



ARLINGTON COUNTY DIGITAL STRATEGY

MAKING IT EASIER FOR PEOPLE TO INTERACT WITH GOVERNMENT



HEALTHY, SAFE AND SECURE COMMUNITY

Public Health Innovations

Integrated regional communications and emergency response

Situational Awareness



ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

Plan for sustainment

Economic development opportunities

Energy conservation alignment

Enrich transit choice possibilities



TRANSPARENCY AND ACCOUNTABILITY

Restructure processes for the digital age

Encourage citizen engagement

Collaboration and informed decision making

Partnerships for opportunities



PRIVACY, SECURITY AND RESILIENCY

Preserve County information

Safeguard individual's information

Provide resiliency and continuity of operations.

WHAT YOU NEED, WHEN YOU NEED IT, THE WAY YOU WANT IT.

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1. Introduction

This document defines the County's fourth technology strategy and its first digital strategy. This plan is much more than Arlington's roadmap for technology; it is a business plan to realize the County's strategic goals. Our digital strategy defines, for the Arlington community, our approach to using technology to enable the delivery of services to make Arlington a great place to live, work, and grow a business.

The objective of our business plan is to define how technology can support a vibrant community that is inclusive and considerate of our diverse population, from the most tech-savvy to those who cannot or who are not inclined to use technology. An important component of the plan is reaching out to the community, our partners and others in a move toward an "intelligent" community – to transform the way we live and work today. Our investments will focus on satisfying constituent needs, developing a "digital mindset" with a focus on the future, and utilizing technology to make a difference in people's everyday lives.

Technology is changing rapidly and having a significant impact on our daily lives, so innovation must be a part of everything we do. We are committed to transforming how we do business by accelerating the creation and use of digital services through innovative practices, process improvements, knowledge exchanges, and collaborative efforts. The initiatives we undertake will address challenges such as streamlining how residents and businesses request and pay for services; ensuring a healthy, safe community; providing for the effective movement of people and vehicles within and through the County; protecting the privacy and security of constituent data; managing energy usage; providing a connected community to encourage economic development; addressing both public health and support of our population in need; and engaging partners with decision-making and service delivery.

How we do business is governed by principles that we consider the "rules of engagement" with our partners and customers. Each initiative we undertake is approached with this framework to guide us, providing a consistent approach to the tools and services we deliver. Our principles consist of:

- Alignment – Coordinating our efforts to realize the County's strategic goals
- Engagement – Encouraging participation in the development of constituent services
- Agility – Being flexible and responsive to changing needs of the community
- Empowerment – Enabling County staff to deliver transformative services
- Continuous Improvement – Investing in effective and efficient processes and solutions
- Stewardship – Ensuring the integrity and fiscal responsibility of our actions

As a result, our digital strategy is based on an approach that puts our customers first, and ensures that our practices offer the right blend of technology solutions with human engagement. The goal of our digital strategy is to give you what you need, when you need it, and the way you want it.

2. Background

The goal of Arlington County's previous Master Plans was to support the transformation of government service through the use of technology. The first two plans established the foundation and the initiatives needed to begin the transformation. When the third E-Government Master Plan was written in the winter of 2010, the themes of sustainment, work force empowerment, and enhanced citizen service delivery were identified as the major objectives for the County's technology investment priorities.

Five years later, these themes largely remain constant, but technology events and trends have driven the need for an updated approach. Since the writing of E-Government Master Plan III, a number of dramatic technology changes have occurred:

- We have a digitally-aware community that expects to interact with public services the same way they do in a consumer environment.
- Social networking is now considered an essential communications medium.
- Users expect wireless to be as available and dependable as wired.
- Providing protection against cyber hacking threats both from without and within is critical.
- There has been an unprecedented adoption of mobile tools like the iPad that are affordable, powerful work tools.
- "Cloud" services are everywhere. The question is no longer "Should we consider?", but "Why have not we adopted the cloud for every service?"
- Every day, newly-released internet-capable devices are monitoring and transmitting data that is critical to the safety, security, and improved service delivery in the County.
- The County's collection of data is growing rapidly. In four years, it has doubled in size to 45 terabytes of data, which is the equivalent of four times the size of the entire Library of Congress collection. Each year we are adding the equivalent of one such collection in County data.
- Records management is no longer a compliance goal, but a requirement to ensure privacy, security, and findability.

