are dedicated to the Foundation Services and Business Alignment programs. Table 5 shows the division of staff across services, with Data Management and Public Safety Systems employees grouped by Program due to size.

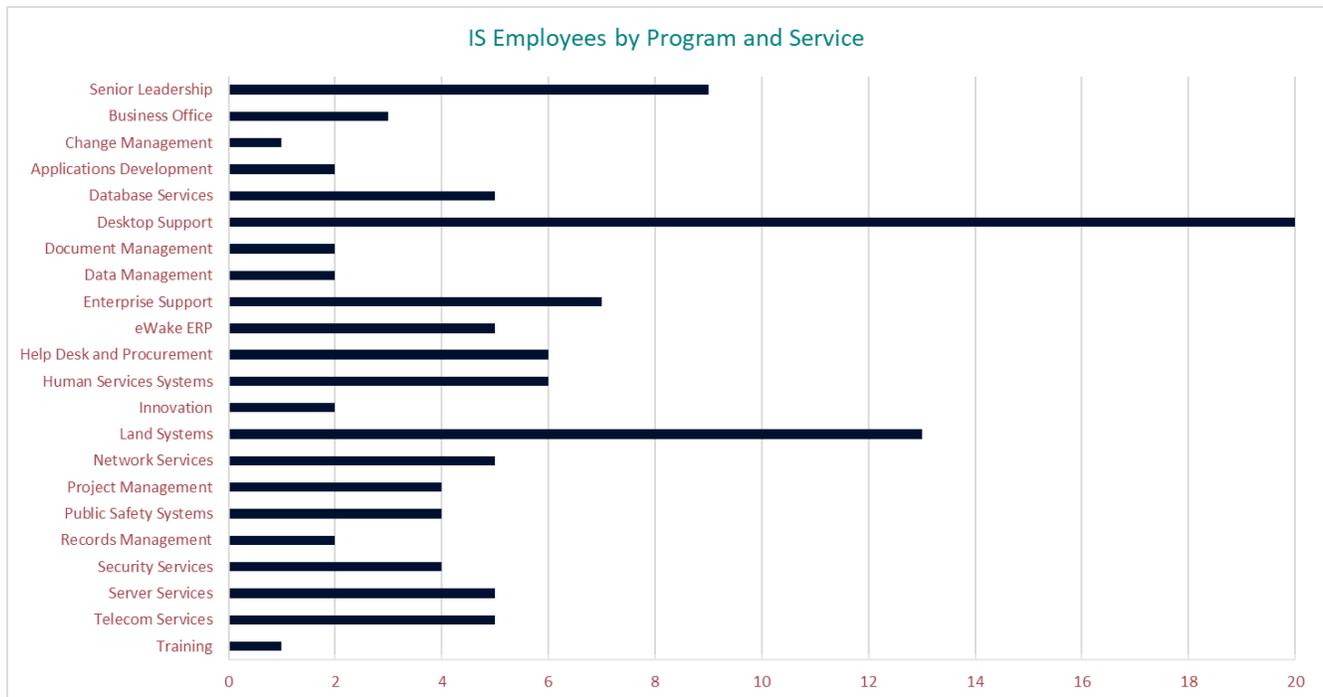


Table 5.



Decentralized Technical Services Units

The County has technical service units and staff across the County that operate outside the direct management of IS. These units support the Libraries, Geographic Information Services, General Services Administration, Register of Deeds, Board of Elections, Finance, Budget, Human Resources, and Sheriff's Office. In addition, Computer System Administrator staff in Emergency Medical Services, City-County Bureau of Identification, and Environmental Services support the applications and technical environments of their respective departments. While these staff are decentralized, they collaborate with IS on technology projects and utilize the consolidated technical infrastructure in the County's data centers, including enterprise services such as email, networking, file and print services, and security services. They utilize the enterprise project and application portfolio management tool and participate with IS staff in project review meetings, resulting in increased project success.

The Director of Information Services has oversight responsibilities for information systems and services throughout the County and consults with departments to ensure the services and systems are effectively supporting their business goals and needs. The Director and IS staff work collaboratively with departments by providing technical consultation and backup as required. Service Level Agreements are negotiated to manage relationships with larger departments that have more complex technology support needs.

Staffing Priorities

A new classification and compensation structure was implemented across the County in FY20. This new structure better aligns IS positions with positions in the private sector, provides more flexible and specific position descriptions, and allows for salary growth that is competitive in the Raleigh job market. Looking forward to FY21, IS has identified three priorities for improving employee recruitment and retention.

1. Develop internship, apprenticeship, and scholarship opportunities through the WakeWorks partnership with local community colleges.
2. Make further investments in employee training, collaboration, and support, including lunch-n-learn sessions, meet-ups, online and instructor-led IT classes, cybersecurity training, and employee focus groups to aid in the redesign of the enterprise applications.
3. Implement a new ERP-integrated system for conducting employee performance evaluations and a succession planning module which will help the County identify and develop new leaders who can replace existing staff when they leave or retire.



TARGETED OUTCOMES

Service Based Outcome Targets

The Wake County Manager's Office and Budget and Management Services hold departments accountable for developing annual strategic plans based on targeted service outcomes. For each service provided, departments are required to identify outcomes planned in the upcoming 3-5 years. Emphasis is placed on identifying tangible measures of progress and using data-driven strategies to address gaps. Outcomes and associated strategies intended to change the current state of a performance measure are balanced and prioritized against Board Goals to ensure alignment. With the aid of the County's Strategic Performance Director, IS Leadership identified five overarching service areas with targeted outcomes and performance measures for each.

These targeted outcomes will steer and structure initiatives for future fiscal years. This Business Plan outlines initiatives toward each outcome, the challenges they present, and IS plans to overcome those challenges with new strategies and resources over a multi-year view.

| | |
|--|---|
| <p>1. Provide modern, resilient, and easy to use technology platforms.</p> |  |
| <ul style="list-style-type: none"> ▪ Dependable, modern, and accessible applications ▪ Computer equipment and network resources that meet business needs ▪ Office 365 applications that benefit County operations ▪ Flexible and feature-rich telephony platforms | |
| <p>2. Facilitate data driven decisions based on timely, reliable, and accurate data.</p> |  |
| <ul style="list-style-type: none"> ▪ Enterprise data management governance practices that support data driven decision making ▪ Open data portal that supports public transparency and data storytelling | |
| <p>3. Provide consulting, training, and change management services.</p> |  |
| <ol style="list-style-type: none"> 1. Process and technology improvements that result from idea explorations and business issue evaluation 2. Comprehensive portfolio of projects and applications that ensures productivity, business continuity, and service delivery 3. Well-trained and agile workforce that embraces organizational change | |
| <p>4. Protect the integrity, confidentiality, and availability of the County's information assets.</p> |  |
| <ul style="list-style-type: none"> ▪ Compliant management of critical business records ▪ Security-aware workforce ▪ Reliable continuity and incident response ▪ Optimized security operations | |
| <p>5. Provision and maintain public safety platforms in support of first responders and citizens.</p> |  |
| <ul style="list-style-type: none"> ▪ Radio system call capacity, clarity, and coverage that support emergency communications requirements. ▪ Computer-aided dispatch platform that promotes agency interoperability and supports Next Gen 911 operations | |

Table 6.



Performance Measures

IS measures its pursuit of the targeted outcomes through performance measures. Currently IS maintains 20 key performance measures. The latest data on the measures can be viewed at

<http://www.wakegov.com/budget/fy21/Documents/FY21%20Adopted%20Budget%20Book.pdf>

In December 2018, the County hired its first Strategic Performance Director to drive the County's strategic performance directive. His primary objectives are:

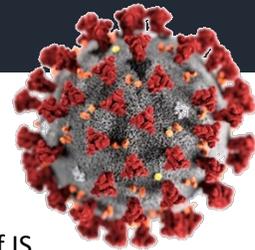
- Evaluating interactive data entry and modelling products preparing for a data lake and warehouse. The evaluation is focused on compatibility with multiple data visualization systems and end-user experiences to encourage organization-wide adoption of data collection best practices.
- Establishing and maintaining a distributed performance management system, including a shared lexicon, structure, processes and procedures, and tools for use across the entire organization. The system will be accessible to employees through an internal website (the WIRE).
- Utilizing project management software to manage and regularly review prioritized board initiatives to overcome hurdles, foster collaboration with the Innovation Office and between departments, and provide senior leadership with accessible information to respond effectively to elected officials.
- Guiding the development of automated enterprise-level dashboards (public and internal) and associated performance reports and outputs.
- Recognizing the strong link between data and effective performance business metrics, the County Manager placed this position under the leadership of the Deputy County Manager and Chief Information & Innovation Officer.

IS will continue to identify new and creative ways to measure performance under the new program.



YEAR IN REVIEW

FY 2020



Impacts of the COVID-19 Pandemic

The COVID-19 pandemic and Wake County's response efforts became the primary focus of the IS Department beginning in February 2020. The response forced reprioritization of IS projects, realignment of staff duties, and forfeit of operating and capital budget funds. The budgetary impacts are detailed in the Financial Report section of this document.

Five priorities and policies have guided the IS COVID-19 response efforts. The immediate IS priority was to equip and support the County's Emergency Operations Center (EOC). IS set up IT hardware and equipment and relocated it as the EOC evolved and grew to staffing levels of 100+ employees. IS provides daily IT support to the EOC. IT Technicians are available during all EOC operating hours, and IS provides 24/7 on-call support. One member of the department's Leadership Team supports the EOC each day to provide senior level guidance, assist with urgent technology procurements, and coordinate development of automated solutions for response support.

The next priority is to ensure 2,500+ employees have everything they need to work remotely, including equipment, network access, telecommunications tools, technical support, and training on online meeting platforms. These employees have been working remotely since the County *Work From Home* order was issued March 13. IS has maintained dedication to information security by not wavering on County security policies. IS invested in additional VPN licenses to ensure County information is safeguarded while employees work outside the secured network. IS has enforced cybersecurity training mandates keep employees as vigilant about security while working remotely as they are when in the office.

IS has prioritized COVID-19 response efforts among the department's employees. Nonessential department tasks have been paused, and project timelines have been extended. IS employees have been reassigned as needed to work in the EOC or otherwise support response efforts.

The County issued new policies to compensate employees who are working 12-hour EOC shifts and employees whose job duties prevent them from telecommuting. Teams within the IS Department have also maintained or increased their on-call services in order to provide 24/7 technical services to the County Manager's Office and EOC.

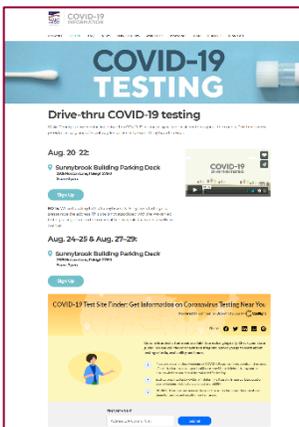
COVID Achievements

Wake County mounted an immense and well-coordinated response to the COVID-19 pandemic. County leadership took swift action in early March to build a comprehensive response plan. IS has played a large role in the response.