The pace of technology change continues to accelerate. Digital services are now the norm, rather than the exception. The goals of our previous e-Government Master plans were to utilize technology to automate, streamline and web-enable the processes and procedures by which the government functioned. Processes and procedures were developed primarily to serve the need of the government, not necessarily the 'wants' of the County residents and businesses.

We believe it is time to change the nature of technology investment. Rather than creating new ways to access existing services, we will re-examine our processes in terms of what is happening in the community. Today, residents are accustomed to shopping online, reviewing what others have to say, finding the best value, ordering the product or service, and having it delivered in the form they want. They expect the same of their government. To meet this challenge, government must recognize the challenge and adapt to deliver such digital services.

3. Strategic Goals

The overarching goal of our digital strategy is to make it easier for people to interact with government – to allow individuals to access the information they need, when they need it, and to create an environment where an “intelligent” community will transform the way we live and work today.

Previously, we developed strategies we called e-government master plans. These plans identified technology initiatives that would streamline access to existing government processes, which were designed to satisfy the government’s needs. We are introducing the concept of a digital strategy whereby technology enables the delivery of services that satisfy the preferences of our residents. The forces of cloud, data, mobility, and social have been introduced and accepted by our community and the expectation by our residents is their relationship with government will be the same as it is with the world around them.

This plan takes into consideration two distinct and concurrent technology approaches – working both heads down and eyes forward. We will continue to focus on traditional technology, doing the day-to-day work of ensuring that technology functions appropriately and securely, defining long-term plans, managing technology budgets, and enforcing a disciplined approach to deployments. Simultaneously, we will also focus on agile use of technology, so we can respond quickly to evolving opportunities. We have created a mature, efficient and agile technology competency center, and we are committed to making the necessary investments to continue this path forward.

As we realize the benefits of a digital strategy and achieve the goals of an “intelligent” community, we will align our technology efforts with the needs and goals of the service departments who provide for our constituents. We see that alignment as follows:

Goal	What	Why	How
Healthy, Safe and Secure Community	Enable the County’s public health, public safety and emergency management responders to provide a healthy, safe, and secure community.	More than ever, technology is integrated with health care services and public safety activities. They are dependent upon technology in the performance of their duties.	<ul style="list-style-type: none"> • Apply digital innovations to transform public health and human services practices • Leverage new opportunities for integrated regional communications and emergency response • Expand technology tools for comprehensive situational awareness • Take advantage of new technology to support advanced, resilient emergency communications

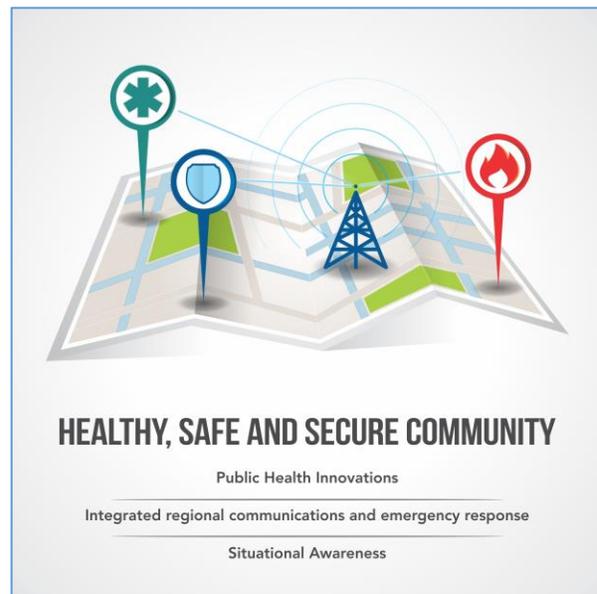
Goal	What	Why	How
Economic and Environmental Sustainability	Distinguish Arlington County as a vibrant, inclusive, livable community.	Leveraging technology to continue to attract and retain individuals, businesses, and institutions.	<ul style="list-style-type: none"> • Plan for sustainment, capacity and refreshment of the County’s electronic resources • Provide economic development initiatives to increase commercial occupancy rates • Align with energy conservation and sustainment goals identified in the County’s Community Energy Plan • Enrich transit choice possibilities
Transparency and Accountability	Provide transparency and accountability of County initiatives to assure responsible use of tax dollars and encourage collaboration with the community.	Providing open access empowers us to assure confidence in government, encourage third party innovation, and improve the services we provide.	<ul style="list-style-type: none"> • Restructure processes for the digital age • Involve constituents to increase their participation and engagement • Provide analytics to encourage collaboration and facilitate informed decision making • Leverage opportunities to partner for new and improved ways of providing citizen services
Privacy, Security and Resiliency	Fulfill the trust of the community in our information and infrastructure.	In a time of increasing awareness for security and privacy, we are committed to ensuring the safety of our information and infrastructure.	<ul style="list-style-type: none"> • Ensure the protection of the County’s infrastructure, both from within and without • Preserve and protect the official records of the County • Protect the information of those who engage with the County • Provide resiliency and continuity of operations