- IS rapidly stood up technology for the Emergency Operations Center (EOC). Within days the needs of the EOC grew to the point that IS had to relocate and expand it to accommodate unprecedented staffing required (100+ employees). IS configured numerous telephone routing systems and established two public call centers that have received more than 12,000 calls.



- IS worked to ensure 2,500+ County employees are able to work remotely. IS doubled the number of Virtual Private Network licenses, issued 50+ mi-fi devices and 800+ mobility apps, and configured 180 loaner laptops. IS is providing technical support at a rate 70% higher than the same period last year.
- IS accelerated training on the County's new collaboration system that provides chat, voice and video conferencing, and team communication tools. The system went live in mid-January, so most employees had little experience with it. Use of the system has increased by more than 7,000% since March 1.
- IS built a robust COVID-19 public information website: <https://covid19.wakegov.com/>. The site features a near-time data dashboard, interactive timeline, and a host of citizen resources viewable in 11 languages. IS also developed a COVID-19 resource page for employees on the County's intranet site.
- IS acted swiftly to provide County Commissioners with the ability to conduct live virtual Board meetings, with Board members and staff participating from their homes and a portal for public input. Meetings are broadcast, livestreamed, recorded, and archived just like in-person meetings. Live virtual meeting capability has since been expanded to the County's Planning Board and Fire Commission.
- IS quickly implemented telehealth services for Human Services health clinics. Nearly 3,000 telehealth visits were conducted between March and May.



- IS developed a custom application that provides a web-based form for citizens to register for COVID-19 testing at County-operated testing sites. The form provides data for lab specimens as well as information required for demographic testing reports to ensure all populations are being reached.
- Wake IS quickly stood up a web-based form, and document workflow/retention application for citizens to apply for utility assistance. A mobile friendly version makes the application easily available for citizens. <https://covid19.wakegov.com/wakehelps/>



- IS helped EOC leaders research, select, and implement a cloud-based system for scheduling EOC work shifts.
- IS developed a custom application that provides EOC staff with documentation and COVID-19 assessment management for cases. The application captures more than 200 data points on patient symptoms and interactions. It went live within two weeks of conception and has provided the EOC with better case management than 3rd party alternatives.
- IS developed a custom application that manages data and financial assistance for local families living in hotels who have experienced income loss due to COVID-19.
- IS quickly partnered with County business units and vendor partner to stand up a method of secure document sharing for clients in the Social Services and Child Welfare divisions. This sharing allows document requests and responses to flow securely, thereby completing cases for benefits without in-person visits or document drop offs.

Throughout the response efforts, IS has reviewed its actions and documented lessons learned. The pandemic has identified areas for future improvement and growth.

Technical Achievements

IS undertook many new technology initiatives in FY20 beyond the COVID-19 response efforts. Table 7 lists the department’s major accomplishments in FY20, and descriptions of each are provided below.

| | |
|---|--|
|  Provide modern, resilient, and easy to use technology platforms. <ul style="list-style-type: none"> • Tools to Improve Public Access to the Board of Commissioners • Translation and Interpretation Services • Microsoft Licensing and Financing • Platform Refreshes • Be Well Informed Project • Planning and Permitting System |  Provide consulting, training, and change management services. <ul style="list-style-type: none"> • Human Centered Design in ERP Upgrade • Disruptive Technology Reviews and Experiments • Automation Assistance |
|  Facilitate data driven decisions based on timely, reliable, and accurate data. <ul style="list-style-type: none"> • NC Regional Water Level Monitoring and Data Sharing Pilot • GIS Portal • Analytics at Wake Community of Practice |  Protect the integrity, confidentiality, and availability of the County’s information assets. <ul style="list-style-type: none"> • Employee Cybersecurity Awareness • Cybersecurity Assessment |
|  Provision and maintain public safety platforms in support of first responders and citizens. <ul style="list-style-type: none"> • Computer Aided Dispatch Platform | |

Table 7.

Outcome 1: Provide modern, resilient, and easy to use technology platforms.

Tools to Improve Public Access to the Board of Commissioners

IS introduced three initiatives in FY20 to support Board of Commissioners (BOC) Objective GG2: Improve effectiveness, efficiency, transparency, and responsiveness through innovation and technology. These accomplishments utilize technology to make the BOC more accessible to citizens.

The public has been able to view regular BOC meetings via a live stream on the County website, but BOC work sessions could not be viewed online because they are conducted in a room that was not equipped with audio/visual equipment. Earlier this year, IS in conjunction with Wake County General Services installed cameras and microphones in the work session room and integrated the devices into the current video streaming platform. BOC work sessions are now live-streamed and published to the Wake County website. This project is in direct support of BOC Initiative GG2.1: Live stream, record, archive and post Board of Commissioner work sessions.





Second, IS developed a new web application that allows the public to sign up electronically to speak during public hearings and Board meetings. The website is mobile friendly and can be accessed from anywhere, making it a more efficient alternative to waiting in line outside the boardroom to sign up on a handwritten list. Citizens can also sign up using a kiosk installed outside the meeting room. The kiosk eliminates the need for residents to have a computer or mobile device with internet access to sign up.

Third, IS developed an electronic application process to facilitate community organization funding requests. The Budget and County Manager's offices needed a better way to solicit and review requests. Previously, applicants emailed their supporting information and documents, then staff spent considerable time vetting and compiling the information for the Board of Commissioners. IS developed an online application that provides groups with easy access to required document templates and ability to upload their completed forms and supporting documents.

wake.legistar.com/Calendar.aspx
wakegov.com/news/Lists/Posts/Post.aspx?ID=1146
fundingrequest.wakegov.com

Translation and Interpretation Services

Recent Census data reveals nearly 17% of Wake County residents speak a language other than English in the home. Wake County strives to provide citizen services to its diverse population. For years IS has provided forms and other written information in Spanish and provides telephone customer service lines for Spanish speakers. In 2020, IS launched numerous initiatives to make government more accessible to non-English speakers. IS provides a Spanish version of the County's 2020 Census website, along with Census Partner Toolkit materials in Spanish. The County's dedicated COVID-19 website can be viewed in 11 languages and provides toolkits in 11 languages to help organizations spread factual information about COVID-19. The new Wake County government website that is currently in development will also be viewable in 11 languages. The languages chosen are the largest language groups spoken in the County.

In January 2020, Wake County debuted live speech and American Sign Language video interpretation services in all health clinics run by the Human Services Department. Simple video devices provide one-touch access to video or phone calls with trained professional interpreters in 240+ languages. The service allows clinic staff to provide non-English speaking citizens with services such as medical exams, nutrition counseling, and evaluation for County and federal services. Prior to implementing on-demand translators, a patient needing translation services experienced appointment scheduling delays while a contracted translator was located and coordinated. Walk-in services for these patients were not an option. With the new technology, all clinic patients can receive scheduled or walk-in care with on demand availability of a translator. Clinic employees report the devices are easy to use and allow them to provide enhanced medical care to their patients. IS is currently working to expand the technology to visiting home nurse and child welfare services.

wakegov.com/census/Pages/tambiencontamos.aspx
covid19.wakegov.com/resources/



Microsoft Licensing and Financing

IS is responsible for ensuring that licenses for all IT components are properly maintained and upgraded to maintain proper network security. This includes several Microsoft tools that were previously maintained under a combination of Enterprise and Select licensing agreements.

Over the past six months, IS negotiated with Microsoft to consolidate these agreements into a new Enterprise agreement. Including the addition of Windows Enterprise licensing which allows the County to maintain current versions of the Windows Operating System. The new agreement consolidates all Microsoft licensing into a single agreement and aligns renewal dates. To facilitate this, the first term of the agreement needed to be for a 15-month period. To accommodate the increased cost of the 15-month term, IS negotiated a no-interest Installment Payment Plan to spread the cost over FY20 and FY21. The payments fit within the existing IS operating budget for Microsoft licensing. The proposed agreement utilizes an aggressively-competed, pre-negotiated State of North Carolina (NCDIT) statewide contract which provides pricing at the highest discount level offered by Microsoft. IS also negotiated an additional 18% discount off NCDIT discount level. In addition, working with County departments, IS reduced license counts and levels to provide the best tools to meet users' needs, while avoiding licensing "overkill." IS estimates this process saves the County approximately \$140K annually. Under the new agreement, for approximately \$1 per day per employee, the organization benefits from tightly connected tools that meet all County security requirements.

Platform Refreshes

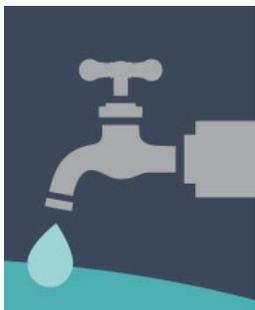
The Department of IS business plan identifies five categories of services IS provides to the County. The first and highest priority of IS services is to "Provide modern, resilient, and easy to use technology platforms." In support of this service, IS refreshed multiple large platforms over the last year. IS replaced or expanded the County's primary network storage arrays, data backup platform, network access control platform, and network core routers/switches and firewalls.

Storage growth outpaced prior forecasts, so IS added capacity to the storage arrays. IS also extended support on the existing storage which allowed IS to keep using it in addition to new storage to increase capacity. The existing backup platform was reaching capacity. IS replaced it with a new platform that also includes improved cyber recovery technology. The network core was replaced as part of a standard replacement schedule. Firewalls were upgraded in response to recent internet bandwidth increase. IS also increased internet bandwidth, which was meant to help with off-site data backup, but IS was able to take advantage of the increased bandwidth to handle the significant increase in VPN usage that resulted from 2,500+ employees working from home due to COVID. The County's internet usage has also skyrocketed in recent years due to an increase in use of cloud-based applications.

Keeping these platforms current is essential to resiliency and modernization efforts. The replacements are planned and budgeted as part of the County's seven-year Capital Improvement Plan.



Bell Well Informed Project



In summer 2019, Wake County kicked off an educational outreach campaign to inform residents in the eastern half of the County about unsafe levels of uranium, radon and radium found in privately-owned well water. One in five wells in the area could be affected. Naturally occurring in the underground rock, these elements may cause significant health problems. In the short term, that may include kidney toxicity. In the long term, these contaminants may increase the risk of certain cancers. Outreach efforts included a notification mailing to more than 19,000 private well owners and users and community meetings that provided face-to-face consultations with County groundwater experts.

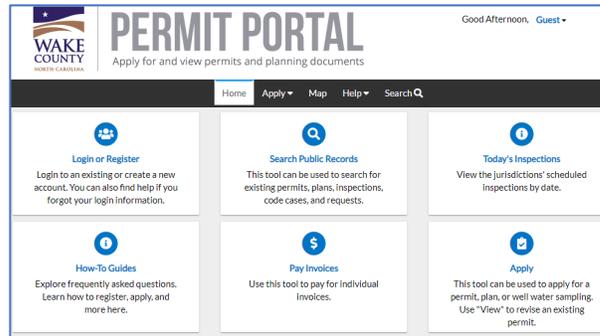
IS provided significant support to the Environmental Services Department for this project. IS created an informational website, wakegov.com/wells, and set up a phone number to connect residents with the information they need to make decisions regarding their well water.

IS partnered with the EPA to provide citizens an online portal to interpret their well testing results. The portal contains customized Wake County data and helps users determine which treatment options, if any, are recommended for their system. The portal has received more than 1,400 page views since it was launched one year ago.

wakegov.com/wells
wakegov.com/water/wells/Pages/bewellinformed.aspx

Planning and Permitting System

In FY20, IS embarked on a project to upgrade the County's planning and permitting application. In partnership with the vendor and departments that utilize the system (Planning, Fire Services, Permitting and Inspections, and Environmental Services), many system improvements were made. In the Customer Portal, customers now have dashboard views of their permits and enhanced browser options, and other functions making applying for permits efficient and timely. In the e-Review module, users enjoy enhanced electronic processing. The project's timeline was delayed due to the County's COVID-19 response efforts but was completed in May 2020.



Outcome 2: Facilitate data driven decisions based on timely, reliable, and accurate data.

NC Regional Water Level Monitoring and Data Sharing Pilot

In 2019, several public and private partners worked together to create vendor-agnostic architecture guidelines, common stormwater data sets, and recommendations for responsible use of their data to optimize operational functions, drive economic growth, and improve quality of life for citizens. Eight North Carolina agencies (Cary, Holly Springs, Morrisville, Raleigh, Wilson, Wake County, North Carolina Emergency Management, and North Carolina Dept. of Transportation) piloted a regional program to install technology and share data related to stormwater monitoring and management. Private partners included:

- Oracle
- Cisco
- RIoT (Raleigh Internet of Things)
- Green Stream Technologies
- SAS

Stormwater sensor data is owned, secured and controlled by the agency that installs and maintains the sensors. Each agency determines how they will visualize, store, and analyze their data, which is shared by each agency. Other agencies can subscribe to the services as needed. The partners felt that a regional water level monitoring approach was the best because heavy rain events impact all communities; their effects are not contained within political boundaries, and these communities were in the process of exploring and installing technology that provides real-time data associated with these events. Outcomes achieved include:

- Improved regional and statewide situational awareness
- Reduced property loss, improved safety and mobility
- More proactive response, reducing the time required to respond to stormwater emergencies
- Enhanced data-driven mitigation and infrastructure decisions
- Improved prediction capability
- Shared resources and a coordinated approach
- Improved redundancy through a regional approach allows agencies to utilize others' data if their data is not available

GIS Portal

Wake County Geographic Information Services provisioned a GIS Portal solution from the mapping vendor that provides maps, dashboards and analytical capabilities to departments from a secure implementation behind the County firewall. In February 2019, Wake Emergency Medical Services moved quickly to leverage the platform to create dashboards, maps, and visualizations of the spatial pattern of Narcan administration across the County in order to prioritize operations and inform decision making to address this public health and public safety issue. The new Portal Content Management System provides capabilities that encourage collaboration within the EMS Department, and with Public Health and the County Manager's Office. The internally hosted solution provides security for sensitive data, but also is compatible with the public-facing ArcGIS Online platform to facilitate presentations of aggregated information to collaborate with external partners such as hospitals and not-for-profit organizations.

Since implementing the tool, EMS staff have created more than 125 data layers that are used in two dashboards and four-story map visualizations to present sensitive data internally. Additionally, EMS staff have presented the work done in the Portal at several conferences and venues, including the 2019 North Carolina GIS Conference and GIS Day 2020.



Analytics at Wake Peer Group

Objective GG4 of the Wake County Board of Commissioners 2019 Great Government Goal is to "Utilize data-driven decision-making processes and methods wherever possible." Initiative GG4.1 of this objective is to "Build the resources to assist departments with obtaining and utilizing effective data analytics to solve business objectives and reach departmental goals." Wake County launched its efforts toward this goal in mid-2019 with the creation and hiring of a Chief Data Officer (CDO) position. Under the CDO's leadership, the County is implementing an Enterprise Data Management (EDM) Program that allows high quality data to play a role in County decision making at all levels.

The primary first-year accomplishment of the EDM Program is the creation of "Analytics at Wake" (aWake), a peer group of employees responsible for managing data sets. aWake provides mentoring and support to its members and facilitates sharing of knowledge, ideas, and data sets. aWake has three core components: a collaboration site, in-person training, and individualized support.

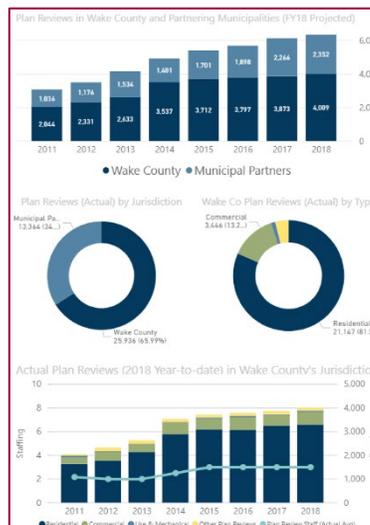
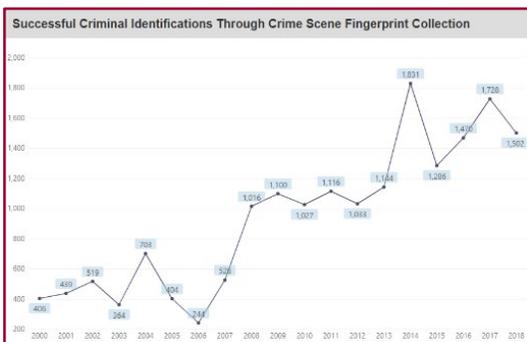


The collaboration site provides an online discussion group and hosts a digital library for analytics news and best practices. Employees can view online tutorials and a knowledge database. As it grows, the collaboration site will house an enterprise data catalog, image library, and governance documentation.

The training component focuses on data literacy, technical skills, and best practices for analytic development. In September 2019, IS launched a curriculum of five courses completed over a one-month period. To date, 40 employees have completed the curriculum.

The individualized support component is comprised of consulting services and monthly office hours. Employees can request consulting services on any data project. During scheduled office hours, data analysts from across the County come together to discuss a project they are looking to start or get help with an issue.

<http://www.wakegov.com/cs/Pages/pdimeasures.aspx>
<http://www.wakegov.com/transparency/operations>
[covid19.wakegov.com/](http://www.wakegov.com/covid19.wakegov.com/)



Wake County Planning, Development, and Inspections (PDI)

The following key performance measures summarize current fiscal year projections (FY18: July 2017 to June 2018) unless noted as a year-to-date Actual. Select the icon next to each measure for more information and in-depth visualizations including historical trends.

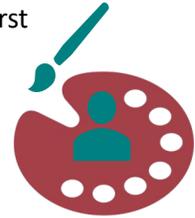
Based on data collected through 6/30/2018

- Permits in County Jurisdiction**
6,982
Excludes permits in partnering municipalities
- Permitting Workload**
3.78
Indexed: shown as residential permits per staff per day
- Plan Reviews in County Jurisdiction**
4,009
Excludes plan reviews in partnering municipalities
- Plan Review Workload**
8.22
Indexed: shown as residential plan reviews per staff per day
- No. of Inspections (Area Team)**
63,380
Includes inspections in partnering municipalities
- Inspector Workload (Area Team)**
15.51
Indexed: shown as building inspections per staff per day

Outcome 3: Provide consulting, training, and change management.

Human Centered Design in ERP Upgrade

Wake County is in the process of upgrading its enterprise resource planning (ERP) software. The upgrade includes a completely redesigned user interface that will be significantly different from what employees use today. Not only was Wake County selected by the vendor to be the first customer to implement the upgraded software, Wake employees were given the unique opportunity to provide significant input into how the new user interface will look and even function to ensure the process was thoughtful and deliberate, the County teamed with the vendor's Human Centered Design (HCD) experts. HCD considers the human perspective in all steps of the problem-solving process, including observing the problem within context, brainstorming, conceptualizing, developing, and implementing a solution.

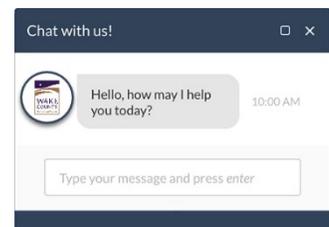


Weeks of interviews and business process re-engineering sessions between Wake users and the HCD team culminated in the creation of a Vision Book – a summary of findings from these collaborative, strategic engagements to explore and craft a vision for the future. Using design thinking methodologies, the County identified existing user pain points with the current software, and with a technology agnostic mindset, explored and designed an optimized future state for many of the County's business processes. In the Vision Book, major themes were brought to the forefront for areas of opportunity and capturing what Wake users see as the best possible future state for more than 100 business processes and the requirements they would dictate around them. Having experienced the commercial world of elegantly designed software, users know that well-designed, easy-to-use software equates to greater efficiency, less training and delighted employees who can spend time using their skill sets to focus on strategic tasks and individual growth.

Disruptive Technology Reviews and Experiments

The Innovation Team continues exploration of new technologies. One first project was determining the best way to conduct drone flights. The team researched both in-house and drones-as-a-service models. Drones-as-a service allows for programs that do not require a full-time drone program to quickly request drone services through a convenience contract and have the results delivered to them. After negotiating with a local drone service company, the decision was made to develop drone capabilities internally. This option has proven to be more responsive and cost-effective. With the assistance of a licensed drone pilot in the Communications Office, an experimental flight was conducted to inspect open space property for illegal use for the County's Parks, Recreation, and Open Space Department. A second flight is planned in coordination with the Soil and Water Conservation District to document before and after photographs of remediation efforts.

Another project is exploration of Smart Technology such as artificial intelligence chat services and voice-activated virtual assistants. The project identified the foundational components that are required. Additional research is planned in conjunction with the WakeGOV.com website redesign.



Lastly, Wake County has been wondering for some time if 3D Printing would be beneficial to County operations. Research of 3D printing services provided a full understanding of how the technology works, possible uses and an experimental printing job with an outsourced vendor. The lesson learned is that while 3D printing can be useful, it is not a service the County should embark on with dedicated resources. Instead, IS identified external resources that can handle on-demand 3D printing needs. This model will be 3D-as-a-Service following the Drone-as-a-Service model.

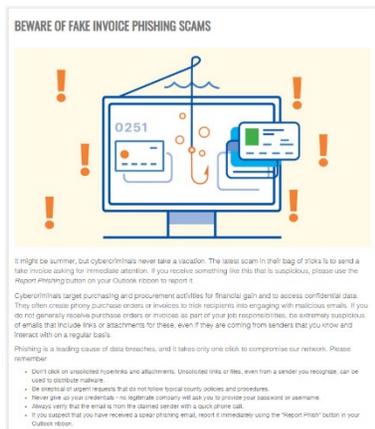
Automation Assistance

The Solution Development Team assisted the Budget and Management Services Office during the FY19 budget process by proving additional research and project assistance for departments requesting Automation CIP Funding. The team assisted on three projects including the Sheriff's Office Backfile Scanning of Concealed Handgun Permitting, Emergency Medical Services Request Tracking System, and the WakeGOV website replacement project. The goal of these efforts was to provide the departments with assistance in providing additional information regarding their specific requests to the Budget Office so that funding could be appropriately assigned for project implementation.