HEALTHY, SAFE AND SECURE COMMUNITY

Enable the County's public health, public safety and emergency management responders to provide for a healthy, safe, and secure community.

More than ever, technology is integrated with health care services and public safety activities. They are dependent upon technology in the performance of their duties.

Arlington County has led the nation as being a model for the integration of all public safety, public health, emergency management, and technology services. Under the leadership of these areas, technology investments are focused to further enhance the capabilities and resiliency of those responsible for the safety and security of the community. This emphasis is based on the realization and agreement that technology is an essential elemental tool. The variety and sophistication of their technology needs requires that information technology be fully integrated into daily support functions of the County.



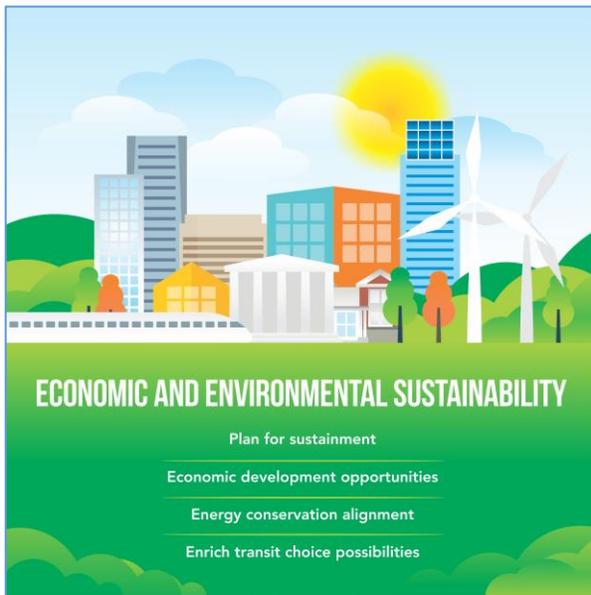
- Apply digital innovations to transform public health and human services practices:** Today, we face unprecedented health care and social "safety net" demands. Emerging technologies have the potential to extend the reach of health and social services professionals, influence public health practices, and improve the provisioning of health and social services. We seek to utilize technology to support our human services staff that deliver medical and social services in schools and throughout the County. With a focus on technology-enabled innovations, we can improve access to care, quality of service, and reduce costs.
- Leverage new opportunities for integrated regional communications and emergency response:** There is a growing need to continue standardizing and enhancing communications and the exchange of high speed, secure data and video. Integrated radio communications have been available in the National Capital Region since the 1980's. Other capabilities soon followed, including the interchange of crime intelligence and license plate recognition. In addition, the electronic exchange of 911 call information among fire response centers in Alexandria, Fairfax and Arlington was introduced, reducing the time required to reach a caller by half. The federal government is supporting development of a new system that will provide broadband telecommunications for the transmission of video and data. The cost will be high, but the benefits for improved, integrated communications across jurisdictions will justify the investment. We will support new opportunities that permit the integration and technology redundancy of operations in such mission critical areas as emergency operations, public health and 911 telephone services.

- **Expand technology tools for comprehensive situational awareness:** Providing situational awareness will help us monitor what is happening around us to anticipate and react quickly if an event occurs. Weather-related events require comprehensive assessment of damage; man-made incidents or public health concerns necessitate a coordinated response; and special events such as July 4th or an Inauguration require the establishment of monitoring capabilities. All of these are dependent upon a variety of technologies to provide secure voice and data connections. We will support initiatives that provide improved situational awareness by gathering and analyzing information, and by providing tools to make quick decisions on how to plan for or respond to major events or emergencies.
- **Take advantage of new technology to support advanced, resilient emergency communications:** Public safety communications must accommodate advances in social networking that is based on text and instant messaging and in-building public safety wireless communications. Technology advances are improving these two key challenges for emergency responders. Today, 911 call centers receive mobile calls or texts, but are unable to pinpoint precisely where the person making the call or text is located. The next generation of 911 call systems will add the ability for 911 centers to locate a person calling or texting from a mobile device. In addition, first responders can experience problems communicating in large buildings during fires or other emergencies. The County already has taken the lead to encourage a new standard for in-building public safety wireless communications. We will work with developers to encourage the installation of this improved wireless capability in buildings throughout the County. The County will continue to plan for, and implement, the new systems being developed to address both these issues.

ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

Distinguish Arlington County as a vibrant, inclusive, livable community.

Leveraging technology to continue to attract and retain individuals, businesses, and institutions.



The County's business plan reflects the move toward an "intelligent" county/city, where we work with citizens to continue to fuel sustainable development and provide a high quality of life. Our investments focus on people, constituent services, and management of our resources. Technology is a critical component of streamlining how government conducts business, promotes economic development, and helps improve the lives of its citizens. Our "integrated, inclusive, and involved" focus will ensure the future health and vitality of our community, and demonstrate how we make a difference in people's everyday lives.

We will leverage the County's fiber network to go beyond connecting buildings -- supporting opportunities for comprehensive wireless access and connectivity options for businesses. In addition our fiber network can serve as a backbone for additional services that can revolutionize the way the citizens use County resources, as well as how the County manages those resources.

- Plan for sustainment, capacity and refreshment of the County's electronic resources:** We must focus on developing and adhering to a methodical process to examine and refresh the technology inventory of the County, so that it may continue to provide value. This strategy will deliver a normalized, predictable refreshment cycle by documenting and scheduling refreshments well in advance of them becoming an emergency. As part of this process, we will also exhibit willpower in retiring technology that no longer meets the demands of our digital strategy. We will assess the most appropriate approach to refreshment and retirement by taking into account the changing business needs and leveraging synergistic opportunities that create enhanced value and efficiency in the most economical manner.
- Support economic development initiatives to increase commercial occupancy rates:** Leveraging the investments made to create choice, affordability and performance in broadband telecommunications will be an essential initiative for economic development. In 2013, the County decided to expand opportunities for use of the fiber network being constructed by offering bandwidth to businesses, institutions of higher education, and government for the purposes of encouraging further economic development. This provides

Arlington with a competitive edge in attracting and retaining businesses. This strategy is consistent with the four goals of the County's Economic Development Strategic Plan, *Arlington's Framework for Prosperity*:

1. Arlington will be recognized for its superior business environment which includes world-class facilities, infrastructure and systems;
2. Arlington will support a sustainable and flourishing economy which will contribute meaningfully to a fiscally sound and healthy community;
3. Arlington will be an inclusive and interconnected community that fosters an innovative and creative workforce, supported by effective workforce development programs; and,
4. Arlington will enjoy high quality places that ensure an exceptional quality of life and offer amenities that are valued by residents, businesses, and visitors.

The investment in this phase of the County's fiber network continues a long history of Arlington making significant investments in the future growth and sustainability of Arlington, akin to Arlington's initial and ongoing investments in Metrorail and transit services. We will continue our commitment to "intelligent" growth land use planning that has made Arlington a national and regional model for fiscal balance, stability, and growth.

- **Align with energy conservation and sustainment goals identified in the County's Community Energy Plan:** Technology is a key enabler to achieving the goals of the County's Community Energy Plan (CEP). Arlington's CEP states that the Plan goals must be integrated into all government activities in order to succeed. Technology will support and help fulfill the objectives of the CEP, by providing the tools to monitor, manage, and report on energy use. Areas of focus for us to drive "intelligent" energy conservation include:
 - Provide residents and businesses with better, clearer information about their energy consumption.
 - Utilize the "Internet of Things" technologies to monitor usage and provide personalized, customized information to manage energy consumption.
 - Leverage the County's fiber network to create District Energy System (DES) governance models in those areas with the highest density and greatest opportunities for energy savings.
 - Concentrate our efforts in well managed centers of excellence.
- **Enrich transit choice possibilities:** The location of Arlington as both a destination and its proximity to Washington, presents challenges in the transport of individuals and vehicles. Whether people walk, ride bikes, drive or take public transportation, digital technology can help monitor, manage and provide benefits that will improve travel in and through Arlington. The utilization of technology can help reduce congestion and emissions, provide real-time route planning information, and enable high-tech passenger amenities such as Wi-Fi Internet access. We will utilize innovative technology to make it easier for people to travel in and around Arlington.