Outcome 4: Protect the integrity, confidentiality, and availability of the County's information assets.

Employee Cybersecurity Awareness

From January 2019 through March 2020, Wake County experienced a 65% improvement in email phishing susceptibility and a 33% increase in on-time completion of security awareness training. These improvements in employee security awareness are due to the County's revamped training and compliance program. IS success in this area is due in large part to the unilateral support and buy-in IS has received from County leadership, from County Commissioners to Department Directors.



In October 2018, IS changed the content and frequency of security training, and over the next several months, the Chief Information Security Officer presented the updated program at more than 10 leadership or department meetings. In combination with timely employee news articles about actual cyber-security threats, employees are required to complete quarterly security training, which is offered online and in person to accommodate different learning preferences. Training compliance is tracked, and reminders sent to employees who fail to complete the training by deadline. If after a grace period, they still do not complete the training, the employee's network access is revoked until they complete it. Department Directors receive status reports and have been very supportive of the initiative.



IS also implemented a phishing simulation tool that allows employees to learn valuable lessons in a safe environment. Simulated phishing emails are periodically sent to employees and often mimic timely, real-world scams. Those who recognize it as a phishing attempt and report it to the security team see a pop-up notice that it was a simulation and thanking them for their diligence. Those who perform an unsafe action within the simulation are routed to educational material.

Cybersecurity Assessment

In October 2019, Wake County began working with a forensic accounting and business fraud consulting firm to complete an assessment of sensitive records in order to quantify the number of sensitive records the County is responsible for, determine overall cybersecurity risk, and ensure IS provides adequate protection. This assessment included review of all business processes and applications used to store, transmit, or process sensitive information stored in County applications and those hosted by third parties and the state. Together with the consulting firm, IS developed a template for collecting the initial information from department subject matter experts and application owners.

Application owners were provided with a questionnaire template that was used to collect details about applications and the records they contain. This questionnaire was used to aid the discussion with the consultants and County security and records management staff. Review sessions were performed with application owners and subject matter experts for every application and service that is used by the County. After multiple interview sessions and discussions, the information collected was consolidated and the IS application inventory was updated to accommodate the level of detail collected. IS can now quickly determine how many records are managed by each application and the legal and regulatory requirements.

Outcome 5: Provision and maintain public safety platforms in support of first responders and citizens.

Computer Aided Dispatch Platform

In May of 2019, Wake County partnered with the City of Raleigh to complete the implementation of a new Computer Aided Dispatch (CAD) platform. This platform is utilized by Raleigh-Wake County Emergency Communications Center (RWECC) to relay 911 calls to the appropriate public safety units throughout the County. The new platform provides increased situational awareness, enhanced field communications and allows greater access to data for all agencies, including web-based access and a mobile application. In FY20, the County and City implemented a CAD2CAD data exchange which connects the RWECC and Town of Cary CAD systems. The new CAD2CAD platform provides state-of-the-art interoperability and allows agencies to share unit, incident, and notification details.



Since CAD go-live, County agencies have focused on implementation of new functionality such as fast dispatch for Fire Services and auto dispatch for EMS Services. These tools improve response times, which is critical when providing emergency services. Also implemented since go-live is the CrimeView/IQ Search tool which provides enhanced reporting,

analytics and dashboard capability for first responders. Additionally, staff are investigating the implementation of RapidSOS which provides enhanced mobile caller location. The tool transforms any app or device, such as a cell phone, wearable, or connected car into a lifeline during emergencies through the RapidSOS emergency API suite. Once implemented, apps like Uber will have an embedded link which customers can press that immediately sends user data directly to 911 during emergencies.

Lastly, a new CAD mobile client is being tested that includes many enhancements. Most critical to the County is an enhanced filter capability which will allow public safety agencies like EMS, CCBI and Animal Control to view only their units on the active units screen. This capability is not present in the current version which hinders emergency operations.



STRATEGIC PLAN

FY 2021 AND BEYOND

Support of County Strategic Goals and Initiatives

Each year the Wake County Board of Commissioners (BOC) establishes strategic goals and objectives to guide the County's funding decisions, project prioritization, and resource usage. Each goal provides emphasis on key focus areas and are coupled with objectives and initiatives that are both short- and long-term in nature.

Objective GG2: Improve effectiveness, efficiency, transparency, and responsiveness through innovation and technology.

The BOC's Great Government goal is to be a fiscally responsible County government that empowers, protects and serves its citizens through a culture of respect, collaboration, and innovation. This goal has five defined objectives. Objective GG2 is to "Improve effectiveness, efficiency, transparency, and responsiveness through innovation and technology."

The IS Department, under leadership of a Chief Information and Innovation Officer, Director of Information Services, and five division directors, works diligently to align its mission and initiatives with Objective GG2. Numerous policies and procedures have been recently enacted or updated in support of the objective. Policy areas include access to HIPAA and other sensitive data, remote access, information security awareness and training, and records management.

The Director of Information Services and the Chief Information Security Officer lead a group of County department business and technical managers called the Information Risk Management Core Team (IRMCT). Membership is comprised of the County's security, privacy, compliance, and business continuity managers. The IRMCT unites the technical and business perspectives into a single effort and creates consistency and predictability in how information should be handled and how risks should be addressed.

IS also continues to be a leader in government innovation. The Wake County Office of Innovation was established in 2017. This office pioneers the Board's innovation objective through exploration of disruptive technology, promotion of digital literacy, and engagement with the civic technology community to enhance the relationship between government and the people it serves. It also provides CREATEspace innovation labs that provide a place for employees to create, collaborate, and experiment.

Objective GG4: Utilize data-driven decision-making processes and methods wherever possible.

Objective GG4 of the Board of Commissioners (BoC) Great Government goal is to utilize data-driven decision-making processes and methods wherever possible. This objective has specified initiatives for FY20. Initiative GG4.1 is to build the resources to assist departments with obtaining and utilizing effective data analytics to solve business objectives and reach departmental goals.

IT Leadership has done significant work toward achieving this initiative. A Chief Data Officer was hired in 2019, and she is implementing an enterprise data management (EDM) program in Wake County. The EDM program has three pillars:



1. **Data Governance:** In 2019, a single software tool was selected as the County's standard for data analytics and visualization. IS will request FY22 funding to implement tools with modules for data federation, master data management, data warehousing and data virtualization. IS will convene Data Governance Councils with membership from across the County's departments. These Councils will spearhead the creation of data use and security policies.
2. **Analytics Center of Excellence:** IS has built a peer group of data analysts across the County. This "Analytics at Wake" (aWake) community provides mentoring and support to its members and facilitates sharing of knowledge, ideas, and data sets. aWake resources include a collaboration website, in-person training, and monthly office hours by IS staff. aWake provides the County with the foundation for making data-driven decisions with confidence.
3. **Open Data and Data Projects:** Detailed throughout this plan are examples of the open data and other data projects IS has initiated. The projects include an upgrade to the Wake County Open Data Portal, embarking on data exploration, creating data pipelines, and use of the Internet of Things to aid in data use and sharing.

Planned Initiatives

IS strives to identify ways to streamline processes and better serve citizens. With many exciting technology initiatives on the horizon, IS continually seeks opportunities to collaborate with peer organizations to share experiences to expand the County's role as a recognized technology leader. Upcoming initiatives include the continuation of prior year projects and launch of new projects funded in the IS FY21 budget request.

| | |
|---|--|
|  <p>Provide modern, resilient, and easy to use technology platforms.</p> <ul style="list-style-type: none"> • WakeGOV Website • ERP System • Electronic PCards • Electronic Receipts • Video Interpretation Services • Incentive Grants • Mobile Pay for Public Health Services • Tax Administration Systems |  <p>Provide consulting, training, and management services.</p> <ul style="list-style-type: none"> • Internet of Things Technologies • Blockchain and Robotic Process Automation Projects • Robotics in the ECM Platform • Change Management Projects |
|  <p>Facilitate data driven decisions based on timely, reliable, and accurate data.</p> <ul style="list-style-type: none"> • Matrix Reporting Structure • COVID-19 Information Website • Data Management Tools |  <p>Protect the integrity, confidentiality, and availability of the County's information assets.</p> <ul style="list-style-type: none"> • Cybersecurity and Risk Management Enhancements • Incident Response Program • Coordinated Cybersecurity Assessments |
|  <p>Provision and maintain public safety platforms in support of first responders and citizens.</p> <ul style="list-style-type: none"> • 800 MHz Radio System • Electronic Medical Records Technology for Detention Center • Emergency Planning and Simulation Tool | |

Table 8.

Outcome 1: Provide modern, resilient, and easy to use technology platforms.

Strategy

IS is the primary technology provider for County departments, providing centrally managed IT operations and administration of mission-critical IT platforms utilized by County departments, municipal partners and the citizens IS serves. These services are managed under the direction of the Chief Information and Innovation Officer and Director of Information Services. IS believes a solid technical foundation is a key building block required for implementing and supporting the County's business operations and citizens. To facilitate this strategy, IS continues to implement best practices for IT enabled services including ensuring services are resilient, redundant, sustainable, cost effective, and innovative. IS does not rely on a pre-defined cloud strategy. Rather, the department utilizes a best-of-breed model for determining what IT services are hosted on-premise in data centers, are hosted off-premise, or utilize a hybrid computing approach. When new IT platforms are procured or existing platforms are upgraded or replaced, IS evaluates many factors to determine the hosting strategy. Examples include cost effectiveness, security/risk, performance, workload architecture, scalability, and availability of platform technical support resources.

Planned Initiatives

WakeGOV Website

IS is currently redesigning County website, wakegov.com. The new website will be built on a more modern platform. It will be well-designed, provide a dynamically relevant and useful experience, and reflect the spirit of an organization focused on the effective and innovative delivery of services and information. The new website will go live in December 2020. The following principles are guiding the redesign efforts:

- Build a website that is designed for residents who are very diverse in background, education level, tech know-how and socioeconomic status. Create a structure that allows them to find what they are looking for easily and efficiently without having to know where it falls within the County's organizational chart.
- Ensure the website is fully responsive in look, form and functionality. It should work well on mobile phones, tablets and iPads, as well as laptop and desktop computers from all manufacturers.
- Draft content that is free from governmental jargon and easy for the layman to understand. The text should follow AP Style, and be written accurately, clearly and concisely.
- Create a design for the website that feels clean and is minimal and grey scale in nature to allow the user to focus on the content, not the wrapper. Include photos and videos where appropriate to accentuate the text, emphasize key points and enable the user to learn more about a topic.
- Ensure the website can easily highlight the County's most important news, and instantly respond to any emergent situations with facts to quell rumors among the public and the media.
- Establish consistency across different sections of the website, so the user does not have to relearn how to find information when navigating from place to place.
- Do not recreate the same website that currently exists. Be innovative and open to new ideas and tech that could really drive the effectiveness of the website and help it remain relevant for years to come.

ERP System

The eWake 4.0 upgrade is paving the way for the future of the County's Enterprise Resource Planning (ERP) system nationally. The County's ERP vendor selected Wake County to partner as the first to implement the



new 4.0 version of the application, which is built on newer technology and boasts a more modern user interface. The primary mission of the redesign is to greatly enhance the user experience and to transform business processes. Wake County was chosen by the vendor due to the strength of its team, its innovation and forward thinking, and its utilization of the full suite of products. In FY20, Wake County became the vendor's first customer to implement a Vendor Self Service portal. Work on the applications is underway and scheduled for implementation in the fall of 2020.

Electronic PCards

IS has partnered with Finance Department staff to develop an electronic process for reconciling the enterprise procurement credit cards (PCards). This application will provide a repository for PCard documentation, and monthly reconciliations against the PCard bank statements, and transaction uploads/validations to the County ERP system. The application will provide electronic document storage, automated balancing, more efficient error handling, and payment validation to eliminate duplicate payments. Deployment of the new application is anticipated to occur in late FY21.

Electronic Receipts

IS has partnered with Finance Department staff to develop an electronic receipt system for all cash and check payments received by the County. This new system will provide electronic capture, receipting, application, and balancing of the payments including field payments. When implemented, this system will provide efficiencies in staff time savings, as well as better financial audit controls and reporting. Development is underway and deployment is planned for early FY21.

Video Interpretation Services

Based on the success and popularity of video interpretation services at the County's health clinics, IS is looking to expand this technology to additional areas of County services. Plans are in place to provide the service to the Visiting Home Nurses and Child Welfare divisions.

Incentive Grants

Wake County IS has partnered with the Wake County Manager's Office, Tax Administration Director, and Finance Director to develop an electronic solution for incentive grants. The solution will provide electronic application and document submission, an electronic case file, and tracking / updates for each approved Incentive Grant.

Mobile Pay for Public Health Services

Mobile Pay is a system that will allow the County's health clinic patients to make account payments using a mobile device. A mobile pay solution should increase revenue by providing patients an easy and safe electronic method to pay for services. Mobile Pay is also expected to reduce costs associated with paper billing. Paper statements are very costly to produce and require manual processing. The Mobile pay application will automatically post payments to the patient account in the patient management platform, reducing the need for billing staff to manually post payments coming through the mail and front desk staff to take payments over the counter.



Tax Administration Systems

Computer Aided Mass Appraisal (CAMA) is Wake County’s Land Records system that is built and maintained by IS. It interfaces with the Wake County GIS, Revaluation, and Billing & Collection systems. The system is reaching end-of-life cycle support for the software version and browsers. In FY20, IS has partnered with Tax Administration staff to research whether a technical refresh or a replacement is the best fit solution. The current application is highly customized and meets Wake County business requirements, so the solution options must be carefully evaluated to ensure required functionality is not lost. The evaluation will be completed in early FY21, and a funding request will be submitted during the annual budget process.

The Revaluation system is also built and maintained by IS. IS completed the system for the FY20, and this process is currently underway. In FY21, IS will begin gathering the requirements and determining system changes and enhancements required for the next reevaluation, including mandated changes from the State. Development will begin for the new Revaluation period in FY22. Wake County property reevaluation takes place every four years.



The Wake County Tax Billing and Collection system is undergoing a system rewrite. IS has partnered with Tax Administration staff to develop the project plan. To date, IS has completed the system overview / modular identification, identified architecture for the new supplication, chosen the modern software for framework, and began the actual development work. The security module is complete, and staff are working on the tables. This application is critical to the Tax Collection Department’s ability to accurately and thoroughly bill and

collect taxes and fees. In addition to providing a new modern, highly available system, the rewrite improves security within the application. The rewrite is scheduled to be completed by October 2022.

Outcome 2: Facilitate data driven decisions based on timely, reliable, and accurate data.

Strategy

The County places a significant priority on utilizing data-driven, decision-making processes to solve business objectives and drive innovation. This is a top down strategy that is reflected in the BOC's current goals and demonstrated by the County Manager's Office allocation of a Chief Data Officer (CDO) position outside of the budget development process. The CDO, hired in May 2019, is currently implementing an Enterprise Data Management (EDM) program, including strategy, maintenance, policy, stewardship and advocating for how data can contribute to business success and improved citizen services.

Data Governance, one of the three pillars of the County's EDM program, is specifically designed to provide secure, reliable and timely data for the organization to use in data driven decision making and is a current focus of the program. For the County, this means creating enterprise datasets that have been certified for use by the organization. These datasets will be managed utilizing data federation, master data management, data



warehousing and data virtualization tools. This is a precursor to using analytics tools to visualize and analyze data sets. The final extension of this work is to provide data, visualizations and narrative to the public via the Open Data Portal in order to increase transparency. This process requires significant collaboration with County business units, particularly business unit data analysts and subject matter experts that support business unit platforms.

Outcomes expected from this work include:

- Enhanced data quality and increased confidence that data has been correctly defined, acquired and curated
- Enhanced accessibility, data is made accessible through secure and auditable channels
- Data is stored and curated once but used for multiple scenarios, people, or departments
- HIPAA & PII data is securely protected

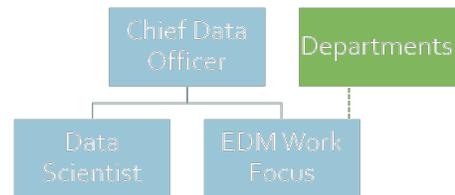
This work is well underway in several departments including Human Services, Emergency Medical Services and Planning, Permitting, and Inspections division. A fully curated permits enterprise dataset has been built from the County's planning and permitting application, and development of 50+ analytics reports managed in a dashboard were created before the pandemic affected business unit resource availability. Based on the many critical business applications present in the County, this work is expected to take several years to complete.

Planned Initiatives

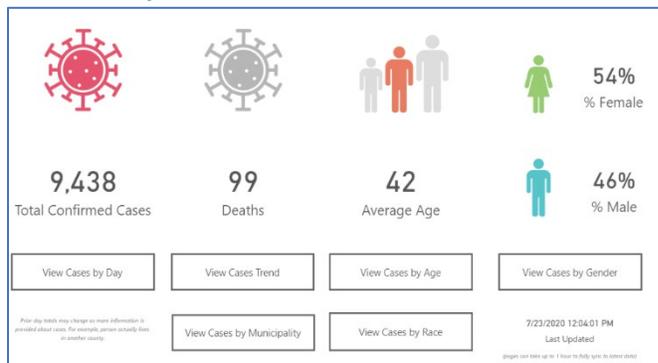
Matrix Reporting Structure

Wake County has many data analysts who report to managers within their home department. This decentralized structure makes it difficult to implement a clear and cohesive data management program. IS is evaluating realignment of the County's organizational structure to allow for matrix enterprise data management reporting. Benefits of a matrix structure include:

- Better quality of, access to, and use of data for data-driven decision making
- Alignment to strategic performance goals
- Enterprise data governance and analytics best practices
- Structured roles, defined career paths & mentoring
- Opportunity to flex role assignments based on need



COVID-19 Information Website



The County's COVID-19 response efforts will continue well into FY21. IS will continue to enhance the quality and availability of data on the COVID-19 public information portal as new data becomes available and reporting needs evolve.

wakegov.com/covid19



Data Management Tools

In effort to solve the problem of data quality and accessibility within the County across multiple entities and systems, IS is developing plans to procure and implement tools with modules for data federation, master data management, data warehousing, and data virtualization. An EDM solution would increase confidence and quality of data resulting in better data-driven decision making. For example, by creating a fully curated permits enterprise data set:

- All County users who require that data for analysis can have confidence that the data has been certified (correctly defined, acquired and curated).
- Data be made accessible through secure and auditable challenges.
- Data can be stored and curated once but used for multiple scenarios, departments, and individuals.

Outcome 3: Provide consulting, training, and change management.

Strategy

The Wake County Innovation Team explores emerging technologies based on the defined needs of its business units. This includes identifying cutting-edge technology that may benefit the County operations and the citizens IS serves. A flexible and collaborative process is used intentionally involving business units, the local startup community, universities, other municipalities, the local Council of Governments, tech companies, IoT community conveners, and the civic tech community. IS shares processes, ideas, and discoveries with these entities to mutually support efforts.

The Innovation Team works closely with IT security and departments to fully vet new technologies and software while minimizing risk to the network. IS has successfully created an environment of collaboration, which assists in identifying, supporting, participating in and leading innovation initiatives that operate from the same mindset. The Innovation program was funded and staffed in FY18 and focuses solely on improving government and citizen services, exploring and implementing disruptive technologies, coordinating digital literacy and community broadband services, and engaging with the civic technology community. In addition to the dedicated staffing, the innovation program has a dedicated suite of labs and collaboration areas to facilitate innovation initiatives and pilot technologies. The process continues to evolve, and the collaboration with external partners has grown significantly.

Planned Initiatives

Internet of Things Technologies

IS is planning projects that will expand use of Internet of Things technologies to improve processes. One project is to install sensor technology that allows the County's General Services Administration department to remotely monitor emergency generators at more than 50 County facilities and schools. IS is also assisting with a plan to implement a flood telemetry monitoring system to monitor the County's flood control structures.



Blockchain and Robotic Process Automation Projects

IS is exploring a partnership with the enterprise resource planning system vendor to utilize blockchain and robotic process automation technologies to automate high volume, repeatable tasks with the result of increased trust in accuracy of data and transactions, reduced risk of fraud, and increased efficiencies.

Robotics in ECM Platform

IS is exploring the impact of robotics on the ECM platform. The project is in the discovery phase and IS expects to implement RPA (Robotic Process Automation) technology in early FY21. This technology will be used initially for:

- Changing highly sensitive passwords, replacing them in files and encrypting the files, thereby ensuring that no humans have access to the password.
- Intercepting on-boarding and off-boarding messages to automate reclaiming licenses and assigning them to new people in the same position.
- Logging into production servers at least 1X/day and ensuring that essential services are running and restarting them if necessary.
- Accessing NC FAST and retrieving case end dates, confirming client data, and removing expired data to provide up to date metadata in the new County Case Number application for use in federation and records expiration.
- Helping with “first line of support” for OnBase products by answering user questions and surfacing documents.

Change Management Projects

The IS Department’s Change Management Consultant liaises with user groups across the County to understand needs and points of frustrations and help IS business analysts focus on pain points during process re-engineering and requirements gathering. She works closely with the Communications Department on roll-out plans for citizen-facing systems, and her work has helped improve customer satisfaction in that it helps customers get acclimated more quickly to change and new processes. Four major change management projects are currently in progress:

WakeGOV.com Website Redesign

The WakeGOV.com website is the County’s single biggest point of contact with its citizens. It receives more than 15 million unique visits annually by people looking for information, requesting services, conducting business, and engaging with their local government. Since the website’s last redesign in 2012, technology has advanced significantly. Wake County is committed to improving WakeGOV and making it more relevant and user-friendly than ever before with a fresh look, streamlined navigation, meaningful, updated content, and enhanced functionality across all devices. With more than 3,000 pages of content on the legacy site, departments are challenged to reimagine, reengineer and rebuild WakeGOV for the future. Each department will have one or more representatives who will coordinate the analysis, selection, writing, editing, and loading of their department’s content into the new WakeGOV website. The result will be a completely redesigned web presence that will give site visitors the best possible online experience.