TRANSPARENCY AND ACCOUNTABILITY

Provide transparency and accountability of County initiatives to assure responsible use of tax dollars and encourage collaboration with the community.

Providing open access empowers us to assure confidence in government, encourage third party innovation, and improve the services we provide.

As a public entity, the County has the responsibility to be transparent by making its deliberations, actions, decisions, and allocation of its resources visible. To create an environment where true transparency exists, it is the County's obligation to ensure that information is presented in a manner that is easily consumable by users, whether it is County staff or the public. Modernizing processes and providing easy access to digital information can enhance public engagement and create opportunities for collaboration with the community and with partners. In addition, the services that others develop using County data. No organization has all the resources they need. Working with others will drive development of new programs and services that will attract and retain businesses and residents in Arlington.



- Restructure processes for the digital age:** County processes developed years ago must be redesigned to react to a new, faster paced, more informed community. The County will restructure its processes, leveraging technology to both drive analysis and decisions, as well as providing a lens for the community throughout the process of decision-making. To ensure maximum benefit, we will prioritize the business processes to be updated and the service offerings to be redesigned. As our systems continue to grow and evolve, we will ensure that the roadmaps for these systems are consistent with our goals of transparency and fiscal accountability.
- Involve constituents to increase their participation and engagement:** Today's expectation is that interaction with government should be simple and fast. The "Arlington Way" of citizens and businesses engaging with the County is a core thread in the fabric of this County. The PLACE (Participation, Leadership and Civic Engagement) initiative initiated by the County Board demonstrates the County's continued commitment to engagement, using technology to increase the opportunities for citizens to participate in the decision-making process. Social media offers tremendous opportunities for us to communicate with the public, interested stakeholders, and each other, and digital data creates prospects for information to

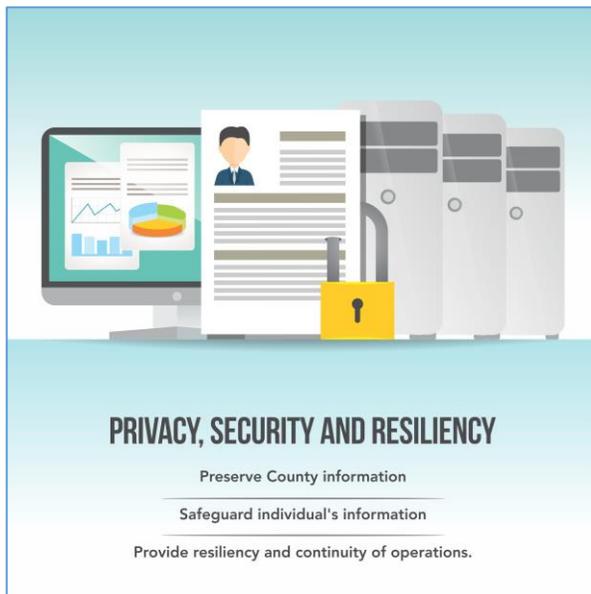
get to the right people at the right time. We will provide constituents with simple tools to monitor County decisions and initiatives, as well as provide increased access into government with services like a virtual town hall. Our user-centric approach will allow us to create an interface that works for what the citizen and business needs.

- **Provide analytics to encourage collaboration and facilitate informed decision making:** There is a recognition that the exponential growth of data will have an impact on Arlington County government operations and service delivery. The amount of information available is changing the way agencies conduct their business. With a focus on business processes and efficiencies, interdepartmental groups are collaborating for better information sharing and governance. Applying analytical tools to this data will ensure County decisions are driven by predictive analysis and reflect constituent needs. We will develop and apply policies that govern standard data input, management and data storage. These efforts will improve the speed and accuracy of our transaction processing and service delivery.
- **Leverage opportunities to partner for new and improved ways of providing citizen services:** Government does not have to be the sole provider of services to the community; exploring new channels of service development and delivery are key to this plan. We seek to provide easy public access and use of County data to improve the services we offer, as well as encourage third parties to develop creative versions of existing services, or provide services where there are gaps. We are formalizing our "open" data program to share information freely, save money, and create new opportunities for innovative products or services that benefit the County. Within a defined framework for access to County data, we will work with or provide tools to interested parties to drive development of new programs and services that will attract and retain businesses and residents in Arlington.