ERP Upgrade

Wake County is upgrading modules of its eWake ERP platform to the latest version. The upgrade represents a complete redesign of the user interface that is more intuitive and modern. eWake



areas encompass human resource management, financial, budget, recruiting, learning management, vendor management, and contract management. Since the application touches every employee (including timesheets and benefits election), an organizational change management plan is required to ensure employees are kept informed about project milestones that affect them, educated on how to navigate and use the completely redesigned interface, and quickly address any roadblocks to successful user adoption.

Developing a Countywide Change Management Program

The IT Change Management Consultant is tasked with developing an organizational change management program for Wake County. The program will include a standardized change management process that is repeatable and can be scaled up or down to meet the needs of the initiative. A change management toolkit of templates will be developed to aid departments, along with the help of a change management representative, clarify objectives and success criteria, conduct a needs assessment or stakeholder analysis, identify roles and responsibilities, develop communication and training plans, assess change readiness, and conduct post-initiative analysis and lessons learned. Another goal of the program is to establish a network of change agents representing every County department. This network of change agents would bring agency-specific business and cultural expertise to the planning and implementation phases of change management, which is an important component of successful change.

Re-organizing the IS WIRE

IS is evaluating its content on the employee intranet (the WIRE) and developing a plan to restructure it in such a way that employees can locate the information they want with minimal clicks. The main menu area on the intranet, Wake Spaces, allows for a maximum of 6-8 title areas that are used to quickly locate content. In the three years since the WIRE was launched, IS has added new product and service offerings. Additionally, content from a separate website, Wake Innovates, is being transitioned to the WIRE. These factors require that IS reorganize how its content is structured on the intranet for maximum ease of use.



Outcome 4: Protect the integrity, confidentiality, and availability of the County's information assets.

Strategy

Wake County continues to place a significant priority on information security. This is a countywide approach with a vision and culture that begins with the County Manager's office and is endorsed by the County's Senior Leadership Team (SLT). The County's security program benefits greatly from the Chief Information and Innovation Officer's (CIIO) Deputy County Manager role in the Manager's Office. This "seat at the table" has enabled the CIIO to advocate for security policy and programs that have greatly strengthened the County's security posture.

The Director of Information Services and the Chief Information Security Officer meet bi-monthly with the CIIO to discuss security initiatives and strategy and develop a shared vision. Over the past two years, this trio has presented numerous security policy, procedure, program, and training updates and associated requests to the Board of Commissioners, the SLT and the County's Extended Leadership Team. These updates and requests have been well received by County Leadership and have directly influenced staff buy-in to the County's cybersecurity philosophy and vision. Consequently, the County has very much benefited from a culture that encourages employees to make decisions and fulfil their day-to-day duties in alignment with the County's security policies and programs.

The County also utilizes an Information Risk Management Core Team (IRMCT) consisting of representatives from internal agencies to assess, manage and mitigate risk to the County's critical information assets. The IRMCT helps IS by guiding security policy and procedure development and the evaluation of security program and training updates, ensuring that any changes in technology or program direction are aligned with other County practices, including legal, personnel, risk management, and auditing. The IRMCT has been active since 2009 and is a cornerstone of the County's security program.

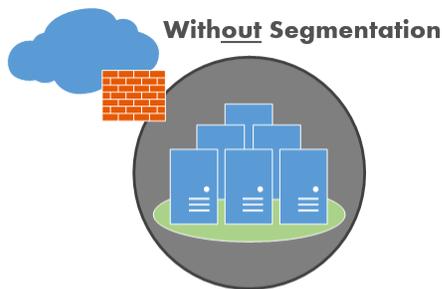
Planned Initiatives

Cybersecurity and Risk Management Enhancements

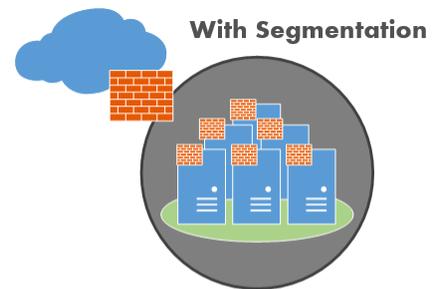
Wake County users do not currently receive the same level of protection off network as they do when they are connected to the Wake County network. Several of the security solutions are based at the perimeter of the data center and are intended to act on network traffic that is entering or leaving the Wake County network. As more solutions become cloud-based, users can work from anywhere and therefore need to have consistent security controls in place, regardless of their connection. This project will better protect all Wake County users by providing always-on security controls.

IS has identified opportunities to better protect critical resources within its data centers through enhanced network segmentation strategies. Perimeter security appliances are only as good as the traffic that they see, which generally does not include internal network traffic. Network segmentation provides additional controls that prevent devices from connecting to other devices where there is not business need. Segmenting the data center environment will isolate and contain malicious activity in the event a service is compromised.





Access controlled at the edge of the network only.
One compromised device can compromise all devices.



Access controlled at every device.
One compromised device can compromise only other devices to which it has access.

A password is a notoriously weak authenticator and, if used without additional mitigating controls, should only be used to protect low-risk systems. Higher-risk systems and networks require stronger controls, such as multifactor authentication. According to Verizon’s 2017 Data Breach Investigations Report¹, 81% of all hacking-related breaches in 2016 were perpetrated using stolen or weak passwords. This project will serve all Wake County users who require the ability to access the Wake County network and resources remotely. Requiring multifactor authentication when connecting to the Wake County network remotely will further protect Wake County IT resources in the event a user’s credentials are compromised. The use of multifactor authentication for access to email has already prevented the compromise of Wake County mailboxes involved in recent phishing attacks.

Incident Response Program

Wake County’s senior leadership team is committed to information security and appropriate incident response to accidental or deliberate unauthorized access, loss, disclosure, modification, disruption, or destruction of information or information resources. Wake County is building an Incident Response Program to provide an actionable information security incident handling capability that includes preparation, detection, analysis, containment, recovery, and reporting for information security incidents.

Coordinated Cybersecurity Assessments

IS is developing plans to complete cybersecurity assessments with the National Guard, the Multi-State Information Sharing and Analysis Center, and the Election Information Sharing and Analysis Center.

¹2017 Data Breach Investigations Report 10th Edition. 2017, https://enterprise.verizon.com/resources/reports/2017_dbir.pdf.

Outcome 5: Provision and maintain public safety platforms in support of first responders and citizens.

Strategy

Wake County Information Services continues to be a leader in collaborative public safety service provisioning. Partnerships with State & local entities have saved county tax payers millions of dollars while helping to ensure efficient, reliable and secure delivery of public safety services. The Raleigh Wake County Emergency Communications Center (RWECC) serves as the Public Safety Answering Point for all Wake County public safety services, providing intake/dispatching for 911 and non-emergency public safety calls. Wake County and the City of Raleigh have jointly operated the Computer Aided Dispatch system that serves the RWECC. IS also provides the 800 MHz radio system used by RWECC and over 50 public safety agencies in the county for emergency communications (7,500+ radios in use today). The 800 MHz platform accommodates MHz radio system infrastructure owned by Cary, NC and shared with Wake County under an interlocal agreement. The shared infrastructure partnership with Cary saves Wake taxpayers over \$2.2 million over the term of the partnership.

Planned Initiatives

800 MHz Radio System

IS is working to complete the improvement of communications via an upgrade of the County's 800 MHz radio system to digital technology. Improvements include construction of new towers and addition of components that promote interoperability, enhanced coverage, additional capacity, improved clarity, GPS tracking, and push-to-talk functionality. This includes partnerships with Apex, Cary, and the City of Raleigh for land leases which facilitated the construction of two towers in the south-eastern and south-western portions of the County to provide enhanced coverage. Construction of these towers is completing now. IS also partnered with the North Carolina Highway Patrol and the town of Cary to share tower infrastructure to improve coverage in the northern and central portions of the County. The tower partnerships are also managed under interlocal agreements.

IS is also working to enhance and add redundancy to the 800 MHz network through upgrades, such as a microwave ring design versus the existing hub and spoke design, network capacity and speed enhancements, and redundant fiber connectivity to the Town of Cary. Go-live for the new radio system is scheduled for early 2021.

Electronic Medical Records Technology for Detention Center

IS is assisting the Sheriff's Office with implementation of electronic medical records technology for detention center inmates, including a pharmacy application and customized workflows, templates, and reports.

Emergency Planning and Simulation Tool

IS is assisting the County's Emergency Medical Services Department to implement an advanced simulation-based planning tool that allows for the analysis, optimization and simulation of the County's Emergency Medical Services system. Utilizing historical data, the tool will allow analytical and visual functions to support improved operational and strategic decision making.



FINANCIAL REPORT

Strategy

The IS Department works closely with the offices of the County Manager (CMO) and Budget and Management Services (BMS) to develop both operating and capital IT budgeting strategies. During the annual budget process each winter, the IS Leadership Team (Director and five division Directors) participate in "think tank" sessions where teams across the County present rough ideas for technology needs. At the sessions, IS provides guidance (such as security concerns) and helps the proposer understand options (such as cloud versus on-premise data storage). IS assists with knowledge gathering and formulation of cost projections. 2020 was the County's second year conducting think tanks. The process has proved to be highly successful and results in better vetted and more accurately funded technology projects. It also ensures projects are not undertaken without IS Department input.

During the budget process, IS also manages 7-year forecasts for the Automation and Public Safety Systems Capital Improvement Plans (CIP). These plans provide long-range funding projections for capital investments in computer equipment, enterprise infrastructure, major automation projects, 800 MHz radio systems, and computer aided dispatch systems.

Funding for County departments' operating needs are also developed during the annual budget process. Each year IS reviews its business plan and reassess 5-year projections for new equipment, software, and staffing needs. IS requests expansions to its operating budget as needed and develop detailed business cases that are submitted in writing and in multiple presentations to the CMO and BMS. IS also assists other departments with their expansion requests, particularly those for technology-related staffing positions.

Many enterprise hardware and software funds are housed in the IS Department's operating budget. This has been a County practice for many years. It allows IS to effectively oversee spending, manage contracts, and ensure timely renewals to avoid service disruptions.

Operating Budget

Each County Department receives an annual operating budget for each fiscal year. The operating budget contains the department's employee salaries and benefits and funds to perform its standard operations. Departments may propose additional funding for new operations. These "expansion requests" are vetted by the Budget and County Manager's Offices before being presented to the BOC for approval.

Department salaries and benefits comprise 67% of the operating budget. Contracted services and systems software/hardware licensing and maintenance fees make up 30% of the budget, an increase of 6% over the prior year due to the implementation of additional cybersecurity tools. The remaining 3% of the budget includes all other operational costs, including data circuit charges, staff training and travel, and day-to-day supplies and utilities.



The operating budget is categorized into six divisions and 19 units that closely align with the department’s programs and services.

| Program | Operating Budget Division | Operating Budget Unit | |
|---|--------------------------------------|--------------------------------------|-----------------|
| Leadership | IS Administration | Information Services - Admin | |
| Solutions Development and Innovation | Solutions Development | Digital Media and Design Services | |
| | | Solutions Development and Innovation | |
| | | Application Development | |
| | | Enterprise Data Management | |
| Business Alignment | Business Applications | ERP - Finance/HR/Budget | |
| | | Land Systems | |
| | Human Services Systems | Enterprise Support | |
| | | IS - Public Health | |
| Foundation Services Security and Records Management Public Safety Systems | Customer Services | IS - Social Services | |
| | | Technical Infrastructure | Telecom |
| | | | Desktop Support |
| | Help Desk, Move and Asset Management | | |
| | Security | | |
| | Network | | |
| | Servers | | |
| | Computer Operations | | |
| | Database Operations | | |
| | Public Safety Systems | | |

Table 9.

Fiscal Year 2021 Operating Budget

The Wake County Board of Commissioners at its regular meeting on June 15, 2020, adopted the FY21 Budget, which runs from July 1, 2020, to June 30, 2021. The COVID-19 pandemic had a significant impact on the County’s financial picture, reducing projected revenue by \$29 million. The FY21 Budget Book may be viewed at <http://www.wakegov.com/budget/fy21/Documents/FY21%20Adopted%20Budget%20Book.pdf>

The IS FY21 operating budget is \$20.22M, which is a decrease of nearly \$550,000 from FY20. In April 2020, the financial implications of the COVID-19 pandemic became obvious, and the County Manager’s Office asked departments to propose operating budget reductions of 7%. For IS, the 7% reduction amounted to nearly \$1.5M. The CMO accepted approximately \$926,000 in reductions, including the elimination of four permanent personnel positions, one temporary position, and one internship position.

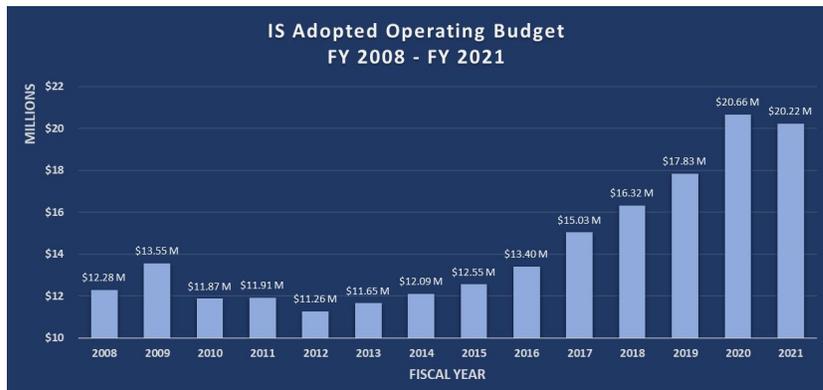


Table 10.

Prior to the COVID-19 pandemic, IS submitted six requests for expansion to the FY21 budget. Three of the requests were for permanent staff positions. Three were for new software or funding to support cost increases for existing software.

None of the expansion requests were accepted by the CMO. The business software increase was withdrawn after a financing plan was identified. The Senior Data Analyst position was created through the reduction process.

An Identity and Access Architect position was converted into the Senior Data Analyst position, and the savings counted toward the department’s reduction target.

Departments were also asked to identify savings of 1.5 percent in their FY20 operating budgets. IS met this request through lapsed salaries and cancellation of employee training and travel during the last quarter of FY20. A countywide hiring freeze was also put in place for three months during the summer of 2020.

Operating Budget Future Outlook

IS will continue efforts to achieve targeted goals and meet the growing demand for information technology services by requesting the addition of permanent positions in the areas of greatest need. Table 12 identifies the draft plan for staff expansion through FY25.

| Outcome | Program | Category | Request |
|---|---------------------|-----------|---------------------------------------|
| Provide modern, resilient, and easy to use technology platforms. | | | |
| | Foundation Services | Software | Business software cost increases |
| | Business Alignment | Software | Risk management software upgrade |
| Facilitate data driven decisions based on timely, reliable, and accurate data. | | | |
| | Data Management | Personnel | Senior Data Analyst |
| | Data Management | Personnel | Junior Data Analyst |
| | Data Management | Software | Data Warehouse |
| Provide consulting, training, and change management services. | | | |
| | Innovation | Personnel | IT Project Manager/Innovation Partner |

Table 11.

| Program | Service | Projected FTE Needs | | | |
|-------------------------------|-------------------------------|---|--------------------|-------------------|---------------------|
| | | FY22 | FY23 | FY24 | FY25 |
| Foundation Services | Server Services | | IT Server Engineer | | |
| Business Alignment | Document Management | | | | IT Systems Engineer |
| | Database Operations | | | Database Engineer | |
| Data Governance and Open Data | | Junior Data Analyst | | | |
| Solutions Development | Project Management/Innovation | Division’s staffing needs will be reviewed after New Division Director is hired in Fall 2020. | | | |
| Customer Services | Desktop Support | Desktop Support Technician | VDI Engineer | | |
| Total FTEs | | 2 | 2 | 1 | 1 |

Table 12.



Capital Improvement Plan (CIP)

Capital facilities and infrastructure are critical for the County’s continuing growth. Wake County has a proud legacy of long-term planning to serve current and future generations of citizens. Typically, capital expenditures are for facilities or projects that cost \$100,000 or more and require longer than one year to complete. CIP budgets are developed as a seven-year program of expenditures and are re-forecasted annually.

IS manages projects within two divisions of the County’s Capital Improvement Program: Public Safety Communications and Automation. Public Safety Communications includes computer aided dispatch systems and 800 MHz radio communications. The Automation CIP is organized into three programs. These are:

| | |
|---|---|
| <p>Enterprise Infrastructure Centrally managed procurement process to maintain and improve the County's technical infrastructure:</p> <ul style="list-style-type: none"> • Servers and storage systems • Network equipment • Backup and recovery systems • Licensing for enterprise services • Security hardware and software • The County's database platform • Specialty equipment for other County departments | <p>Major Projects Centrally managed procurement and project management process to replace, procure or upgrade major enterprise systems. It includes small, business-specific systems. These projects deliver technology improvements intended to improve business operations and business outcomes.</p> <p>The systems either benefit the entire organization, such as the eWake ERP system, or support large departmental operations that require significant investments in resources and time, such as the replacement of the public health care management system. As vendors upgrade large systems or as systems require replacement, upgrade or replacement projects will be scheduled with typical lead times of 18 to 24 months.</p> |
| <p>Computer Equipment Centrally managed procurement process to provide, maintain and upgrade the County’s desktops and mobile computer devices and associated peripherals.</p> | |

In addition to the standard funding re-forecasts made for the Public Safety Communications and Automation CIP budgets, changes were also made in response to the COVID-19 pandemic’s effect on County funding. Some planned projects were delayed to future years. Requests for new capital projects were also delayed or, in some cases, withdrawn.

| Division and Project | Sponsoring Department | Outcome |
|---|--|--|
| Major Automation Projects | | |
| Call center replacement professional services | IS | Withdrawn by IS |
| Data virtualization | IS | Withdrawn by IS, will resubmit for FY22 |
| Data warehouse | IS | Converted to expansion request, not recommended by CMO |
| Risk information system replacement | Finance | Approved to begin in FY21 |
| Personnel scheduling software | Sheriff | Approved to begin in FY21 |
| Cash handling solution | Finance | Approved to begin in FY22 |
| Fingerprint identification software | City-County Bureau of Investigation | Approved to begin in FY23 |

Table 13.



Public Safety Communications CIP Changes and New Requests

IS supports public safety communications systems utilized by emergency personnel in the County and its municipalities. These systems include 800MHz radio communications and the computer aided dispatch (CAD) system. No new CIP requests have been added this year to the seven-year plan.

Budgetary Achievements and Goals

This year IS tackled a persistent IT procurement challenge by employing its business productivity tool's intranet building capability in innovative ways. When County departments develop Requests for Proposals (RFP) and contracts for goods and services with an IT component, the IS Department reviews the documents to ensure they meet information security and other technical standards. Previous methods of review required passing documents back and forth via email or by viewing the documents on a shared drive.

In response to the need for a better process, IS created an intranet site for management of all RFP and contract reviews. The advantages of the intranet site are numerous. A single version of each document is shared instead of sending versions back and forth by email. Multiple users can edit a document at the same time. Users can view others' comments and edits in real time. The site allows IS to store and display metadata on each document, including the sponsoring department name, funding source, and contact person. IS can assign review tasks to specific users and sent alerts to those users. The site displays review deadline dates, so users can see when review tasks must be completed. Each user types their name in a grid when done so others can quickly see who has completed their review. Documents are archived once review is complete, so they are easily accessible in the future.

This innovative approach utilizes the site's library properties to store and display information, track tasks, and monitor completion. The site has shortened the turnaround time for IS review of RFPs and contracts from weeks to days. It has reduced confusion and duplication, and it helps better ensure the County is making safe and supported IT hardware and software purchases. To date, IS has reviewed more than 20 contracts and five RFPs on the site.

IS has three primary goals for improving budget operations over the next few years:

1. Resource planning and management is a priority for implementation within the portfolio management tool used by IS. The goal is to allow resource managers to better understand workload and manage resource assignments more effectively. The ultimate goal is to be able to do predictive analytics and better budget forecasting for future projects.
2. Expand IT vetting of capital improvement projects and budgetary expansions requested by County business units, including participation in "Think Tank" sessions and review of personnel position requests to ensure proper funding for IT needs.
3. Adopt central management of the County's multifunction (printer, copier, scan and fax) devices and administer replacement cycles and funding as a capital improvement project.



HORIZON CHALLENGES AND OPPORTUNITIES

Recruiting and Retaining Skilled Employees

Raleigh is consistently rated one of the best places to work in the U.S. Hiring IT professionals in the increasingly competitive Raleigh job market continues to be difficult, particularly attracting Security and Application Developer resources. Focusing on the right balance of incentives to attract top talent is a requirement for Wake County. In addition to competitive salaries, the County offers flexibility when it comes to where and when staff work, training, and education assistance, as well as an attractive work life balance.

Medicaid Transformation

North Carolina's health care landscape is slated to drastically change this year as the Medicaid system that serves the state's most vulnerable residents shifts to a managed care model. With the first patients expected to migrate over to the new system in July 2021, there are still plenty of unanswered questions concerning the impact the transformation will have on information technology resources managed by IS. As decisions are made, staff are working to determine updates required for technology solutions such as new system interfaces, new or enhanced systems and workflow modifications. In addition, staff are identifying training and support requirements, as well as opportunities for business partnerships. This is significant change and must be watched closely as Medicaid comprises more than 40% of the Wake County Health Clinic revenues. The Wake County Managers Office has assigned a committee to study Medicaid reform and members of IS will serve as team members.