PRIVACY, SECURITY, AND RESILIENCY

Fulfill the trust of the community in our information and infrastructure.

In a time of increasing awareness for security and privacy, we are committed to ensuring the safety of our information and infrastructure.



One of the primary goals of the Department of Technology Services is to fulfill the trust bestowed on us by the Board and the County Manager to safeguard the privacy and security of the County's electronic information services, systems, and data. The complexity of this task has grown exponentially over the years. Today, the number and types of attempts to compromise the County network has increased a hundred fold, and the sophistication of these attempts has matured, requiring a persistent, coordinated approach to defending the County from cyber security attacks. In addition, the growth in mobility and systems that leverage mobile access has generated a need for an expanded security presence to assure the County's electronic

resources are not compromised from within. The County must continue to invest in initiatives that provide defenses to make our infrastructure impenetrable, and guarantee the highest possible level of privacy and security of our information.

- Ensure the protection of the County's infrastructure, both from within and without:** Persistent attention to both internal and external attempts to compromise the County's network infrastructure will be a priority. Critical infrastructure elements such as traffic signals, drinking water quality, storm-water and waste water management, and electronic sign messaging are monitored by Internet-based tools and, as such, are new areas requiring cyber security measures. Popularly called SCADA (Supervisory Control and Data Acquisition) systems, these systems have become part of the security management control responsibilities of the County. We will continue to closely monitor these systems and expand our monitors and controls as these types of systems expand.
- Preserve and protect the official records of the County:** The amount of electronic records generated in the County is growing rapidly, and has generated a need for an updated approach to the County's capture, classification, retention, and retirement of those records. Satisfying the compliance, retention and privacy requirements of County official records will be our goal. In 2012, the County hired its first Chief Records Management Officer. Since his

arrival, the County has embarked upon a systematic effort to classify and store both its paper and electronic information. Documents that are not considered records are being destroyed, as required, to insure that only those critical records are retained, and that access is managed appropriately. This guarantees that access to records is controlled, and that privacy and security requirements are satisfied. We will continue to evolve and support records management in concert with Library of Virginia policies and practices.

- **Protect the information of those who engage with the County:** C2G (Citizen to Government), and B2G (Business to Government) electronic transactions are becoming the norm for the payment of fines, fees and taxes, the continued attention to securing these will be our focus. Citizens, businesses and others who engage with the County deserve safeguards against intrusions into their personal information. Existing County systems are routinely reviewed and updated to maintain the most current standards for data security protection. As new means of capturing data are introduced, we must be vigilant that proper measures are put in place to secure information. The County will continue to maintain appropriate physical, electronic, and managerial procedures and systems to secure the information it collects.
- **Provide resiliency and continuity of operations:** Technology is an essential, critical component of the County's daily business operations, and it is important that the County's core technology systems are managed to assure operations continue, even in the event of a disaster. Continuity of Operations (CooP) and Disaster Recovery arising from natural events and planned disruptions of service will continue as a focus for the County. Today, our investments focus on maintaining support systems in two data centers within the County, but the Internet and other advances in technology have presented us with new options for better geographic diversity to improve business continuity and potential disaster recovery. Services such as cloud computing expand the capabilities of our technology capabilities, and resources. We will seek opportunities to leverage partner expertise to improve recoverability in case one datacenter is impacted, as well as take advantage of outside expertise and the latest in lower-cost options for managing and storing applications and information.

4. Conclusion

We have created a plan that is less about technology initiatives and more about enabling the services provided to the community. Our goals demonstrate the recognition that technology is becoming a utility. As a utility, there is the expectation that the government provides technology-based services our residents, businesses and institutions have become accustomed to in their lives. Yet, investing in more technology that merely automates current government processes will fail to realize the value that is possible through a rethinking of how government could operate. The expectations of the community for efficiency, transparency and accountability continue to grow. "E-Government" plans were designed to automate back office government processes to serve the community. In this plan we introduced the concept of a "Digital Strategy", where we explain how we will address existing processes with

technology solutions to more effectively and efficiently meet the expectation of the community.

With the Digital Strategy we have created a framework for the digitalization of county services. In the true spirit of transparency, the plan has set “outcomes” that will be measured through an interactive collaborative portal where the objectives will be stated, progress reported, and comments welcomed.