Keeping Up with the Pace of Technological Change

Update frequency for many of the County's applications is increasing. Previously major updates were released every few years. In today's environment, application updates (especially for hosted systems) are smaller and more frequent. Although these more frequent updates tend to contain a smaller subset of changes, they still require deployment and application compatibility testing. The time required to test these regular updates affects application developers, system administrators, as well as end user support staff. In addition to updates, feature changes are often deployed as "on" by default, and new products may be available to all users as soon as they are released. These types of changes come through daily and require staff to remain vigilant in reviewing for potential impacts.

Digital transformation continues to be a challenge for Wake County Government. With the rapid change of technology, organizations are required to be agile and creative to match the technology presence that employees and citizens are accustomed to in their non-work lives. Local government services that are optimized, transformed, or augmented by digital technologies will be the expected baseline going forward. While emerging technologies, analytics and practices enable the organization to drive digital transformation deeper or more effectively, they also present new challenges.

The expectations of the community, businesses, workforce, and County leadership continue to rise. As the second decade of the new century approaches its end, the benchmarks for governments of the future will



become agile, integrated, cross-government service models that deliver better outcomes. At the same time, the organization recognizes the significance of largely untapped data and remains in the early stages of managing data as a strategic asset. The enterprise information management is being redefined as new data sources emerge, the value of existing unstructured data is unlocked, and the importance of data quality is better understood. Adopting an enterprise approach to information governance and data management is essential to extending their capabilities in critical areas such as security, advanced analytics, and artificial intelligence. The role this data will play in the decade ahead will be largely shaped by nontechnical considerations, such as bias, privacy, ethics, transparency, and associated legislation.

There is much to do. Wake County Information Services is actively building the foundation to meet these challenges head-on.



APPENDIX

Programs and Services

Functions of the IS Department are grouped into seven programs, each comprised of a catalog of services. Each program and its services are discussed in detail below.

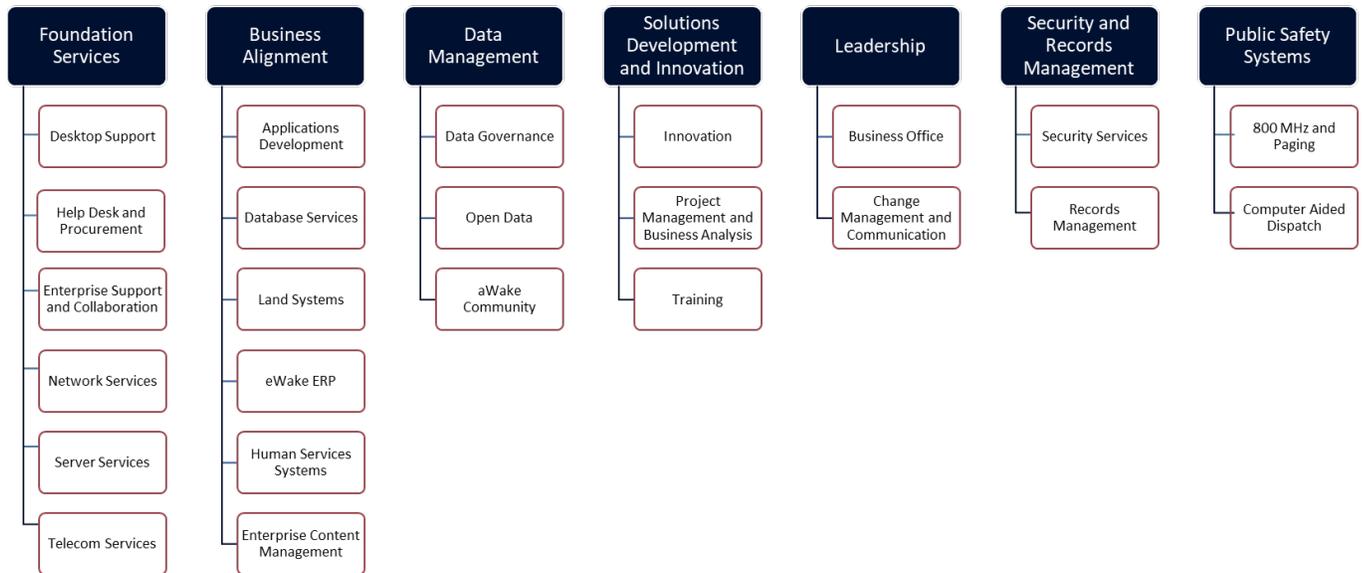


Table 14.

Leadership

Provide strategic planning, financial and personnel management and administrative services for the Information Services Department.

Business Office

Provide strategic planning, financial and personnel management, administrative services, operating and capital budget planning and management, and performance measurement for the department. Provide project management services and guidance for efficient implementation of initiatives.

Change Management and Communication

Provide a structured framework and consultation to help departments plan and execute programs of change by developing tailored change management strategies that focus on awareness, communication, training, and adoption for all stakeholders involved in and affected by the change. Facilitate a smooth transition from the current state to the desired future state with minimal disruption to the business.

Foundation Services

Provide innovative and reliable technical infrastructure and endpoint computing environments to deliver information and services to the community, County employees and municipal partners.

Desktop Support

Provide computer equipment hardware, software, and hand-held device support and maintenance, configuration and installation services, equipment moves and remote and on-site diagnostic, repair, troubleshooting, and replacement services. Also, provide system and application specific technical support including upgrades, documentation, training of end users, report creation, troubleshooting and issue resolution.

Enterprise Support and Collaboration

Provide email, calendaring, and employee directory management. This includes the provisioning and de-provisioning of network and email accounts and managing the integration of email and the employee directory with other County platforms. Deliver the County's communication and collaboration platforms that combine persistent workplace chat, video meetings, file storage (including collaboration on files), and application integration.

Help Desk and Procurement

Provide hardware and software telephone and email-based support including service request management, problem resolution, and desktop technician or other specialist dispatching for services not able to be provided remotely. Procurement services including ordering, receiving, inventorying, and surplus management of computer hardware and software components.

Network Services

Provide Wide Area Network (WAN) and Local Area Network (LAN) services for County facilities. Services include Internet service (primary and backup), wired and wireless network design, network upgrades, VPN remote access, and support.

Server Services

Provide implementation and management of network server hardware, server operating systems, and server virtualization platforms, including backup-and-recovery services and patch management. Provision and manage enterprise data storage systems. Manage network directory services that provide authentication and authorization for access to hosted resources. Manage an enterprise fax system, and network file and print services.

Telecom Services

Provide consultation and implementation services for telecommunications services including telephone set provisioning, call management systems, and voicemail. Provide management of wiring and cabling service contracts, installations of voice and data wiring and management of wiring jobs for County-owned and leased facilities. Manage contracts for the provision of local, long distance services.



Business Alignment

Make Wake County Government accessible and easy to do business with by providing customer friendly, cost-effective, electronic options for delivering information and services to the community, County employees and municipal partners.

Applications Development

Provide application architecture, development, testing, management and support. Manage enterprise development environments, including the WakeGOV website. Provide support for the County's web environment. Manage and support http application traffic using the County's traffic management platform.

Database Services

Provide database operational and development support for Wake County application systems. This includes the installation and management of database environments for critical applications supporting Land Records, Register of Deeds, GIS, Animal Control, Human Services, CCBI and EMS Departments of Wake County. The team is responsible for the ongoing support of databases providing planning, performance optimization, backup and recovery for these database systems.

Enterprise Content Management

Provide application and platform specific technical support including upgrades, documentation, training of end users, report creation, troubleshooting and issue resolution. First level support provided through system administrators closest to the end users.

eWake ERP

Support the hosted Enterprise Resource Planning system through reporting, vendor management, interface development and support, contract management, system and user security management, communication with vendor support personnel, and other responsibilities.

Human Services Systems

Provide computer system administration, business analysis, project management, contract review and creation, RFP creation, staff training, organizational project review and prioritization, application, portfolio management, and strategic and business planning for public health and social services applications.

Land Systems

Provide application development and support including defect management, release management, and system administration for the Tax Administration Department Property Tax System components that deliver billing and collections, revaluation, and computer-aided mass appraisal functionality. Provide computer system administration, business analysis, contract management, vendor management, technical support, training, and governance management for Parks and Recreation, Planning, and Permitting systems.



Enterprise Data Management

Provide structure for the management of the County's data assets while fostering a data-driven culture within the County, advocating how data can contribute to business success and improved citizen services.

Data Governance

Facilitate the management of data through planning, monitoring, and enforcing data management policies and procedures.

aWake Community

Manage the aWake (Analytics @ Wake) program, creating a community in which employees can learn how to effectively analyze and visualize data, collaborate, and share knowledge. This is achieved through an online community and in person events such as training and office hours.

Open Data

Provide an intuitive, interactive, and publicly accessible open data portal. Create and maintain data within the portal and seek opportunities for external data collaboration and sharing. Encourage innovation by connecting data owners and citizens.

Solutions Development and Innovation

Sustain the provision and delivery of technology services and systems through innovation, collaboration and the application of best practices in project delivery, business process analysis, re-engineering, and training.

Innovation

Support the capture and promotion of new ideas and solutions (internally and externally) via leadership, introduction of new opportunities, skills development, and business and process re-engineering. Provide opportunities to experiment with solutions and explore disruptive technologies.

Project Portfolio Management and Business Analysis

Provide project management services and guidance for efficient implementation of initiatives. Consult with departments on scoping of projects, timing, solution options and business process re-engineering. Provide management of the enterprise project and application portfolio to track and guide initiatives, priorities, life cycles and efficiency.

Training

Provide training on standard enterprise applications and support training of newly implemented tools and processes.



Security and Records Management

Provide design, implementation, management and monitoring of information security platforms, records management programs and policies in order to maintain the confidentiality, integrity and availability of information entrusted to Wake County Government.

Security Services

Provide design, management, monitoring and support of security systems and policies.

Records Management

Provide design, implementation, and maintenance for the Countywide records management program to comply with State records retention and disposition requirements. Consult with departments regarding records management best practices and provide training for defined processes and procedures. Consult on projects regarding document and content management.

Public Safety Systems

Provision and maintain public safety technology platforms in support of County and Municipal first responders and citizens.

800 MHz and Paging

Provide operational support and maintenance of the 800 MHz radio system, paging systems and mobile wireless data platform to meet the needs of the County, municipal and other public safety agencies. Maintenance of these platforms is accomplished through vendor contract management, coordinating planning efforts, and assisting with implementation of new facets of the system.

Computer Aided Dispatch

In conjunction with the City of Raleigh, provide operation support for the computer aided dispatch (CAD) and mobile data system utilized in three Public Safety Answering Points throughout Wake County to meet the needs of the County, municipal and other public safety agencies. Operational support includes many associated technologies required to provide rapid and accurate response to incidents, such as Automatic Vehicle Location, In-Vehicle Navigation, and Remote Dispatch capabilities.

